MERCHANT SAIL

WILLIAM ARMSTRONG FAIRBURN

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VOLUME II

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IN SIX VOLUMES

Volume II

The War of 1812; Pre-eminence of U.S. Commerce before the Civil War; Fisheries and Whaling; U.S. World Leadership in Scientific Navigation; the Sailing Packet Era; Steam Navigation; the Clipper Ship Era and the Rise and Decline of the U.S. Merchant Marine

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VI.

THE WAR OF 1812

America's Second War with Britain—for Freedom and Complete Independence

FOLLOWING the clean-up of the Barbary pirate menace by the United States Navy through the work of Preble and Rodgers in 1804 and 1805, American foreign commerce had fared badly not only at the hands of Britain and France—being caught between the hammer and the anvil of these belligerent powers—but also by the lack of national unity and a far-sighted, constructive and courageous policy and by the injury wrought through the embargo and "peaceful coercion" program of President Jefferson. The total export trade of the United States, which was $138,000,000 in 1807, dropped to $22,000,000 in 1808; it had risen to around $50,000,000 just before hostilities commenced with Britain, and the war drove it down to $7,000,000 in 1814. Notwithstanding the attitude of the British and French and the policy of the United States during the administrations of Jefferson (1801-1809), American merchant ship tonnage had increased from a scant half million tons in 1790 and somewhat less than a million tons in 1800 to nearly one and a half million tons in 1810, and of this tonnage, the vessels registered for foreign trade aggregated about 350,000 tons in 1790, 650,000 tons in 1800, and were reported as 980,000 tons in 1810. (Alden and Westcott write: "To realize the importance of this commerce to the nation, it should be noted that in 1810 American shipping in foreign trade was only slightly under a million tons, and our entire merchant tonnage of over two million was about two-fifths that of the British.")

The following U. S. Government figures, whereas evidently not comparative, are the only official statistics that represent an attempt to show in a general way how the War of 1812 affected United States shipping and foreign commerce:

Dec. 31	Shipping Tonnage: Registered Foreign Trade	Shipping Tonnage: Total	Total Foreign Commerce	Percentage of Foreign Trade in American Bottoms
1812	758,636	1,269,997	$115,557,236	82.5
1813	672,700	1,166,628	49,861,017	68.0
1814	674,633	1,159,209	19,892,441	54.5
1815	854,295	1,368,128	165,599,027	74.0
1816	800,760	1,372,219	229,023,052	70.5
1817	804,851	1,399,912	186,921,569	76.5

No attempt was seriously made by the government until 1818 to strike from the register all vessels "supposed by the collectors to have been lost at sea, captured, etc." As of December 31, 1818, the tonnage of foreign trade registered vessels was stated as 589,954 tons, and the tonnage of the total U. S. merchant marine was given as 1,225,185 tons.

Prior to the war, the official figures were also erratic, for in 1810 the tonnage of foreign trade registered vessels was stated as 981,019 tons and of the total U. S. merchant marine, 1,424,783 tons. Between December 31, 1810, and 1818, therefore, the records show that the shipping tonnage of the United States registered for foreign service declined 391,065 tons (or 40 per cent) and the total shipping tonnage, 199,598 tons (or 14 per cent); but the figure for foreign trade tonnage at the end of 1810 is deemed to have been inaccurate as were later admittedly the tonnage figures of the war years and the early post-war years of 1815-1817 inclusive. The statistics for total foreign commerce (i.e., exports and imports combined) are far more accurate and show a drop of from $152,157,970 in 1810 to only $19,892,441 (or about one-eighth as much) in 1814, with a recovery to $165,599,027 in 1815, an artificially high volume in 1816 and 1818, and $186,921,569 in 1817. The percentage of total foreign United States commerce carried in American bottoms dropped from 92.0 per cent in 1807, 91.5 per cent in 1810, and 88.0 per cent in 1811 to 54.5 per cent in 1814; it was back to 82.5 per cent in 1818, but reached 92.3 and 92.5 per cent in 1825 and 1826, respectively. The only official United States statistics that attempt to show the construction, captures, and losses of American floating tonnage during the war and early post-war years are set forth herewith. The tonnage figures do not reflect the numerous vessels captured from the enemy that were sold in friendly foreign ports. (No corresponding figures are available for 1812.)

Year Ending Dec. 31	Built	Captured from Enemy	Total Increase	Lost	Abandoned	Sold to Aliens	Captured by Enemy	Other Causes	Total Decrease	Total Net Increase
1813	32,583	1,390	33,973	45,273	2,955	56,954	28,556	1,739	135,477	101,504 decrease
1814	29,751	8,817	38,568	5,976	1,337	15,193	16,146	—	38,652	84 decrease
1815	155,579	36,600	192,179	17,503	3,303	9,582	30,774	—	61,162	131,017
1816	135,186	—	135,186	22,591	6,701	23,379	—	—	52,671	82,515
1817	87,626	—	87,626	20,673	8,411	14,228	—	—	43,312	44,314

Prior to the War of 1812, the United States enjoyed benefits flowing to it as the principal neutral ocean carrier; yet it suffered greatly from the restrictions placed upon its commerce by the belligerent powers. On the basis of "rights flouted and injuries inflicted" to its shipping and commerce, it was a toss-up for years as to whether or not the United States should make war, in defense of its honor, against France or Britain. Trade difficulties with both countries had greatly troubled American diplomacy almost constantly since 1793. During the period 1807-1812, the French (under Napoleon) confiscated 558 American ships, and the British seized 389 United States vessels. The French, when it suited them, declared Americans as a branch of the hated British nation and acted accordingly; yet France needed American trade. On the other hand, Britain maintained a "divine right" rule of the seas. Its arbitrary commerce restrictions were particularly galling and its arrogant superiority complex chafing to Americans, who had waged a revolutionary war to escape its domination and win freedom from its control ashore or afloat. The intermittently antagonistic French policy in regard to American commerce was surely encouraged by the British principle of "inalienable allegiance" and the persistent declaration, "Once an Englishman, always an Englishman." The sound United States declaration that an American vessel—naval or mercantile—on the high seas was United States territory (as well as property) and that foreign law did not apply on the deck of an American ship any more than it would on United States soil was contemptuously ignored by the British. They persisted in their practice of impressment to the great harm of American commerce and the peace of mind of American sailors who happened to be British-born or, bearing British names, did not possess documentary proof that they were American-born; evidently citizenship by residence, choice, and oath was ignored.

Whereas the War of 1812 has been designated as a seaman's war and a war to end the bitter grievance of British impressment and put a stop to arbitrary British restraints on American trade, it was, in fact, not New England nor the maritime states but the western and southern states, primarily interested in "land and agriculture," that in Congress turned the balance and voted in favor of resort to arms. The war was not popular in the New England states, for notwithstanding their trials and humiliations, the shipping interests were profiting greatly in "neutral trade" and—if not interfered with too much by foolish national laws—were meeting with a great measure of success through resourcefulness in coping with such prevailing conditions as were adverse and in capitalizing to the full all that were favorable; therefore, they opposed a war which they knew would put an end to the prosperity they were then enjoying. Strange as it may seem, the "War Hawks," being from the West and South, thought more of Canadian conquest, the halting of British traffic with the Indians, and the opening of the way for expansion of the United States to the West and the North than they did of foreign trade (i.e., ocean traffic) and the impressment of American sailors. Henry Clay (1777-1852), of Lexington, Ky. (but born in Hanover County, Va.), speaker of the House of Representatives, whose influence in Congress did more than that of any other man (even of President Madison himself) to precipitate the war with Britain, declared: "The conquest of Canada is in our power. . . . Is it nothing to extinguish the torch that lights up savage warfare? Is it nothing to acquire the entire fur trade connected with that country?" Clay could not have been so deeply stirred by the arrogance and injustice of Britain toward American marine commerce and its sailors, for as a peace commissioner at Ghent he signed a treaty on December 24, 1814, that ended the war with Britain, but in which nothing was said about the impressment of American sailors or such vital controversial matters as trade restrictions, the fisheries, and the navigation of the Mississippi.

Notwithstanding all the border fighting on land, the War of 1812 was primarily a naval war. Despite no preparations, its lack of popularity, and the necessity for fighting against tremendous odds, the United States Navy strengthened itself and its traditions and actually built up national morale as the war advanced, emerging relatively strong, with a record of many brilliant single-ship actions and two decisive squadron victories on Lake Erie and Lake Champlain.

On land the war opened with disaster (General Hull's surrender at Detroit), and despite the call for 50,000 volunteers, the campaigns were fought largely by levies of raw militia and by the regular army of less than 10,000 men, only about half of whom were available on the northern border. Futile attempts at invasion were followed by defeat or abortion, and it took two years to weed out politically appointed officers in the army and replace them with able commanders. With men drilled and brought into effective condition, two successful battles—Chippewa and Lundy's Lane—were fought in 1814 and gave some credit to the army toward the close of the war. However, so weak were the land forces and the nation's defenses that in August 1814 a British punitive expedition (also intended as a diversion to hold American troops away from the northern border) met no effective resistance when it landed and burned Washington, with its capitol, White House, and other public buildings. The Washington navy yard authorities themselves destroyed by fire the 44-gun frigate *Columbia* and the 18-gun sloop-of-war *Argus* building on the stocks; also the old condemned frigate *Boston* and all naval stores. During this most humiliating episode of the entire war, the British attacking force was from a fleet of twenty men-of-war lying in the Chesapeake under the command of Admiral Sir Alexander Cochrane and 2,600 troops under General Ross, and about 4,000 British soldiers and marines took part in the expedition. A few thousand American militia, or "citizen-soldiers," under General Wilder, "fled at almost the first fire" (or, in fact, "at the sight of rockets shot in the air"), and the only effective resistance was offered by about 500 sailors and marines under Commodore Barney, who had been forced to burn their gunboats and row galleys. In September

1814, the British made an attack on Baltimore, but were repelled. American seamen on this occasion rendered "invaluable service"; 80 men from the *Guerrière* manned Fort Covington, 50 men from a navy flotilla of small craft worked the 6-gun battery Babcock with effectiveness, and marine forces generally contributed much in repelling the enemy's assaults.

Baffled in the North at Lake Ontario, Lake Erie, and Lake Champlain, the British assembled strong military and naval forces for an attack on New Orleans, and on December 12, 1814, or shortly before the peace was signed at Ghent, the fleet under Admiral Cochrane appeared off Lake Bargne on the Gulf Coast. During that night, forty-two armed British launches and three gigs carrying 980 men attacked the American flotilla of gunboats and sloops, armed with only 23 guns and carrying 172 men; the British suffered severe losses, having 94 casualties (17 killed) to the Americans' 41 (6 killed). The British military and naval attempt to control the Mississippi outlet ended in a victory for the American forces under Gen. Andrew Jackson and Commodore Patterson at New Orleans on January 8, 1815, fifteen days after the peace treaty with Britain was signed in Europe; but the news of the battle and of the peace reached Washington almost together. The expedition to New Orleans was an overwhelming disaster to British arms, as the attacks were repulsed and the enemy was driven back to its ships, with the loss of some three thousand men all told, while the American loss did not exceed two hundred. Admiral Sir Edward Codrington wrote, "There never was a more complete failure."

War against Britain was declared by Congress on June 18, 1812, following President Madison's declaration that British blockade methods widely overstepped legal limits, that "British cruisers have also been in the practice of violating the rights and peace of our coasts; they hover over and harass our entering and departing commerce; . . . under pretended blockades without the presence of an adequate force [legally required] . . . our commerce has been plundered in every sea." Emphasis was also placed on the impressment into the British Navy on the high seas of men from the crews of American ships, which practice had aggravated ill feeling, particularly after the humiliating *Chesapeake-Leopard* episode of 1807 and the alert, retaliatory, and patriotic action of the *President* in May 1811. Expressing both a readiness for combat and a spirit far more gratifying to the national honor, the American frigate returned shot for shot with an aggressive 22-gun British sloop of war that started the action and silenced her after inflicting severe casualties on an arrogant foe, which had answered a hail at sea not with the usual and expected reply of identification but with shot.

As early as July 1812, all British ships crossing the Atlantic were required to sail in convoy. Britain, feeling that New England did not favor the war, was—with political intent—particularly lax in attempting to blockade its coast. In February 1813, the Delaware and the Chesapeake were put under strict blockade, and shortly thereafter it was extended to cover the chief ports from New York to the Mississippi. The Hartford Convention, to which the New England states sent delegates, proved that the war was very unpopular in the northeastern, or maritime, states. To encourage New England disunity (as well as to serve British supply needs), the American coast north of New York was kept fairly well open until May 1814, when the British blockade was extended to cover not only prime and secondary ports but also "creeks, rivers, inlets . . . and seacoasts" from the northeastern border of Maine to Mexico on the Gulf.

Until the spring of 1813, Britain did not take the war with the United States seriously, but the great success of American war vessels in single-ship engagements with Royal Navy vessels of similar type caused annoyance as well as chagrin and demanded action to uphold empire morale. For another year, however, Britain was considerably restrained by affairs in Europe and, with its troops fighting Napoleon on the Continent, could not get an army such as it desired into Canada, although it did seek to utilize its navy "to institute a rigorous commercial blockade of the United States" and exterminate American shipping—both mercantile and naval. With the downfall of Napoleon in the spring of 1814, Britain was able to spare considerable army reinforcements for the American theater and further strengthen the naval blockade of the entire coast. During the last year of the war (1814-1815), the increasingly effective British blockade of the United States, together with an American embargo, virtually put a stop to American sea-borne commerce, domestic and foreign (except as it was connived in by the British), and subsequently brought about excessive prices, restricted trade, and widespread economic depression. When coastwise trade became so hazardous that it was virtually abandoned, the conditions affecting transport caused a wide variation of prices in different parts of the country. Henry Adams, in HISTORY OF THE UNITED STATES, records that flour which sold for $4.50 per barrel in Richmond brought $12.00 in Boston, rice worth $3.00 per hundredweight in Carolina and Georgia ports sold for $12.00 in Philadelphia, sugar quoted at $9.00 per hundredweight at New Orleans sold in New York for $22.00 in August 1813 and had advanced to $40.00 at the end of the year. The practical suspension of deep-sea traffic naturally caused the prices of many commodities to soar. Coffee doubled in price, Hyson tea sold by the chest for $4.00 per pound, and salt rose to $5.00 per bushel; furthermore, specie reached a premium of 22 per cent. Privateers sending in cargo-laden prizes were kept posted by the managing owners on relative prices that goods would probably bring at various United States ports, and attempts were made to deliver captured vessels at ports where the cargoes were most greatly needed and would fetch the greatest prices, with a resultant higher profit to the privateers. Such attempts to make the maximum possible money with prizes resulted in the taking of great risks in gambling to get through the British blockade and in the retaking of many captured British vessels by the enemy. Toward the end of the war, with the larger privateers in commission, the practice developed of sinking prizes after the most valuable part of the cargo had been transferred to the privateer's hold; in this way, a larger percentage of the captured goods either reached a United States port or was destroyed and permanently lost, with the carrying vessels, to the enemy, and privateering profits were assured on a moderate basis.

The situation that developed in the United States as a result of the British blockade during the War of 1812 showed the economic effectiveness of sea power. Certain ports became virtually isolated for the greater part of the war; at times, practically the entire country was cut off from contact with the outside world, and the various ports were prevented from trading with each other. A good part of the hardships and humiliations suffered, it can be said, was because the United States, in its fight for freedom of the seas, had resorted to impotent paper manifestoes and preaching and had been stupidly negligent in the building of a navy to protect its coastal trade and command the respect of belligerents on the high seas. Most armed vessels of the American Navy and privateers were forced to remain in port for long periods of time or take great chances of capture if they attempted to elude the blockade. If such ships got to the open sea, they found that the British system of convoying merchant vessels under naval escort made it very difficult to take prizes. Capt. Dudley W. Knox has written:

> The stagnation of American commerce stimulated the employment of large numbers of merchant ships as privateers, and during the last six months of the war their operation constituted the principal American offensive on the sea. Many prizes were taken and the alarm created in British shipping circles increased insurance rates to double those prevailing during the Continental wars. This situation, together with the failure of the projected invasion of the United States through Lake Champlain, and post-war conditions in Europe, were the primary influences toward causing a British desire for peace, the treaty for which was signed at Ghent on December 24, 1814.

The British invasions of Michigan, Ohio, and New York, which, it has been said, "might have resulted in important territorial gains," failed by reason of American naval victories on the Lakes, and the British threat against the Mississippi and adjoining territory was nullified by American land forces and the United States Navy at New Orleans.

The issue of "free trade and sailors' rights," which, on the surface, caused the American declaration of war, gained no recognition in the treaty of peace. Britain did not openly abandon its position on any of the points that had led to discord and been blamed for the war; but the government and people of Britain and of the United States—and the world in general—knew that circumstances had changed and that the principles for which the United States had presumably fought were henceforth established political doctrine to which it would strictly adhere and for which it would fight if and when it should ever become necessary. It was said in England that "while not renouncing the right [of impressment], the British Government would no longer attempt to enforce it." We read: "The new naval power, whose ships of war had shown their ability to fight vessels of the Royal Navy on equal terms, was not likely to be troubled in the future with the question of impressment."

Much has been written of the relatively insignificant effect of naval actions during the War of 1812 upon the military strength of Britain and the final outcome of the war. Alden and Westcott, in their history THE UNITED STATES NAVY, write that the American frigate, sloop-of-war, and brig engagements in the war "were little more than pinpricks in their effect on British naval superiority, and, though vastly stimulating to American morale and self-esteem, they should be regarded as incidental to the more significant work of the American cruisers in commerce warfare." They continue: "In such operations, the major contribution was made by the big fleet of American privateers. Their work was of the utmost strategic value, and, though it has sometimes been underestimated in order to stress the importance of a regular navy, it is difficult to see how, in that day, it could have been accomplished by vessels under direct government control." Captain Knox has said:

> The American attack on British commerce, except for the privateering operations, was on too small a scale to influence the course of the war. The frigate victories, incidental to commerce raiding, had little military effect, but may be regarded as important political successes, in view of their elevation of the national *morale* notwithstanding the wide-spread economic distress caused by the overpowering British blockade. To America the War of 1812 brought about a much needed national unification.

Whereas the maritime exploits of American naval vessels and armed merchantmen may have had but relatively little effect in a military sense upon the Mistress of the Seas and the might of the British Empire, nevertheless, they did have a most pronounced effect psychologically upon the British people and caused great economic damage, which affected not only the merchants and the shipping interests but also the country at large. When peace was signed at Ghent on Christmas Eve, 1814, the British nation was most anxious to put an end to hostilities, and this was before they had heard of the disaster to their arms at New Orleans and of several reverses on the high seas. The war as it came to a close found the United States with a stronger navy, its privateers larger, faster, better fitted, and more aggressive, its army more efficient and successful, and its people more united and determined to carry on to victory. Of the two belligerent nations, the United States was suffering the most (because of the blockade), but Britain was the more war-weary and, in some respects, disillusioned; at any rate, the war ended with the British having a great deal of respect for American ships, commanders, and sailors and for American naval architects and shipbuilders.

The War of 1812, while perhaps not an altogether advantageous or necessary war, achieved for the United States real independence and won for it the respect of European nations and foreign peoples in general. Alden and Westcott rightly say, "In the war the navy won well-merited popularity and contributed not a little toward the stronger feeling of patriotism and national unity which followed the war." It was pre-eminently an American seamen's war and has been described by Marvin as "the second war for independence," undertaken for the well-being and protection of the American merchant marine. The British Liberals and a large percentage of the British public did not want it any more than did America, and a new ministry acted when it was too late to rescind the orders in council that were particularly repugnant to the United States. If President Jefferson had been less pro-French and less of an appeaser and if, upon assuming office in 1801, he had continued the building of a seagoing navy, been firm and forceful in his demands and a courageous, practical executive, there probably would have been no War of 1812. Following the administration of Adams, there was a period of deplorable weakness of government in international affairs, which encouraged rapacious and inhuman lawlessness on the Seven Seas. Madison's inheritance from his predecessor in office—which he himself had helped shape to a great degree—made war inevitable if the United States were to survive as a free people and a nation of honor, dignity, and power.

It is also of significance that whereas Congress declared war on Britain on June 18, 1812, Napoleon on June 20 (two days later) published the first bulletin of his Grand Army and prepared his calamitous march on Moscow. Marvin says, "Napoleon sought revenge upon the czar, one of whose crimes was the befriending of American merchantmen. Thus, the ships and sailors of the western republic bore a real and great though inadvertent part in the shattering of Napoleon's empire."

It often has been said that the War of 1812 did not result in the attaining by the United States of its stated objective, i.e., the freedom of the seas for its ships and men and the abandonment by the British of the practice of impressment. Technically, this is correct, for in the peace treaty signed at Ghent on December 24, 1814, Britain would not, in accordance with the demands of the United States, officially and in writing agree to renounce impressment. Britain had a vast degree of pride and egoistic belief in a queer sort of God-like infallibility associated with its "divine right" position as Mistress of the Seas. Britain could do no wrong and would never admit that it had erred or been compelled to reform or change its policy by force of arms; nevertheless, as Marvin says: "The vital truth is that this injustice [impressment] was shot to pieces by the broadsides of our few frigates and our many privateers." He continues, "Never afterward could the 'right' to steal sailors from the decks of American ships and compel them to serve an alien flag or fight their own flag be reasserted." As far as practical effects were concerned, America's second war for independence achieved its objective. It did much for the freedom of the seas and brought about abandonment by the British of the vicious practice of impressment, with its robbery and slavery of American sailors and humiliation and desecration of the Stars and Stripes.

It is well to note that the War of 1812, fought principally by American seamen in the interest of American ships and American sailors, was not a popular war on either side of the Atlantic. Evidently, it had been delayed too long, and proper preparations had not been made for it in the United States. Jefferson's two administrations (1801-1809) had caused untold harm, and his appeasement and "little navy" policies had weakened the country outrageously. The war was inevitable, for Britain was in open war against United States shipping when Madison came into office. The northern shipowners and merchants, however, distrusted Madison—who had been too long associated with Jefferson—and suspected ulterior motives and the playing of politics. The war that northern shipowners and sailors had to fight because of the lack of a national navy to protect the country and harass its enemies became known as "Mr. Madison's war" (it could, with an equal or a greater measure of fitness, have been called "Mr. Jefferson's war") and in the minds of many was placed in the same category of misfortune as "Mr. Jefferson's embargo."

James Madison (1751-1836), the fourth president of the United States (who served for two terms, 1809-1817), was a Virginian, his father being the owner of large estates in Orange County. Madison was secretary of state during the entire eight years of Jefferson's administrations, and it was Jefferson's expressed wish that Madison should succeed him in the presidency. It is no wonder, therefore, that because of their close relationship, there was difficulty in separating the parts of these two men in the notoriously weak foreign and commercial policies and the diplomacy of 1801-1809. Madison became known in the northeastern maritime states as a sort of "Jefferson's Man Friday." When Madison changed his commercial restrictions intended to coerce Britain and France, which had proven futile, and decided on war with Britain, this policy was very popular with the French wing of his party, but it did not "sit well" with the anti-Napoleon factions in the country and with those who had reason to know that with neither navy nor army and without any means of defense—not to mention attack—the United States was positively unprepared for war, a condition for which Jefferson, Madison, and their political associates and supporters were evidently entirely to blame. Madison and his cabinet proved unable to direct the war properly and cope efficiently with conditions and difficulties that grew out of it, and New England Federalists were led to suggest that Madison relinquish his high office and that an executive who was a practical realist guide the country out of the mess into which the coterie of Jefferson and Madison and their party had plunged it.

The North was inclined to the opinion that the Madison administration used the matter of impressment merely as a popular smoke screen, while the real purpose of a war with England was to secure additional territory for the Union to the west and northwest. New England knew that it would have to do most of the fighting in the war and pay most of the price (which it did), and it was not particularly enthusiastic, with no American navy, at the prospect of fighting a marine war with the Mistress of the Seas and the world's greatest naval power. As New England armed its merchantmen, it rightly blamed the South for the country's deplorably weak condition and asked, "Why should we lose our ships and commerce in order to acquire more land in the West?" Indeed, the feeling against the war, with the lack of preparations and planning, the precipitous declaration, and the opposition to the administration, ran so high that representatives of the northern states actually assembled in convention at Hartford, Conn., in 1815 and gravely discussed the possibility of secession from the Union by a group of northeastern states. Whenever secession was suggested in the many years prior to the Civil War, the threat came from the South (and was generally supported by the British), but in this one case it was the "struggling and weary North" that evidently, for a brief period, gave the thought some measure of consideration.

It was in a dark hour of the war—with the national government driven out of Washington by the British, an enemy army massed on the Lake Champlain front to invade the United States from the north, and the British gathering a naval and military force to take New Orleans and control the Mississippi—that the General Court of Massachusetts summoned a convention of the New England states at Hartford to confer not only on military defense against the British but also on political defense against an incompetent, prejudiced, and sectional administration. The Federalist press of Massachusetts (both seaboard and interior), Connecticut, and Rhode Island talked of secession of the New England states from the Union. Notwithstanding that the country was at war with Britain and had great cause to hate British imperialism, arrogance, assumed superiority, and arbitrary domination of world marine commerce, yet New Englanders at heart preferred England, which stood for law and order, to France, with its Jacobinism, terror, Napoleonism and dictatorship, which were sounding the death knell of popular government, of free peoples, and of democracy in Europe. It has been said that Federalism in New England, "sired by Neptune out of Puritanism, . . . was at once a political system and a point of view." In the summer and fall of 1814, maritime New England felt abandoned and its coast left defenseless by the Federal Government and the party in power, which controlled it with votes from the South and West, and secession sentiment had gone so far that even a five-starred, five-striped flag flew from a fort on the Merrimac. Timothy Pickering, of Massachusetts, who had recently been re-elected to Congress by an almost unanimous vote, proposed that the Hartford Convention, with delegates from Massachusetts, Connecticut, Rhode Island, New Hampshire, and Vermont (Maine was still part of Massachusetts), draft a new constitution "and present it as a loaded pistol at the original thirteen states with the alternative of an independent New England confederacy." In the words of Morison, a large part of the people of the maritime New England states felt in 1814 that "the Union ceased to be valuable when fresh-water politicians took bread from the mouths of honest seamen. Better go it alone, a North American Denmark, than stifle under the rule of scatterbrained demagogues." The Hartford Convention, which convened December 15, 1814, secretly deliberated, but wise, long-headed, and conservative counsel prevailed. Its report, made public on January 6, 1815 (thirteen days after the treaty which ended the war—without its knowledge—had been signed), showed that moderation and common sense had gained control. The administration and its policies were denounced, some threats were made, and constitutional amendments to limit the power of the executive and of Congress were suggested for the consideration of the states; but secession "was calmly considered and ruled out of practical politics." Five weeks later, all danger of a break in the solidarity of the thirteen states of the Union was averted when news arrived of the signing of the treaty of peace with Britain on Christmas Eve at Ghent.

When the terms of the peace treaty became known, one fact that caused great irritation and disgust in the maritime states and all seaboard communities of the country was that the Madison administration—which had presumably entered into the war in the interest of "free trade and sailors' rights" and then promptly announced that it would be a war to stop the British practice of impressment—had signed a treaty in which not a single word was said about impressment. The shipping interests of the country rightly asked: "If the war was fought to abolish the British practice of search and impressment and the British, being weary of the war and desiring peace, were anxious to make a peace treaty, why did not the negotiated treaty specifically cover Britain's willingness to abandon the practice?" The administration never satisfactorily answered this reasonable and all-important question, but the fact remains that, whether Britain agreed or did not agree at the peace conference to discontinue forcible impressment of Americans, the end of the war saw the abandonment of England's arrogant "divine right" claims to the persons and destinies of America's seamen sailing the Seven Seas.

Jefferson was a "little navy" or a "no seagoing navy" man. He considered fighting ships of the line and frigates as undemocratic weapons and argued against the national possession of any warships capable of aggression or, in plain words, capable of fighting on the high seas. George Washington had believed in a strong seagoing navy and so had John Adams, of Massachusetts, the second president of the United States (1797-1801), but when Thomas Jefferson became chief executive, the fleet of frigates and sloops of war that emerged with honor from the Undeclared War with France (which fleet was intended to be the nucleus of a real navy capable of protecting American commerce, i.e., American ships, seamen, and trade, and of fighting, if need be, for freedom in trading on the seas) was reduced to a skeleton. What ships of war Jefferson felt compelled to build in response to the nation's demand for defense were smooth- and shallow-water (one-gun) diminutive gunboats rather than seagoing ships of the line, the generally serviceable frigates of cruiser type, or the handy and well-armed seagoing brigs, schooners, and sloops of war. The preposterous economic defense flotilla, "which accorded more nearly than our stout thirty-eights and forty-fours with Jefferson's ideas of democratic simplicity," was derided by practical seamen, and as was expected these weak, light-draft, and unseaworthy "cheap" boats proved worthless when an attempt was made in the War of 1812 to put them to the defensive use for which they were designed, and a coast and merchant fleet protected by such miserable craft had no protection at all. Jefferson was responsible for the conditions that brought about the war and made hostilities inevitable, and he and his associates in power were also to blame for the fact that the United States entered the war with virtually no navy. Marvin says, "The cost of the [Jefferson] embargo would have built a fine fleet of line-of-battle ships and heavy frigates and waged a brilliant naval war. But, unfortunately, Jefferson and his party disliked line-of-battle ships, and the declaration of June 1812 found us with not one two-decked man-of-war afloat and only half a dozen serviceable frigates."

C. S. Forester refers to Jefferson's bigoted and fanatical opposition to a seagoing navy and to his building of small, useless coastal gunboats "in an attempt to buy security cheap." Writing of conditions during the latter part of the War of 1812 (which lasted some two and a half years), he says:

> If only they had decided ten years ago in Washington to build a dozen seventy-fours! Gouverneur Morris had advocated it a score of times, but Mr. Jefferson had decided against it. In this world, only a display of force could exact respect. A battle fleet would have prevented the coming of this war and would have saved the people of the United States a thousand times its cost. In normal times, a hundred ships a day cleared from American ports and a hundred entered them, but now two thousand American ships rotted at their moorings. . . . The United States was dying of a slow gangrene. Unemployed sailors crowded the water fronts of every seaport; for every hand in a privateer there were a hundred looking for work, and all because Mr. Jefferson had not thought himself justified in spending money and was obsessed with that quaint fear that a powerful navy would make an autocracy out of America.

The United States Navy in 1812 consisted of "a mere handful of ships," with "not one in the lot rating in the first class in size and power." The little David among the navies of the world went courageously to war with the giant Goliath, whose naval power in ships and guns was sixty times greater than that of the United States. Among the best sailors manning the British fleet were impressed American citizens who, as enforced workers and virtual "galley slaves," were compelled to fight against their own countrymen. The American Navy fought bravely against overwhelming odds, but from the start, as far as national forces were concerned, the conflict was hopeless and the outcome inevitable. The vessels of the United States Navy did their work valiantly and won practically all of the single-ship actions fairly fought between vessels of similar type and power. But America had no line-of-battle ships, and it could not possibly win the war by fleet actions. Finally, nearly all the fighting ships of the United States Navy were blockaded in American ports by overpowering British squadrons, and the last frigate that attempted to run the gauntlet (the *President*) was mobbed and taken by sheer force of numbers of enemy ships and guns after she had silenced the guns of one British frigate of equal power.

The lawlessness upon the ocean following the Revolution, the British practice of impressment, the "right of search" as enforced by France and England, and the confiscation of neutral ships with their cargoes and the imprisonment of their crews by frequent, changing orders and decrees of belligerent powers had caused American shipowners and operators to be resourceful—if they would survive—and "had set a tremendous premium upon long legs and lofty canvas," i. e., upon fine-lined models and tall spars with long yards and a sail spread "beyond all European precedent." During the War of 1812, fast American merchant ships were quickly converted into privateers, with the prime delay being the obtaining of suitable guns. The Federal Government proved that it could not acquire merchant ships, refit them as armed cruisers, and produce units comparable with privateers. The government put too heavy batteries on its armed, converted merchant ship cruisers and lessened their stability, handiness, and speed. Many government-owned armed merchantmen were pursued and captured by British frigates; but American privateers, with more reasonable batteries, less burdened by naval regulations and traditions, and with better commanders and officers (not politically appointed) and crews who were virtual partners in a hazardous business, "ran light," outsailed their more ponderous foes, and in a fight almost invariably defeated British ships of equal power.

The American Navy as well as Army was abominably handled by the Continental Government and by Congress during the War of the Revolution, and politics, sectionalism, favoritism, amazing ignorance, and the evils of "influence and graft" were evident in the government's conduct and management of the War of 1812. The fundamental idea of the privateer operating as "a government-commissioned pirate" may be repugnant to many patriotic Americans; nevertheless, it was such ships that jarred and shocked the arrogant British to an extent that led to the termination of war as per the treaty signed on Christmas Eve of 1814. Had it not been for the work of the American privateer (destructive to British commerce and morale), the record of America in the War of 1812 would have been a pitiful one, and the young republic of the western world would probably have been blockaded into submission.

There were some forty or fifty thousand American merchant seamen when the War of 1812 was declared—presumably in their behalf and in the interest of American shipowners and merchants. The American ideal of "freedom of the seas" meant freedom from impressment of sailors as well as freedom from confiscation of ships and cargoes and freedom of ocean trading. When the war commenced in June of 1812, there were ten or twelve times as many American sailors as the Federal Government could use to man its ships, and from that time to the end (in the spring of 1815) American seamen were clamoring for a chance to fight in the war declared for their benefit. They knew that in the ultimate the war was not Mr. Madison's war or the war of the South and West; they knew that it was their war and that, after some thirty-six years of humiliation and spineless appeasement, the nation was at last fighting for the cause of American sailors, American ships, and American trade. These sailors, moreover, preferred serving in privately owned ships to serving in nationally owned vessels. They preferred being commanded by a captain of the merchant marine rather than by a navy man and being partners of the owners and of the command of armed merchantmen rather than being subject to the arbitrary and less practical orders of the United States Navy and of a politically minded government. They demanded a certain measure of freedom in discipline, which was obtainable in the merchant marine and in privateering but not in the navy.

The "Little Contemptible Navy" of the United States

The War of 1812 with Britain, whereas fought with cause, was badly timed, and the pacifistic policies of President Thomas Jefferson (1801-1809) permitted of no fit preparations for building a navy to wage war with the Mistress of the Seas. However, a bill to provide much-needed new frigates was defeated by Congress only five months before the war broke out, and when President Madison sent his war message to Congress in June 1812, the United States Navy (ignoring a large number of harbor defense gunboats built by Jefferson after the Mediterranean pattern, which proved to be worthless, even for defense) consisted of seven frigates (*Constitution, President,* and *United States,* each rated as forty-fours; *Constellation, Congress,* and *Chesapeake,* each rated as thirty-eights; and the 32-gun *Essex*), two corvettes, and eight smaller craft (sloops of war, brigs, and schooners). A comparison of the strength of the British Navy, from available records of the fleet as reported in 1810 and the known complement in 1812, with that of the navy of the United States has been stated as follows:

	Naval	Total Number of		
	Tonnage	Vessels	Guns	Men
Britain	860,990	1,048	27,800	151,572
United States	15,300	17	442	3,500

Britain had 62 times as many naval ships measuring 56 times as much aggregate tonnage, mounting 63 times as many guns, and carrying over 43 times as many men as the United States. When the war commenced, the British had a naval force in American waters fully 7 times that of the entire United States Navy, and this force was greatly increased as the war advanced. In early 1812, Britain had 124 ships of the line, 116 frigates, and some 450 other ships of war in active service. Moreover, Britain had naval ports, with docks, arsenals, etc., in American waters, at Halifax, N.S., Bermuda, and in the West Indies fully equipped to repair and fit out ships for active warfare; whereas the United States was virtually destitute of such facilities and did not own even a dock or a navy yard worthy of the name. On December 3, 1811, the secretary of the navy (Paul Hamilton) wrote: "The United States does not own a dock. To repair our vessels we are compelled to heave them down—a process attended with great labor, considerable risk and loss of time; and upon a ship thus hove down the carpenters can not work without much inconvenience." It was a particularly laborious job to heave down a sizable warship, such as a frigate, as all the guns and heavy or movable weights had to be taken out of her, and a vessel was more or less strained in the process. On March 3, 1813, Congress appropriated $100,000 for the establishment of a naval dock yard—a wholly inadequate amount; but nothing was done about it, and during the War of 1812 the United States had no docking facilities for its vessels. It was not until May 2, 1815, that real action was taken in this important matter, and at that time the commissioner of the navy affirmed that "dry docks are absolutely necessary" and recommended that three, advantageously located and of a size sufficiently large to accommodate the largest class of ships, be constructed at once.

In the spring of 1812, maritime New England wanted no war with Britain while it was fighting Napoleon, the "Tyrant of France," who was "the arch-enemy of democratic republican government and of individual human freedom." The causes for war were many against both Britain and France, but why discriminate and favor the lesser of the two immediate evils? The seaboard communities said, "Let us build a navy to defend our ports and our commerce" before fighting Britain, and in the meanwhile "let us help Britain to whip the Corsican upstart that is trampling underfoot all the principles we fought for in our Revolutionary War and have been struggling to develop and make workable since." Maritime New England and the seaboard communities of the country agreed with the senator from Massachusetts that if the administration and the political party in power wanted to wage war on Britain, "let it be a real, effectual vigorous war," which required sizable, well-armed, and swift naval ships to defend the United States coast and shipping and carry the fight to the enemy. Nothing but a fleet of heavily armed and fast frigates would do this, and the United States, with practically no navy and no means of protecting its shores, shipping, and commerce and with no intention of immediately developing ways and means of overcoming its deplorable weakness and conspicuous vulnerability, was foolishly undertaking to make a suicidal war upon the Mistress of the Seas, which owned in numbers of vessels and power by far the greatest navy in the world. Congress, influenced by representatives from the South and West (known as the "War Hawks," with their minds on the conquest of Canada and the acquisition of "its entire fur trade"), voted to make war on Britain, but in true Jeffersonian fashion was purse-tight, declined to face reality, and made no appropriations to create a real navy or even to condition and properly operate the few vessels that formed the "little contemptible navy" of the United States. The War of 1812 was declared by landlubbers, but had to be fought on the ocean—and with very few ships—by American seamen, most of whom were not fully in sympathy with the war that the southern and western politicians said, most hypocritically, was being waged in their interest.

During the War of the Revolution, the American Navy was wiped out, and only privately owned armed merchant ships were on hand as a naval force when the war terminated. The War of 1812 was very different, for during the two and a half years of struggle from the declaration of war to the signing of the peace (which meant nearer three years of actual hostilities in some parts of the Seven Seas), the United States Navy increased to nearly threefold in number of fighting bottoms and was 3.3 times stronger in gun power. In the War of the Revolution, privateers were America's prime navy force; during the War of 1812, such armed merchantmen were a valuable fighting power, becoming of vast importance during the latter part, but they were not the vital and indispensable force that they had been throughout the War of the Revolution. Maclay says that the War of 1812 trained officers and men of the United States Navy "in the severe school of war" and developed them into "as fine a naval personnel as ever sailed the sea," as they "humiliated the haughtiest flag on the ocean with overwhelming disasters." The British naval authorities and commanders and the British public in general were contemptuous of the United States Navy when the war started in June 1812. The American Navy was referred to as merely a small handful of inferior "fir-built Yankee frigates flying a piece of striped bunting at their mast-heads" and officered by men without a semblance of training in real naval tradition and in handling ships of war either on individual missions or in squadrons. The British were made to change their tune, and their respect for American ships, gunnery, and fighting characteristics increased as the war advanced. At its termination, the proud and arrogant Mistress of the Seas flattered the United States by copying its ships and imitating its methods and strategy in conducting single-ship engagements. America introduced long 24-pounders as a main-deck battery of its frigates, an innovation ridiculed by the British, who called the vessels "terrible nondescripts"; but before the War of 1812 was over, Britain was not only building frigates carrying similar 24-pounders but also changing the armament of many of its best frigates to copy the American idea, and some of its old and famous line-of-battle ships (such as the *Culloden, Monarch, Thunderer,* and *Resolution*) were being "cut down and rebuilt as frigates to cope with the American frigates *Constitution, President;* and *United States.*" In a new 1826 edition of the British standard and authoritative work by James on the HISTORY OF THE BRITISH NAVY—a decidedly pro-British work—the editor says in the introduction: "It is but justice, in regard to America, to mention that England has benefited by her [America's] example, and that the large classes of frigates now employed in the British service are modeled after those of the United States."

The vast superiority in force (numbers of ships, guns, and men) of the British Royal Navy over the puny and "untried" navy of the United States caused the American Government in mid-1812 to "keep its few cruisers in the harbors to act merely on the defensive, fearing to risk them on the high seas." As Maclay, in his HISTORY OF THE NAVY, says:

> It is not strange that this "contemptible navy" became the butt of ridicule and of the "unmanly taunts" of English writers; and when Captain William Bainbridge and Captain Charles Stewart finally prevailed upon the government to grant our officers at least a trial on the high seas, it is not strange that the Navy Department thought it necessary for them to sail in squadrons lest by sailing separately they should fall an easy prey to the enemy. That subtile but powerful support called "public opinion," that popular backing which in all ages has infused a spirit of heroism into the breasts of the few so as to carry them over seemingly insurmountable difficulties, was somewhat chilled, if not entirely lacking in the case of our seamen, when the public and even the government distrusted their ability to cope with the redoubtable English frigate. It is hard to fight against confidence, and it is still harder to fight without confidence, so that between the contempt shown for them by the enemy and the want of confidence in their prowess on the part of their own countrymen, our officers found the real difficulties of the situation vastly increased.

The United States Navy, which seemed reluctant to go to sea against the British in the early days of the War of 1812, was fortunately not commanded and dominated—as was the Continental Navy in 1776—by a Capt. Esek Hopkins, an incompetent and super-cautious (or cowardly) commander in chief. Rather, the audacious and intrepid spirit of Capt. John Paul Jones was evident in many respects. Although the general public could not but remember the pathetic showing of the regular government-owned and controlled American Navy against the British and its ultimate extermination by the enemy in the War of the Revolution and was fully cognizant of the brilliant performance of the Royal Navy (particularly under Lord Nelson) in the wars against the French and Napoleon, yet the achievement of American naval commanders such as Capt. Thomas Truxton (1799-1800) against the French and Lieut. Andrew Sterett (1801), Commodore Edward Preble (1803-1804), and Lieut. (later Capt.) Stephen Decatur (1804) against the Barbary corsairs—handicapped as they were by the pacifistic and cautious appeasement administration of Jefferson—should have influenced Americans and made them know that in 1812 there were many brave, resourceful, and outstandingly competent men in the service prepared to handle the few ships of the U. S. Navy against any foe —even the powerful and cocky British—with honor and the probability of a good measure of success.

Certain competent Europeans, qualified to speak with authority on naval matters, forecast the coming power of the United States in the early 1800's. The British Lord Nelson was always impressed with the quality of both the American ships and their handling in the Mediterranean, and after critically watching the maneuvers of Captain Dale's U. S. squadron in 1801, he said, "There is in the handling of those transatlantic ships a nucleus of trouble for the navy of Great Britain." When Napoleon agreed in 1803 to sell Louisiana to the United States, he declared prophetically, "I have given to England a maritime rival that will sooner or later humble her pride." Hughes, in his HISTORY OF ENGLAND, referring to the operations of the few vessels of "the contemptible little navy" of the young republic in the War of 1812, says: "It is not to be denied that the American frigates were manoevred with such skill as would have done honour to any officers of the British Navy." The cause of the persistent disaster to the British in single-ship engagements with American vessels of similar type and force during the years 1812-1815 is generally credited to "an overweening confidence on the part of the British officers," who for some two decades had been waging "an easy naval warfare against France, whose discipline had been destroyed by the revolution," and against Spaniards who were often "terrified at the sound of guns." The British had been somewhat spoiled by their too easy sea victories over the French and Spaniards, and when they came to match strength with Americans, they may have been handicapped for a period by "an exaggerated notion of their own prowess." Half a dozen serious setbacks must have operated during the first half of the war to deflate their egoism and superiority complex. The feeling spread among the lesser biased officers of the Royal Navy that notwithstanding their original remarks of criticism, United States vessels were proving to be better than those of the British, and the much ridiculed American frigates were much better armed and faster (and even "handier and better fought," or managed) than those of the enemy. Before the end of the War of 1812, Britain was capitalizing its experiences and flattering the United States by attempting to copy its ships and many of the Yankee ways of fighting them.

Early Cruises of American Naval Vessels during the War— the Famous Chase of the CONSTITUTION

Capt. John Rodgers, in the U. S. 44-gun frigate *President,* which had left New York with the 44-gun frigate *United States,* the 36-gun frigate *Congress,* and the 18-gun sloops-of-war *Hornet* and *Argus,* fired the first shot of the war in an engagement with the 36-gun British frigate *Belvidera* during the evening of June 23, 1812, following which the English vessel, badly battered, escaped in the darkness by lightening herself of all possible weight. The

American squadron sailed to "within eighteen or twenty hours' sail of the English Channel," searching without success for a British convoy; on July 13 it steered southward to the Madeiras and returned home, reaching Boston on August 29 after being 69 days at sea. In all, the squadron took seven unimportant prizes and in general accomplished surprisingly little. Writing of this early cruise, planned to strike a strong blow at British commerce, Maclay says:

> The meagre results of this first essay of the navy on the high seas caused great disappointment throughout the country. The squadron had been fitted out with much care, was commanded by experienced officers and had the advantage of taking the enemy unawares, and it was confidently expected that a heavy blow would be struck at British commerce. It is not surprising then that the people, when the most formidable force which they could hope to get together during the war came back without having accomplished its purpose, were confirmed in their doubt as to the ability of their navy to meet the Mistress of the Seas.

The U.S. 32-gun frigate *Essex* (Capt. David Porter), which had been originally ordered to sail with Capt. John Rodgers' New York squadron, but which could not be got ready for sea in time, sailed twelve days later on her own and cruised to the south. The *Essex,* after a successful and eventful cruise of 60 days, arrived in the Delaware on September 7, having made nine prizes, secured over five hundred prisoners, and recaptured five American privateers and merchantmen. During this cruise, the *Essex* had fought and captured the British sloop-of-war *Alert* (Captain Laugharne) mounting 20 guns, during which engagement the American frigate did not "receive the slightest injury." She took a British brig with 197 soldiers aboard from a convoy and offered battle to the protecting frigate H.M.S. *Minera,* which as a prize was afterwards ransomed for $14,000.

The U. S. 44-gun frigate *Constitution* (Capt. Isaac Hull) sailed from the Chesapeake on July 12 (with a new crew, many of whom had "never been on an armed vessel before"), with orders to join the squadron under the command of Captain Rodgers. In harmony with the timorous policy of the government, Captain Hull was given positive instructions "not to encounter voluntarily a force superior to his own." The *Constitution* could not join the New York squadron of Captain Rodgers, which had sailed, but five days after leaving the Chesapeake, she sighted four sails about twelve miles off Barnegat and, before the day was over, found herself in company and close contact with a formidable British squadron consisting of the heavily armed 64-gun razee *Africa,* the two 38-gun frigates *Shannon* and *Guerrière,* the 36-gun frigate *Belvidera,* the 32-gun frigate *Aeolus,* and the 12-gun schooner *Nautilus* (which was just captured and was to be renamed the *Emulous*). This British squadron of six vessels (five big heavily armed ships and one schooner) mounted 220 guns, or five times the number of the U.S.S. *Constitution.* It was miraculous that the American frigate escaped capture or destruction, and this she did by clever strategy, resourcefulness, "indomitable perseverance," and skillful seamanship—plus the smiles of Dame Fortune. What was probably the most celebrated naval chase in history extended over three days and two nights (66½ hours), but the officers and crew of the American frigate proved worthy of her great commander, who outmaneuvered the enemy and escaped with no losses of men, small boats, equipment, etc., "save a few small spars and 2,335 gallons of water." The British were so sure of capturing the *Constitution* that the commodore of the squadron had selected the prize crew and officers "who were to have the honor of sailing the *Constitution* to Halifax."

Captain Broke of H.M.S. *Shannon* wrote in his journal on July 18, 1812: "At dawn, an American frigate within four miles of the squadron. Had a most fatiguing and anxious chase, both towing [by small boats] and kedging, etc., as opportunity offered. American frigate exchanged a few shots with *Belvidera,* carried near the enemy by a partial breeze. Cut our boats adrift, but all in vain; the *Constitution* sailed well and escaped." Captain Byron of H.M.S. *Belvidera* wrote, "Nothing can exceed my mortification from the extraordinary escape of the American frigate," and Doctor Brighton tells us, "The vexation of the whole British squadron may be inferred from Admiral King's account of the sharp recriminations among the sailors." Everybody in the British fleet seemed inclined to blame somebody else for the humiliation of permitting the United States frigate to escape, but it would seem that all the British commanders, whereas ardent and persistent, were but imitators in the realm of resourceful strategy and that it was the American commander who displayed all the initiative. The *Constitution* was the first to put her small boats overboard to tow the ship out of danger, and the British, after some delay, followed suit. Captain Hull, finding a suitable bottom by soundings, was the first to move his ship by kedging; this puzzled the Englishmen for some time, as they could not understand by what means a ship far out of sight of land, and in a calm, could be made to glide gradually but surely from their grasp. Captain Byron of the *Belvidera* is given the credit for discovering the secret, and he then followed the Yankee's example by "bending all his hawsers to one another and working two kedges at the same time." After breaking away, the *Constitution* ran the British squadron out of sight and, heading northeast, made for Boston and a supply of fresh water; while the British squadron separated, hoping by the scattering of the big frigates to effect the capture of the *Constitution* by single-ship action.

The CONSTITUTION *Captures and Destroys the* GUERRIÈRE

Captain Hull, fearing that "the timid policy of the Navy Department might detain him in port," took the required fresh water and supplies aboard without delay and sailed from Boston on August 2. It is well that he did so, for a few days after his departure, dispatches were received in that city instructing Captain Hull and the *Constitution* to "remain in port until further orders"; as it was, there was much criticism in Washington about Hull's "sailing without orders," and only the successful outcome of the cruise, it would seem, saved him from official censure. After skirting the Nova Scotia and southern Newfoundland coasts and making some unimportant captures, the U.S.S. *Constitution* headed south and, on August 19, sighted the British 38-gun frigate *Guerrière* (Capt. James Richard Dacres)—actually armed with 49 guns and carrying a crew of 263 men. After an engagement lasting forty minutes, the *Guerrière* was captured, with a loss of 21 killed and 57 wounded in the fight as against 8 killed and 6 wounded for the *Constitution.* The *Guerrière,* taken by the British from the French off Färöe Islands on July 19, 1806, was described as "of the largest class of frigates mounting fifty guns," and at the time of her loss to the British, the *Guerrière* was referred to by them as "as fine a frigate as we can boast of." Shortly before she struck her colors, her commander, Captain Dacres, had written that he would be happy to meet the U.S.S. *President* (Captain Rodgers' flagship) or "any other frigate of equal force to the *President,* off Sandy Hook, for the purpose of having a few minutes tête-à-tête." The hull of the *Constitution* was "scarcely touched" in the encounter with the British frigate, such injuries as she sustained being aloft and easy to repair; the *Guerrière,* on the other hand, was badly shattered. Captain Dacres testified later that about "thirty shot had taken effect" on the port side below the water line and that "the enemy found it impossible to refit her sufficiently to attempt carrying her into port." After all the prisoners had been transferred to the *Constitution,* the prize was blown up during the afternoon of August 21, and nine days later (August 30) the American frigate was back at Boston bedecked with flags to tell the story of the first frigate action of the war.

The word of a splendid naval victory stirred national exultation and was a palliative for the distressing coincident news of the surrender of Detroit to the British by Gen. William H. Hull, the naval commander's uncle. We read that the joy that followed "this first sunshine of victory" resulting from the destruction of the *Guerrière,* after "so many gloomy defeats" on land, "was unbounded," particularly as "the triumph came from a quarter where success was least expected." Congress voted a prize money award of $50,000 to the *Constitution's* officers and men. The effect of the news of the striking of the colors of a British frigate to an enemy ship, after Britain's two decades of brilliant naval victories, was "more than a surprise; it was shocking and humiliating." After learning of the loss of the *Guerrière,* the London TIMES said: "We know not any calamity of twenty times its amount that might have been attended with more serious consequences to the worsted party had it not been counterbalanced by a contemporaneous advantage of a much greater magnitude. As it was, the loss of the *Guerrière* spread a degree of gloom through the town which it was painful to observe." The greater "contemporaneous advantage" to British interests alluded to dealt with Wellington's military successes in Spain, and it is of interest to note that whereas the navy victory counterbalanced somewhat the depressing military setbacks and the loss of much territory, men, supplies, and prestige in the Great Lakes territory in America, Britain—primarily a naval power—found a palliative for the destruction of a first-class frigate by an American vessel of a relatively similar size in the success of its military operations on the Continent. Lord Nelson, its great naval hero, was dead, but the Duke of Wellington, the conqueror of Napoleon at Waterloo on June 18, 1815, was winning fame and popularity as a British general.

Another American Frigate, the UNITED STATES, *Takes the* MACEDONIAN

Captain Rodgers' squadron sailed from Boston on October 8, 1812, and soon separated. The 44-gun frigate *United States* (Capt. Stephen Decatur) headed for the African coast and on October 25, when near the Canary Islands, fought an engagement with the 38-gun British frigate *Macedonian* (Capt. John Garden), known as a fast sailer, with a highly competent and disciplined crew, and a claimed "match for any frigate afloat." It was said that the *Macedonian,* recently overhauled and "in the pink of condition," was "just such a ship as the English have achieved all their single-ship victories in" and a splendid example of the type of war vessel "the English prefer to all others." The action between the *United States* and the *Macedonian* lasted one and a half hours. The casualties reported on the American ship were 12 out of a crew of 478 and on the British vessel, 104 (36 killed; 68 wounded), which represented 35 per cent of her crew of 297 men. The *United States* sustained a surprisingly small amount of damage, but the *Macedonian* "was completely dismantled." After spending two weeks making necessary repairs to the captured prize, the vessels headed for the United States; they were at New London and Newport in early December and proceeded to New York via Long Island Sound.

The rejoicing occasioned by the news of this second naval victory materially raised the feeling of national pride throughout the country and gave the people more confidence in its small navy. The *Macedonian* was refitted and became a frigate of the United States. The news of this second naval defeat was at first discredited in Britain, and we read in the London TIMES of December 26, 1812:

There is a report that another English frigate, the *Macedonian,* has been captured by an American. We shall certainly be very backward in believing a second recurrence of such a national disgrace. . . . We have heard that the statement is discredited at the Admiralty. . . . Certainly there was a time when it would not have been believed that the American Navy could have appeared upon the high seas after a six months' war with England; much less that it could, within that period, have been twice victorious. *Sed tempora mutantur.*

Two days later (December 28), when news of the disaster to the British was confirmed, the London TIMES exclaimed: "O miserable advocates! Why, this renders the charge of mismanagement far heavier than before! In the name of God, what was done with this immense superiority of [British naval] force." In the next issue (December 29) appeared the following (this at the time of Napoleon's disastrous retreat from Moscow): "Oh what a charm is hereby dissolved! What hopes will be excited in the breasts of our enemies! The land spell of the French is broken and so is our sea spell." After the loss of the *Guerrière* and *Macedonian,* the British public and press, whereas maintaining that any British frigate should capture or destroy any American frigate and this with relative ease, commenced to ask what the admiralty was doing with the vast British fleet that was "at least sixty times stronger than the American Navy"—on paper. Where was this overpowering British naval force after six months of war? The London MORNING CHRONICLE of December 26, 1812, referring to the force of numbers alone, asked: "Is it not sickening to see that no experience has been sufficient to rouse our Admiralty to take such measurès that may protect the British flag from such disgrace?" Sir Charles Napier, writing from his home in Bermuda in 1813, expressed great respect for American naval prowess and concern for the future if Britain did not awaken and cope effectively with the threat to its domination of the seas. Referring to conditions in the Bermudas, Napier said:

> Two packets are quite due and we fear that they have been taken, for the Yankees swarm here, and when a frigate goes out to drive them off by force they take her! Yankees fight well and are gentlemen in their mode of warfare. Decatur [of the *United States*] refused Garden's sword [of the captured *Macedonian*], saying, "Sir, you have used it so well, I should be ashamed to take it from you." These Yankees, though so much abused, are really fine fellows.

The CONSTITUTION *Captures the* JAVA *in the Third Frigate Single-Ship Engagement of the War*

The result of the *Constitution's* escape from a powerful British squadron and her victory over the *Guerrière* in a brilliant single-ship action, together with the good record of the *Essex* on her July-September cruise, caused the Madison administration to modify its original overcautious policy and plan expeditions against British commerce in distant parts of the globe. Single-ship actions evidently continued to be viewed as too hazardous, however, for when ships were dispatched to the Indian Ocean to cruise against British commerce in the East Indies, the Navy Department ordered that a squadron be formed consisting of the frigate *Constitution* (Capt. William Bainbridge) as flagship, the frigate *Essex* (Capt. David Porter), and the 14-gun sloop-of-war *Hornet* (Master Commandant Lawrence). It is interesting to note that Captain Hull, who had commanded the *Constitution* on her two historic short cruises made in July and August and who had boldly taken the frigate to sea alone, was replaced by Captain Bainbridge. The change in command, it has been said, was "in the interest of discipline," but Capt. Isaac Hull's escape in the *Constitution* by "masterly seamanship and never-say-die spirit," followed by the strategy he displayed in the capture of the *Guerrière,* placed him "above any single-ship captain of the war [of 1812]."

The *Constitution* and the *Hornet* sailed from Boston October 26, 1812, and the *Essex* left the Delaware shortly thereafter, but they failed to contact each other at various rendezvous in the South Atlantic, so the *Essex* set out alone and, rounding Cape Horn, made her famous roving cruise in the Pacific. The *Constitution* and *Hornet* kept together for some time and crossed the Atlantic equator, following which the sloop of war was assigned to blockade duty off Bahia to watch the British 20-gun sloop *Bonne Citoyenne,* reputed to have a large amount of specie aboard. Sailing alone, the *Constitution* contacted the British 38-gun frigate *Java* (Capt. Henry Lambert) bound for India. The *Java,* formerly the 40-gun frigate *Renommée,* had been captured from the French off Madagascar in 1811, and when taken into the British Navy and renamed *Java,* she was described as a "new frigate of the first class." When sighted by the *Constitution,* the *Java* was in company with an American merchant ship, the *William,* recently taken as a prize. The action between the *Constitution* and the *Java* was fought on December 29, 1812, about thirty miles from the South American coast and about thirteen degrees south of the equator. After a scant two hours of actual fighting (and three and a half hours after the first shot was fired), the British struck their colors and surrendered, having sustained casualties of 161 (60 killed; 101 wounded) out of a crew of 426 men; the *Constitution* had only 34 casualties—9 killed and 25 wounded. The British reported that when the engagement ended, the *Java* "was a perfect wreck, with only her mainmast standing, and that tottering, her main yard gone at the slings, and the muzzles of her guns dipping in the water from the heavy rolling of the ship in consequence of her dismasted state." As the vessel could not be put in shape to take her even to the nearby port of Bahia, she was blown up. The *Constitution* emerged from the fray with what was said to be "only trifling injuries to her hull" and all her spars in place with the exception of her main-topsail yard, although some of her rigging was "considerably cut up." Captain Lambert of the *Java* was landed at Bahia badly wounded, and he shortly afterwards died. Captain Bainbridge also landed his prisoners at Bahia, and as he deemed it advisable under the conditions existing to postpone the contemplated cruise to the East Indies, he returned with the *Constitution* to Boston, arriving there February 27, 1813, where he received an enthusiastic welcome. For the second time since the war began, Congress voted $50,000 as prize money to the officers and crew of that vessel.

Captain Bainbridge, who had become known in navy circles as "unlucky," fully retrieved by his well-fought action with the *Java* the series of misfortunes that he had previously experienced. His ship, the *Retaliation,* in late 1798 had struck to superior force during the Undeclared War with France. In 1800, when in command of the *George Washington,* he had been forced by the dey of Algiers to carry tribute to Constantinople, and on October 31, 1803, he ran the frigate *Philadelphia* on an uncharted reef off Tripoli and surrendered to the enemy corsairs. The *Constitution* (*"Old Ironsides"*) redeemed his fame, for Bainbridge had manipulated his command in masterly fashion and had won an important naval victory by sheer merit and the proven superiority of both the ship under him and the handling of her in a hard fought engagement.

Popular enthusiasm for the navy developed in the United States as a result of the three frigate victories of the last half of 1812, and a hitherto reluctant Congress voted to build not only six more frigates and six more sloops of war but also four ships of the line. In Britain, however, there was corresponding gloom and free criticism of both navy management and the spirit of careless overconfidence which, it was claimed, permeated the service. A contemporary English historian refers to the "neglect to exercise the ships' companies at the guns which prevailed over two-thirds of the British Navy." The demonstrated superiority of the American vessels at sea, ship for ship, with a national denunciation of British policies, stung the once complacent admiralty into vigorous action and the adoption of drastic blockading measures by powerful squadrons, rather than individual ships, along the entire American coast.

News of the loss of the *Java* reached London on March 19, 1813, and in the issue of the London Times of the 20th we read:

The public will learn with sentiments which we shall not presume to anticipate that a third British frigate has struck to an American. . . . This is an occurrence that calls for serious reflection—this and the fact stated in our paper of yesterday, that Lloyd's List contains notices of upward of five hundred British vessels captured in seven months by the Americans. Five hundred merchantmen and three frigates! Can these statements be true? And can the English people hear them unmoved? Anyone who had predicted such a result of an American war this time last year would have been treated as a madman or a traitor. He would have been told if his opponents had condescended to argue with him, that long ere seven months had elapsed the American flag would have been swept from the seas, the contemptible navy of the United States annihilated, and their marine arsenals rendered a heap of ruins. Yet down to this moment not a single American frigate has struck her flag.

The U. S. Schooner ENTERPRISE *Outfights and Takes the British Brig* BOXER

During the early part of the war, the little 12-gun U. S. schooner *Enterprise,* famous for exploits against the Barbary pirates, patrolled the coast of Maine to protect the coastwise trade from the depredations of British privateers sailing from Canadian ports. Under the command of Lieutenant Burrows, the *Enterprise* made contact on September 5 with the 14-gun British brig *Boxer* (Captain Blythe), which had been specially fitted out and manned at Halifax to "search for, capture or destroy the *Enterprise."* The two vessels fought for forty minutes, and at the first broadsides Lieutenant Burrows was mortally wounded, whereas Captain Blythe was killed. The American commander lived long enough to see the triumph of the Stars and Stripes, and when the British captain's sword was placed in his hands, he exclaimed a few minutes before he passed away, "I am satisfied; I die content."

It was said by contemporary authorities that no two vessels ever met in a single-ship combat that were more evenly matched than the *Enterprise* and the *Boxer;* each carried crews of about 100 men, and each had about 120 lbs. of metal to the broadside. The casualties on the *Enterprise* were 12 (2 killed; 10 wounded); whereas the *Boxer's* loss was 21 (4 killed; 17 wounded). A British court-martial, convened to try the surviving officers of the *Boxer* for the loss of their ship, attributed the victory of the American vessel to a "greater degree of skill in the direction of her fire." The difference in the damage to each of the two vessels as a result of the engagement was said by experts to to be "extraordinary." They were brought into Portland, Maine, on September 7, and moored at the end of Union Wharf. Captain Hull, after a survey of the two vessels, wrote:

> I was astonished to see the difference of injury sustained in the action. The *Enterprise* has but one 18-pound shot in her hull, and one in her mainmast; her sails are much cut with grapeshot and there are a great number of grape lodged in her sides, but no injury done by them. The *Boxer* has eighteen or twenty 18-pound shot in her hull, most of them at the water's edge; several stands of 18-pound grape stick in her sides, and such a quantity of small grape that I did not undertake to count them. Her masts and spars are literally cut to pieces, several of the guns dismounted and unfit for service; her topgallant forecastle nearly taken off by the shot, her boats cut to pieces and her quarters injured in proportion. To give you an idea of the quantity of shot about her, I inform you that I counted in her mainmast alone three 18-pound-shot holes, eighteen large grapeshot holes, sixteen musket-shot holes and a large number of smaller shot holes without counting above the catharpins.

The London TIMES of October 22, 1813, said of this single-ship naval action: "But what we regret to perceive stated, and trust will be found much exaggerated is that the *Boxer* was literally cut to pieces in sails, rigging, spars and hull; whilst the *Enterprise* (her antagonist) was in a situation to commence a similar action immediately afterward. The fact seems to be but too clearly established that the Americans have some superior mode of firing; and we can not be too anxiously employed in discerning to what circumstances that superiority is owing."

The Sloop-of-War WASP *Captures the* FROLIC *in the "Outstanding Naval Victory of the War"*

On October 13, 1812, the U. S. 18-gun sloop-of-war *Wasp* (Mast. Comdt. Jacob Jones) sailed from the Delaware to harass British merchantmen engaged in the West Indian trade. After being injured in a heavy gale, during which she lost her main yard, jib boom, head gear, and two men, the *Wasp,* on October 18, contacted in the North Atlantic off the Bermudas five British merchant vessels (some of them heavily armed, mounting 16 to 18 guns) being convoyed by the 22-gun brig-of-war *Frolic* (Captain Whinyates), bound from Honduras to England. After an engagement of forty-three minutes between the American and British naval vessels, the British brig was taken by boarding and struck her colors only after—according to Captain Whinyates' report—"every individual officer" was "killed or wounded, there being not twenty per cent remaining unhurt." If this statement is correct, the casualties were around 88, as the *Frolic* had a crew of 110 men; but the British historian later states that 15 men were killed and 47 wounded (some mortally), which makes a total of 62 casualties, or over 56 per cent of the crew. The American loss, out of a crew of 138 men, was 5 killed and 5 wounded, the total casualties being 7 per cent of the complement. The British vessel was more heavily armed, and her 22 guns shot 292 lbs. of metal to the broadside as against the 249 lbs. for the 18 guns of the American sloop. The *Frolic* was literally "cut to pieces." Maclay says: "It is doubtful if there is another instance in naval history where such a large proportion of a crew fell by cannon fire alone, and this is the more remarkable when we consider that a heavy sea was running, which in such small craft made accurate cannon fire extremely difficult."

The *Wasp* was deprived of the benefit of her brilliant single-ship action with a vessel of superior theoretical power, for while she was repairing the damage to her prize, the British 74-gun ship-of-the-line *Poictiers* (Captain Beresford) appeared on the scene and took both the *Wasp* and the *Frolic* into Bermuda. The U. S. Congress, however, voted $25,000 prize money to the officers and seamen of the *Wasp,* and the capture of the *Frolic* was acclaimed as one of the outstanding naval victories of the war. The striking of the colors of the *Frolic* to the more lightly armed American sloop *Wasp,* coming as it did in October 1812, one week before the U. S. frigate *United States* captured and took the British frigate *Macedonian* as a prize, added to the despondency in Britain when news of the loss of the *Macedonian* was also received by a public that had been prepared to hear only of naval victories.

The Sloop-of-War HORNET *Destroys the* PEACOCK *and Later the* PENGUIN

The United States sloops of war as well as its frigates proved their superiority in battle to British ships of similar type and power. The *Hornet* continued to blockade the *Bonne Citoyenne* at Bahia, whose boastful commander (Captain Green) not only refused to come out and fight but also sent word by a Portuguese fishing smack to Rio de Janeiro urging the powerful British 74-gun ship-of-the-line *Montagu* to come to Bahia and release him from his humiliating position. Upon the appearance of the British battleship on the scene, the little

20-gun American sloop (Mast. Comdt. James Lawrence) changed her cruising ground. On February 14, 1813, the 10-gun armed British merchant ship *Resolution* (laden with coffee and tea and with $23,000 in specie aboard) was captured, and on February 24, off British Guiana, the *Hornet* fought an historic single-ship action with the British 20-gun sloop-of-war *Peacock* (Captain Peake). After only eleven minutes of vigorous fighting, the Britisher surrendered and was so badly shattered that, although every effort was made to save her, she quickly sank. During this engagement, the *Hornet*, with a crew of 142 men, had 5 casualties (1 killed; 4 wounded), and the *Peacock,* with 130 men aboard, had 5 killed and 33 wounded—a total of 38. The *Hornet* reached Martha's Vineyard on March 19, 1813, having captured a ship, a brig, and two schooners on her cruise, and proceeded from there down the Sound via Hell Gate to New York. A British comment on the action reads, "The firing of the *Hornet* was admirable, and proved that her men . . . had been taught what use to make of their guns." The British were astounded that a well-built and armed vessel of the Royal Navy could be demolished in "a few minutes" by a vessel of similar type, size, and power. A Halifax, N. S., paper said: "A vessel moored for the purpose of experiment could not have been sunk sooner. It will not do for our vessels to fight theirs single-handed. The Americans are a dead nip." The engagement between the 20-gun U.S.S. *Hornet* and the 20-gun H.M.S. *Peacock* has been described authoritatively as "the most brilliant sloop action" of the War of 1812.

The American sloop *Hornet* further distinguished herself in a similar manner when on March 23, 1815, under the command of Captain Biddle, she fought the British sloop-of-war *Penguin* (Captain Dickenson) off the island of Tristan da Cunha (west of the Cape of Good Hope) in what was the last real naval action of the war. (This excludes from consideration the capture of the British 14-gun cruiser *Nautilus* by the U. S. 20-gun sloop-of-war *Peacock* in the Straits of Sunda, near Fort Anjiers, on June 30, which was over six months after peace had been declared; the British casualties in this brief fight were 14 and the American none.) The *Hornet,* with a crew of 132 men and 20 guns firing 279 lbs. weight of metal, was of almost exactly the same theoretical power as the *Penguin,* which had a crew of 128 men and whose 19 guns fired 274 lbs. of metal to the broadside. The action between the two sloops lasted twenty-two minutes, during which the Americans suffered 12 casualties (1 killed and 11 wounded) and the British 38 (10 killed and 28 wounded). After the engagement, the *Penguin* "was a perfect wreck" and had to be scuttled; whereas Captain Biddle reported that the *Hornet* "did not receive a single round shot in her hull or any material wound in her spars." He continued: "The rigging and sails were very much cut; but, having bent a new suit of sails and knotted and secured our rigging, we are now completely ready in all respects for any service."

The British Frigate SHANNON *Captures the Unlucky U. S. Frigate* CHESAPEAKE

After winning six consecutive and signal victories over the Mistress of the Seas in historic single-ship engagements, it was but natural that the "puny" American Navy, fighting with a rare spirit, should become overconfident, negligent in the consideration of certain essentials, and at last suffer a setback. It has been said that "the national pride was unduly puffed up, and it needed but a single defeat to prick the bubble of our vanity." It was the unlucky U.S. frigate *Chesapeake* (36 guns) under a new and brave but reckless commander, with a large part of the crew members mutinous and foreign and most all of them strange to the ship, that struck her colors to the British frigate *Shannon* (38 guns), under the command of Capt. Philip Bowes Vere Broke, R.N., on the evening of June 1, 1813, after a short but extremely bloody fight. The actual engagement, said to have lasted only fifteen minutes, accounted for a total of 229 casualties, which, according to Admiral Gleaves, was only 45 less than the combined Spanish and British losses at Cape St. Vincent, where forty-two ships were engaged.

Mast. Comdt. James Lawrence, who was in command of the 18-gun U. S. sloop-of-war *Hornet* when she defeated the 20-gun British brig-of-war *Peacock* off British Guiana on February 24, 1813, and as a result received a captain's commission, was appointed to the command of the 36-gun U. S. frigate *Chesapeake,* then being made ready for sea at Boston. Since her ignominious surrender to the British frigate *Leopard* in June 1807, when a brand new ship under the command of Capt. James Barron, with the firing of only a single shot in defense of the honor and dignity of the American flag, the *Chesapeake* had been stigmatized as an unfortunate and unsavory vessel, and "this reputation had been strangely borne out in her subsequent career." On a cruise from Boston and return lasting from December 17, 1812, to April 18, 1813 (122 days), under orders to seek, capture, or destroy enemy shipping, the *Chesapeake* sailed six consecutive weeks without sighting a British vessel and during the entire cruise took only five merchantmen and recaptured an American vessel with a British prize crew aboard. Entering Boston Harbor with a despondent crew, the *Chesapeake* lost a topmast, and the men on it were drowned. This accident was regarded by seafaring men as an inauspicious omen for the next voyage and, coupled with the long, unprofitable four-month cruise just ending, added to the vessel's reputation for bad luck. Maclay, commenting on the psychological conditions affecting in practical fashion the getting together of a crew for the *Chesapeake* in May 1813, says that "a sailor's unaffected dread of such a ship made it exceedingly difficult to enlist another crew," and he adds:

In the estimation of all thorough seamen such bad records were of the greatest importance. The repute of the vessel exercised a powerful influence not only in enlisting a crew but on its efficiency. The *Constitution,* the *Constellation* and the *Enterprise* were the lucky vessels of the service, while the *Chesapeake* and the *President* were the unlucky ones. These vessels went into the War of 1812 with such characters, and they were strangely borne out by the naval operations of 1812-15. Besides this unfortunate reputation, the *Chesapeake* was deservedly styled by Washington Irving "the worst frigate of our navy" and immediately on her return to Boston from her last cruise the men made haste to leave her, while her officers found employment in other vessels. . . . Such being the condition of the *Chesapeake* after her last unsuccessful cruise, it is not surprising that Captain Lawrence [even though he had only just received his commission as a captain in the U. S. Navy] felt "extreme reluctance" in obeying his orders. He even requested to be continued in command of the little *Hornet* rather than accept promotion to such a frigate.

Captain Lawrence wrote four letters in rapid succession to the secretary of the navy asking for a change of orders and urging that he be relieved of the necessity of commanding the *Chesapeake.* Prior to May 27, he was in hopes "of being relieved by Captain Stewart"; yet five days later (on June 1, 1813) he took the frigate out of Boston Harbor to sea and at 5:45 p.m. of that same day was engaged in battle with the British frigate *Shannon.* At the first broadside, Captain Lawrence was severely wounded in the leg and soon afterwards was mortally wounded and carried below. He had had no experience in commanding frigates, for his successes had been with much smaller craft. He was a brave man and a splendid naval officer, being as able as he was courageous, but he did not know his ship, officers, and crew (340 men as against 140 on the *Hornet*), and, moreover, they did not know him; yet immediately upon leaving the harbor, without even the benefit of a few weeks of a shake-down cruise, he took a ship with a bad name, inexperienced officers, and a crew showing signs of dissatisfaction and mutiny—thoroughly disorganized and unacquainted with its surroundings—out to sea to meet in mortal combat the best fighting machine in the British Navy, with the best-disciplined crew of men who had been in the ship for years. Lawrence was fully aware of "the disorderly condition of his ship," and he should have postponed a meeting with as powerful a foe as the *Shannon* until he "could accustom his men to act together and to perform the ordinary duties of seamanship and gunnery" and, moreover, get acquainted with their vessel. The naval officer who accompanied Captain Lawrence to the wharf to board the *Chesapeake* urged him to be cautious and warned him of the risk of an engagement under the conditions prevailing. The first officer of the ship (Lieut. Octavius Augustus Page) was in bed ashore with lung fever (he died three days later), and the third lieutenant (Augustus C. Ludlow), hurriedly promoted to a position of great responsibility, was a brave man but inexperienced and strange in his job and a mere youngster "scarcely 21 years of age." The second lieutenant (Thompson) and acting lieutenants (Nicholson and Pearce) were all absent on sick leave. George Budd, said to have been "the only commissioned sea officer of experience in the ship," was made second lieutenant and the positions of third and fourth lieutenants were hurriedly filled by young midshipmen (Cox and Ballard). Later Cox proved his lack of knowledge of the personnel of the ship when, following the boarding by the British, he led some American seamen in a fight against members of the defending *Chesapeake's* crew. Every officer on the American frigate was killed or wounded so early in the action that there was no one in authority left to throw the signal-book overboard when the enemy boarded; therefore, the British came into possession of all the private American signals. There was also no surviving officer formally to strike the colors and surrender the ship to the British.

No ship should have put to sea to fight an action with the enemy the day following a crew's last night ashore before what was expected to be a long cruise. Historians tell us that "a large proportion of the sailors, in keeping with their time-honored custom of getting intoxicated before leaving port on an extended voyage, were lying round the ship in a drunken stupor from which even the excitement and turmoil of battle did not arouse them," and the British reported that many of the crew of the *Chesapeake,* when she was captured, "were drunk and riotous." The crew was evidently a motley gang of Americans and foreigners, of loyal seamen and mutineers, of experienced seamen and "raw hands," as well as of sober men and "drunks." Of the 146 casualties on the American frigate (which represented 43 per cent of her entire crew), it is significant and creditably said that "the loss was chiefly confined to the American portion of the crew." We are told that of the large number of foreigners aboard, many of those who were sober enough were seen "skulking about the ship seeking to escape their own officers as well as the enemy." When all hands were called to resist boarding, Second Lieutenant Budd affirmed that the foreigners and raw hands held back, while the Portuguese boatswain's mate, a leader of the mutineers and discontents aboard, "removed the gratings of the berth deck, shouting, 'So much for not paying men prize money,'" and "ran below followed by many of the other malcontents."

It is amazing that Captain Lawrence ever took the *Chesapeake* into an action that he had it in his power to postpone until his ship and her crew were ready and prepared to give a good account of themselves. Scarcely had the *Chesapeake* got to sea when the mutinous attitude of the men became conspicuously evident. After hoisting a flag bearing the motto, "Free Trade and Sailors' Rights" (which meant freedom on the high seas from British search —with delays or confiscation of ships and merchandise—and from the impressment of American seamen), Lawrence gave the men a short talk, during which he was interrupted by loud murmurings of discontent. Demands were made in an insolent manner by some members of the crew, who claimed that they wanted the prize money owing them before they risked their lives in another fight. Several hours before Lawrence deliberately moved to commence an action, he knew that he had "an enemy in a part of his crew" as well as "a powerful foe awaiting him in the offing"; he also well knew that his ship was inadequately officered and badly manned and that even if the crew had been loyal, it was in no physical condition to fight. We are told that "the haughty Lawrence" sailed to defeat and death and "bravely faced his doom . . . filled with gloomy forebodings by the dastardly conduct of his crew" and "deeply wounded by the treachery of the men on whom he relied." Maclay says that Lawrence "endeavored to infuse his own indomitable courage into the drooping spirits around him; but . . . it must have been apparent that he did not possess the confidence which he so manfully attempted to inspire." It would seem that Captain Lawrence deliberately forced an action with a powerful enemy when he well knew that the enemy was fully prepared and when his own ship and crew were in a disorganized and chaotic condition. To seek a fight under these conditions was not an exhibition of courage; it was foolhardiness.

Captain Broke had been in command of the British frigate *Shannon* for six years eight and a half months, and he knew his ship thoroughly. In Allen's BATTLES OF THE BRITISH NAVY, we read, "The crew of the *Shannon* had been five years together commanded by the same captain." Historian James tells us that the crew of the *Shannon* had one and a half hours of gunnery practice in the morning and one and a half hours of drilling in the use of the "broadsword, pike, musket, etc." in the afternoon of every day, weather permitting, and Captain Broke, with an able staff of experienced officers, had a unique, well-disciplined, and competent crew to fight "a rabble" on the *Chesapeake*, whose men did not even have uniforms to distinguish them and whose officers and crew were unknown to each other and had never engaged in any drills preparatory to the fight.

When the *Chesapeake* and the *Shannon* came together and Captain Lawrence gave the order to assemble boarders, the bugler could not be found, and as Lawrence fell mortally wounded, it was Captain Broke who led his ready, organized force onto the quarter-deck of the *Chesapeake*. The only American officer on deck was Acting First Lieutenant Ludlow, who was badly wounded by grape and musketry and weak from loss of blood. From the cockpit below, the dying Lawrence urged his men to fight: "Keep the guns going"; "Fight her till she strikes or sinks." When told that the British had "carried the spar deck," Lawrence exclaimed, "Then the officers of the deck [there were none] haven't toed the mark. The *Shannon* was whipped when I left the deck." The brave man's last words were, "Don't give up the ship." She was not "given up"; she was taken—and this by a better-organized and disciplined force of men fighting courageously as a homogeneous unit of their country. Some "debunkers," during comparatively recent years, have asserted that Lawrence's historic words, "Don't give up the ship," are a myth; but survivors of the battle—both American and British—vouched for the accuracy of the exhortation, and one of the *Chesapeake's* complement testified that as the ships proceeded to Halifax, with both Captain Lawrence and Captain Broke delirious from their wounds, the only words Lawrence was heard to mumble were, "Don't give up the ship." Evidently, the thought was firmly impressed on his mind when he lost consciousness.

The 36-gun U. S. frigate *Chesapeake* mounted, all told, 49 guns with a weight of 540 lbs. to the broadside; while the 38-gun British frigate *Shannon* mounted 52 guns firing a weight of metal of 547 lbs. to the broadside. The cannonading lasted only eleven minutes, and the entire net time of the action was stated as fifteen minutes. Of a crew of 340, the *Chesapeake* had 146 casualties (47 killed; 99 wounded), and the *Shannon*, with a complement of 330, suffered the loss of 83 men (24 killed; 59 wounded). That the *Chesapeake* was punished much more than the *Shannon* in the cannonading is indicated by the following British record of the number of shots that took effect on each of the two vessels:

Frigate	32-pound Shot	18-pound Shot	Lighter and Bar Shot	Grapeshot	Total
CHESAPEAKE	25	29	2	306	362
SHANNON	13	12	14	119	158

The British won by superior training, organization, and discipline and were favored only by the good fortune that inevitably is associated with fitness and preparedness. It was a humiliating defeat to the Americans, whose previous string of six consecutive and overwhelming defeats of the British in single-ship actions between vessels of relatively similar type and power had probably influenced Captain Lawrence in his recklessness and deplorable overconfidence. The result of the action filled the United States "with profound gloom," while the British "gave vent to extravagant demonstrations of joy, simply because an English frigate had captured an American of the same force." On July 8, 1813, the announcement in the British Parliament of the capture of the *Chesapeake* by the *Shannon* of the Royal Navy brought forth the "loudest and most cordial acclamation from every part of the house." The war that the British had originally stated would be over in a few months, with the annihilation of the United States naval forces and the destruction of its merchant marine, had lasted over a year, and this, after a string of six straight defeats, was the first naval victory that the British had had an opportunity to celebrate—so they made the most of it.

M. De La Gravière, in GUERRES MARITIMES, comments on the naval action between the frigates as follows:

> Captain Broke had commanded the *Shannon* for nearly seven years; Captain Lawrence had commanded the *Chesapeake* for but a few days. The *Shannon* had cruised for eighteen months on the coast of America; the *Chesapeake* was newly [a few hours] out of harbor. The *Shannon* had a crew long accustomed to habits of strict obedience; the *Chesapeake* was manned by men who had just been engaged in mutiny. The Americans were wrong to accuse Fortune on this occasion. Fortune was not fickle, she was merely logical. The *Shannon* captured the *Chesapeake* on June 1, 1813, but on September 14, 1806, when he took command of his frigate, Captain Broke had begun to prepare the glorious termination of the bloody affair.

A few years after the battle, in a discussion at which the Duke of Wellington was present, a British naval officer eulogized Broke on his magnificent victory and spoke deprecatingly of the American naval victories during the War of 1812. Admiral Sir Isaac Coffin listened to the remarks with growing impatience and finally expressed the views of the majority of naval authorities in Europe as well as America when he said: "It was a lucky thing for Broke that he fell in with the unprepared *Chesapeake* and not with Hull and the *Constitution*. If he had, no tower guns would have been heard celebrating the *Shannon's* victory."

Captain Lawrence was dead when the *Shannon* and *Chesapeake* reached Halifax, N. S., and Captain Broke lay delirious and unconscious in his cabin. He never fully recovered from his wounds and was permanently incapacitated for further naval service.

The fate of the *Chesapeake* brought to mind the jocular prophecy of a Negro bidding a friend good-bye on the wharf at Boston when he was stepping into a boat to board the frigate: "Good-bye Sam. You's going to Halifax before you comes back to Bostaing." The very thought of the Negro's words enraged the people around him, and he narrowly escaped being mobbed.

Throughout and for more than a decade before the War of 1812, maritime New England had denounced the administration's policy of a pacifistic navy—described as nonaggressive, democratic, and cheap. Seafaring people and those directly and indirectly interested in foreign trade demanded the building of a real navy with ships of the line, frigates, and sloops of war (brig- and schooner-rigged) to protect American commerce on the Seven Seas. The Federalist ballot of 1814 for the election of governor and senators for the State of Massachusetts has more than half the sheet occupied with a picture of a battleship and a party slogan, "Ships of the Line—No Shaving Mills," referring to the national need of powerful seagoing naval vessels and denouncing the impractical and proven-to-be-useless Jeffersonian gunboats, which were contemptuously referred to as "shaving mills" and which had been heralded by landlubbers of the South and West as nonimperialistic, thoroughly democratic, usable only in defense, and inexpensive to build, maintain, and operate. The Massachusetts Federalist ballot ship of 1814 carried on her rail amidships, above three tiers of broadside guns, Lawrence's immortal saying (slightly modified), "We will not give up the ship"; yet the temper of the people in antagonism toward the war with Britain in 1812-1814 was such that when, after the capture of the *Peacock,* Josiah Quincy moved in the Massachusetts Senate to extend a vote of thanks to Captain Lawrence, that body refused to do so on the ground that "in a war like the present" it was "not becoming a moral and religious people to express any approbation of military and naval exploits." Under the conditions existing, it is not surprising that Lawrence, in Boston, should have experienced difficulty in getting a real competent fighting crew and officers for the southern-built frigate *Chesapeake,* which fact, coupled with his precipitate departure from port (unprepared, badly manned, and disorganized), led to his immediate defeat—followed by his death—before he could obtain order out of chaos, weed out the rebellious, and get the willing members of his crew prepared to fight. When Lawrence's body was brought from Halifax, N. S., to Salem (in a Derby vessel dispatched for that purpose) for burial, so great was the feeling against the war that the North Meeting-House was refused for the funeral service, and its bell was not permitted to be tolled. The East-India Marine Society (with 19 negative votes out of 51 cast) did decide to attend the ceremonies, but the militia declined to do escort duty, and "not a single representative of the state government attended in his official capacity."

The Loss of the U. S. Sloops VIXEN *and* VIPER

On November 22, 1812, while cruising in the West Indies, the 12-gun U. S. sloop *Vixen* (Lieutenant Read) was captured by the fast and powerful 32-gun British frigate *Southampton,* following which both vessels were lost on Concepcion Island of the Bahamas. On January 17, 1813, the diminutive 10-gun U. S. sloop *Viper* (Lieutenant Henley) was taken by the 32-gun British frigate *Narcissus,* but neither of these reverses was technically a naval action.

The U. S. Brig ARGUS *Is Taken by the More Heavily Armed* PELICAN*—a Naval Action Lost by Defective Gunpowder*

Sailing from New York on June 18, 1813, the 20-gun U. S. brig *Argus* (Master Commandant Allen) carried William H. Crawford, U. S. minister to France, and after completing this mission (making the passage to L'Orient in 23 days), the audacious little vessel raided British shipping in the English Channel and Irish Sea. In about a month's time, she captured twenty vessels valued at $2,500,000; most of the ships were destroyed, but the most valuable ones were sent to French ports.

On August 14, the *Argus* fought the heavier 21-gun British brig-of-war *Pelican* (Captain Maples), which had a weight of metal to the broadside 30 per cent greater than that of the American sloop. The *Argus* was undermanned because of the demands made on her by prize crews, but she courageously closed in on her adversary to fight at close range, when it was found that her shots, whereas they hulled the *Pelican,* did not penetrate, the fault being due to the powder used. Taken from a prize, it proved, upon later investigation, to be "condemned powder of the British Government sent to South America to be sold cheap—for what it would bring." The *Argus* took a terrific punishment, but was unfortunately unable to deliver any devastating blows in return. The result was like a fight—as far as punching power was concerned—between a bantam and a heavyweight. The American brig, badly smashed at close quarters, became unmanageable and before long was virtually a helpless target for the gunners of a vessel that she would have whipped had she been able to work her own guns with British- or American-made powder equally as good as the *Pelican* was using. The *Argus*, it is said, was "excellently navigated," her strategy was good, and the marksmanship of her guns of an unusually high order; but the shots that she energetically fired caused but little damage, and the *Pelican* suffered in a 47-minute action only seven casualties against the *Argus'* twenty-three (six killed; seventeen wounded). Allen lost a leg in the encounter and struck his flag to the enemy. The prisoners were taken to Plymouth, where Allen died on August 18.

The Historic Cruise of the ESSEX *and Her Loss at Valparaiso*

In harmony with a government policy of sending light United States naval squadrons into distant seas to harass British commerce and, it was hoped, "draw British cruisers from the American coast, in pursuit," the smallest of the United States frigates, the 32-gun *Essex*—patriotically built in 1799 at Salem, Mass., by the citizens of that town at their own expense—sailed from the Delaware on October 28, 1812, under the command of Capt. David Porter, with orders to join the frigate *Constitution* and the sloop-of-war *Hornet* on a cruise in the Indian Ocean. The *Essex,* freshly out from her builder's yard, had previously, in December 1799, sailed for the Indian Ocean. She was the first United States war vessel to double the Cape of Good Hope, and in February 1813 she was to have the distinction of being the first ship of the American Navy to round the tempestuous Cape Horn. During the wars with the Barbary pirates, the *Essex* saw service in the Mediterranean and in the early days (July-September) of the War of 1812 had made a highly successful cruise as "a lone wolf" against the British, during the latter part of which, on the night of September 4, 1812, being chased by two British frigates, Captain Porter made audacious plans to capture the leading frigate, the *Shannon,* and "to carry her by boarding." The *Essex,* with all lights extinguished, turned to meet the foe, triced the stream anchor and cable up to the main yard ready to be dropped on the enemy's deck, and made every preparation to board the pursuing English frigate, but at daybreak no sail was in sight. (The *Shannon* was the British frigate that captured the U. S. frigate *Chesapeake* off Boston on June 1, 1813.)

Failing to make contact with the *Constitution* and *Hornet* at Port Praya and later at Fernando de Noronha, the agreed-upon places of rendezvous (and after capturing the British packet *Nocton,* 10 guns and thirty-one men, with $55,000 in specie aboard), Captain Porter made for Cape Frio (near Rio de Janeiro), arriving off that point December 25, 1812. (Four days later, the U.S.S. *Constitution* captured the British frigate *Java* off Bahia, which lay well to the north.) After making further futile attempts to get in touch with the *Constitution* and *Hornet* and hearing at St. Catherine Island that the 74-gun British ship-of-the-line *Montagu* had compelled the *Hornet* to raise the blockade on the British sloop-of-war *Bonne Citoyenne* at Bahia and that the *Constitution* and *Hornet* had sailed to the north, Captain Porter felt free to choose his own course and conceived the bold plan of doubling Cape Horn and taking the *Essex* into the Pacific to cruise against the enemy and render assistance to such vessels of the American marine as might be in such waters. As the South American countries were extremely friendly to the British, Captain Porter well knew when making this decision that his ship would have to live on the enemy at sea, replenish stores from captured vessels, and make such repairs as might be needed at unfrequented islands.

Leaving St. Catherine on January 26, 1813, the entire ship's company was weakened by an epidemic of dysentery, but Cape Horn was made on February 14, following which severe gales were experienced, and it was not until March 5 that the *Essex* was fairly in the Pacific and proceeding north under favorable conditions of wind and sea. After anchoring off the island of Mocha and hunting ashore for meat, Porter, much against his will, felt compelled to put into Valparaiso on March 15, as the ship stood in great need of cordage to replace that lost and damaged during the buffeting of gales around Cape Horn. The *Essex* sailed from Valparaiso on March 20. Six days later, Captain Porter captured the Peruvian cruiser *Nereyda* (15 guns), which on the 23rd had taken the American whalers *Walker* and *Barclay*, and the commander of the *Nereyda* admitted having orders to cruise against American commerce. Porter had all the *Nereyda's* guns, small arms, ammunition, and spars thrown overboard, and having obtained from that vessel's commander a list of all vessels in the Pacific known to him, Porter allowed the Peruvian to go his way—as best he might. From this list and conversations, Porter learned that there were twenty English whalers in South Pacific waters, and he promptly disguised his ship and prepared to proceed against them. The *Essex* recaptured the American whaler *Barclay* and on April 17, in company with her, reached Chatham Island of the Galapagos Islands (a center of the British whaling industry).

Cruising from island to island, the *Essex* on April 29 captured her first British whaler, the *Montezuma*, with 1,400 barrels of spermaceti oil aboard. Later on the same day, two other British whalers, the *Georgiana* and *Policy*, were captured by forces sent from the *Essex* in small boats. These vessels were all armed with cannon, but were caught unprepared by determined men. When the Stars and Stripes was hoisted on the attacking boats, resistance ceased, as most of the members of the crews of these whalers were Americans who had been impressed into the English service and greeted the American flag by loud cheers and the throwing down of their arms. The prizes taken by the *Essex* on April 29, 1813, were estimated "to be worth in England half a million dollars." The *Georgiana*, pierced for 18 guns and with 6 mounted when captured, had the reputation of being a fast sailer, so Captain Porter had her fitted out as a cruiser, the 10 guns that the *Policy* carried being transferred to her together with all the small arms and ammunition found in the other prizes. Many of the men captured in the British whalers, being Americans, entered the service of the United States, and Lieutenant Downes, with forty-one men, was placed in charge of the improvised 16-gun new American cruiser. After reconditioning the *Essex* (and the *Georgiana*) at the expense of the captured whalers, the American frigate on May 29 captured the British letter-of-marque *Atlantic* mounting 8 18-pounders and, during the following night, took another British letter of marque, the *Greenwich*, with a much-valued 100 tons of water aboard. Both of these prizes "were abundantly supplied with provisions of every description and naval stores such as cordage, canvas, paints and tar and 800 large tortoises sufficient to furnish all the ships with fresh provisions for a month." The squadron of which the *Essex* was the flagship now consisted of seven vessels mounting 80 guns and carrying 340 men (besides there were 80 prisoners—or 420 men in all). The principal four armed vessels were:

Name	Type	Number of Guns	Number of Men	Name	Type	Number of Guns	Number of Men
ESSEX	Frigate	46	245	GREENWICH	Light cruiser	10	14
GEORGIANA	Light cruiser	16	42	ATLANTIC	Light cruiser	6	12

A fifth vessel, the whaler *Montezuma*, was armed, having 2 guns mounted, and carried ten men; while the unarmed whalers *Policy* and *Barclay* carried crews of ten and seven men, respectively.

The *Georgiana*, under the command of Lieutenant Downes, captured during one day in June, when en route from the islands to Tumbez on the mainland, three British vessels consisting of the *Catherine* (8 guns and twenty-nine men), the *Rose* (8 guns and twenty-one men), and the *Hector,* a well-armed privateer mounting 11 guns and carrying a crew of twenty-five men (of whom two were killed and six wounded in resisting seizure). After putting prize crews on these three vessels, the *Georgiana* was left with a crew of only ten men, and the number of live prisoners captured was seventy-three; so the *Rose* was made a cartel, her guns thrown overboard, most of her cargo destroyed, and the prisoners, released on parole, were placed aboard her and directed to make for St. Helena. At Tumbez, the *Atlantic,* being "a hundred tons larger than the *Georgiana*" and a proven faster vessel, was substituted for the latter improvised cruiser as the attendant sloop to sail with the *Essex.* Twenty guns were mounted on the *Atlantic,* and when Downes (promoted from lieutenant to a master commandant) took command of her with a crew of sixty men, she was rechristened *Essex Junior,* and the stores from all the other prizes were placed aboard the *Greenwich,* which became the store ship of the squadron. On July 9, the *Essex Junior,* escorting the *Montezuma, Barclay, Policy, Catherine, Rose,* and *Hector,* sailed for Valparaiso (Chile having declared her independence), and Captain Porter, with the *Essex, Georgiana,* and *Greenwich,* made for the Galapagos. On July 13, the *Essex* captured the British ships *Charlton* (8 guns), *New Zealander* (8 guns; twenty-three men), and the *Seringapatum* (a relatively powerful ship of 14 guns and forty men). The guns of the *Charlton* were transferred to the *Seringapatum,* giving that ship 22 mounted guns; the *Charlton,* stripped of armament and with forty-eight paroled prisoners aboard, was ordered to make for Rio de Janeiro, and on July 25 the *Georgiana,* with a full cargo of whale oil, was sent to the United States, as the *Essex,* accompanied by the *Seringapatum, Greenwich,* and *New Zealander,* sailed for Albemarle Island.

On September 15, 1813, the *Essex,* disguised as a slovenly merchant ship, captured the British letter-of-marque *Sir Andrew Hammond* of 12 guns and carrying thirty-six men (this ship was pierced for 20 guns and commissioned for 16). Making for Banks Bay, the *Essex* and her British prizes were joined by the *Essex Junior* from Valparaiso, with the news that "several English frigates of superior force" were in the vicinity "searching for the mischievous *Essex.*" Having apparently captured all the British whalers, privateers, or letter-of-marque vessels in those waters (twelve in number mounting 103 guns and carrying 282 men—excluding the recaptured American whaler *Barclay*), the *Essex* and her remaining captures sailed some 3,000 miles west to the primitive and isolated Marquesas Islands and on October 23 arrived at Nukahiva, which it was deemed would be a desirable place to spend a couple of months and give the American frigate a thorough overhauling. After a fort had been built to command the bay and necessary structures erected on shore, the stores were landed, the *Essex* dismantled, "the rats smoked out of her," and complete conditioning repairs undertaken. In November the *New Zealander* was sent to the United States with a full cargo of oil. In an official report to the secretary of the navy, Captain Porter later said:

> I had completely broken up the British navigation in the Pacific. The vessels which had not been captured by me were laid up and dared not venture out. I had afforded the most ample protection to our own vessels, which were, upon my arrival, very numerous and unprotected. The valuable [British] whale fishery there is entirely destroyed, and the actual injury we have done them may be estimated at two and a half million dollars. . . . They have supplied me amply with sails, cordage, cables, anchors, provisions, medecines, and stores of every description—and the slops on board have furnished clothing for the seamen. We have in fact lived on the enemy since we have been in that sea; every prize having proved a well-found store ship for me. I have not yet been under the necessity of drawing bills on the department for any object.

The *Essex* and *Essex Junior* sailed from the Marquesas Islands on December 12, 1813 (leaving a garrison of twenty men under a lieutenant of marines and two midshipmen in charge of the prizes *Seringapatum, Greenwich,* and *Sir Andrew Hammond*), and after watering at San Maria and calling at Concepcion, they reached Valparaiso on February 3, 1814. Five days later, the British frigate *Phoebe* (rated as a 36-gun vessel but carrying 46 mounted guns and 4 swivels), under the command of Capt. James Hillyar, accompanied by the ship sloop-of-war *Cherub* (rated as an 18-gun vessel but carrying 27 mounted guns)—engaged in a search for the *Essex*—arrived at Valparaiso under orders to take or destroy the troublesome American frigate and proceeded to blockade the harbor. On February 27, the *Essex*, challenged by the *Phoebe* when both ships were alone, accepted the taunts of defiance, hoisted a flag bearing the motto, "God, our country and liberty; tyrants offend them," and sailed down the harbor to meet the foe; whereupon Captain Hillyar, who, it is said, was under strict orders not to engage the *Essex* in a single-ship action, set full canvas (including studding sails) on the *Phoebe* as the *Essex*, under only topsails and jib, opened fire, and the Britisher ran to join forces with her consort. The *Essex* returned to her anchorage, but after six weeks, during which the *Phoebe* and *Cherub* mounted guard over the American frigate, word reached Valparaiso that four other British war vessels were on the way to Valparaiso, and on March 28, during a heavy gale from the south, the *Essex* parted her port cable and dragged her anchor to sea. With canvas on her, the main-topmast, with its yards and all above the lower mast, was carried away, and the men who were on the main topgallant yard at the time were swept to their death.

Captain Porter endeavored to get his disabled ship back to her original anchorage, but could not do so and ran into a nearby cove about three-quarters of a mile to leeward of the fort guarding the east side of the harbor. He dropped his anchor within half a mile of the shore, where he hoped to be able to make the needed repairs. The British, perceiving his plight and unfortunate vulnerability, promptly ignored the neutrality of the setting and the tenets of international law and moved in to the kill. The *Essex* had a queer battery, all of her guns being short 32-pounders except 6, which were long 12-pounders. This battery of the *Essex* had been condemned by Captain Porter and other United States naval commanders. Whereas it gave a great weight of metal to the broadside for such a small frigate, the *Essex*, to use her battery, had to come in close to the enemy. It was felt by those responsible for the installation that she would be able to do this in the open sea (if she could keep her masts and spars intact), as she was a speedy and rather handy vessel. However, her armament was decidedly un-American and hastened her destruction, for her guns could not reach the enemy, which, lying off out of the range of the *Essex*, pounded her to her doom while she lay in a helpless position. The following is a comparison of the armament of the *Essex* and of her British antagonists:

Number and Type of Guns	H.M.S. PHOEBE	H.M.S. CHERUB	Total British	U.S.S. ESSEX
Long 18-pounders	26	—	26	—
Long 12-pounders	—	—	—	6
Long 9-pounders	4	—	4	—
Long 6-pounders	—	2	2	—
Total long guns	30	2	32	6
Short 32-pounders	14	18	32	40
Short 18-pounders	1	6	7	—
Short 12-pounders	1	1	2	—
Total short guns	16	25	41	40
Total armament	46	27	73	46

The above analysis gives the British an advantage in long-range firing of weight of metal of 516 lbs. to 72 lbs.—a ratio of 7.2 to 1, which is so one-sided that it is evident that the action was decided before a gun was fired, provided the British kept out of range of the short 32-pounders of the *Essex* and the American frigate was unable to change her position. Other records show that in this engagement the British had 38 guns throwing 624 lbs. of metal at long range; whereas all the long guns on the *Essex* (if they could have been brought to bear) could fire only 72 lbs. of metal—a ratio in favor of the British of 8.7 to 1.

Sir Howard Douglas, a British authority on naval gunnery, shows how completely the tables had been turned on the Americans by fate in the action between the *Essex* and a superior

British force at Valparaiso on March 28, 1814: "The United States commanders so circumspectly and cautiously adopted their tactics to the superior power of their armaments that . . . they would neither approach nor permit us to join in close battle until they had gained some decisive advantage from the superior faculties of their long guns in distant cannonade."

Captain Hillyar, after placing his frigate, the *Phoebe,* in an advantageous position at the stern and the *Cherub* off the bows of the *Essex,* where but very few of that vessel's guns could be brought to bear, opened fire on the helpless American frigate at 4:00 p.m. Unsuccessful attempts were made on the *Essex* to work her into a better position, but she managed to do some damage to the enemy with 3 long 12-pounders run out through the stern ports. What shots the *Essex* could fire at the range set by the Britishers, when they reached their goal, took effect; however, even though the British ships retired out of all range for a while, in substance it was not a fight but sheer murder. One of the few guns on the *Essex* that could be used was manned three times, and fifteen men were killed at it. The British became more and more averse to coming to close quarters, and their guns, for which the *Essex* had no reply, made great carnage. An explosion occurred below decks, flames burst from the hatchway, and as the magazine might blow up at any minute, Captain Porter gave all the men who cared to take the risk permission to swim ashore. A council of war was summoned, and it was found that Captain Porter and Lieut. Stephen Decatur McKnight were the only surviving officers. The *Essex* had a crew of 255 when the attack was made on her as against 421 men on the British ships. When it was found that only 75 men on board the American frigate were fit for duty, Captain Porter decided to strike his colors, which he did at 6:20 p.m. after an heroic and hopeless defense of two hours and twenty minutes. The loss on the *Essex* was 58 killed, 66 wounded, and 31 missing—a total of 155, or over 60 per cent of her crew. The *Phoebe* carried 300 men and the *Cherub* 121, and they reported their total loss (probably understated) as 5 killed and 10 wounded, with a stated 11 casualties on the *Phoebe* and 4 on the *Cherub.* (First Lieut. William Ingram of the *Phoebe* is known to have been killed during the action.) Captain Hillyar, in his official report of the engagement to the British Admiralty, wrote:

> The defense of the *Essex,* taking into consideration our superiority of force, the very discouraging circumstance of her having lost her main-topmast and being twice on fire, did honor to her brave defenders and most fully evinced the courage of Captain Porter and those under his command. Her colors were not struck until the loss in killed or wounded was so awfully great, and her shattered condition so seriously bad, as to render further resistance unavailing.

Whereas the *Essex* was badly shattered and a wreck, the British ships did not emerge from the engagement unscathed. The *Phoebe* received seven shot between wind and water and one under water, while her main- and mizzenmasts and her sails and rigging were seriously damaged. The *Cherub* "received several shot in the hull, some of her lower shrouds were cut through and her main-topmast stay and most of her running rigging were carried away." We read that the attack was made on the *Essex* when she was "so near the shore that some of the shot even struck among the [Chilean] citizens." There is no question that the British naval commander, Capt. James Hillyar, has left a stain upon his record and that of the Royal Navy by his wanton violation of international law in committing hostile acts against an enemy ship when in a neutral port—and this was not the only time that the arrogant British were guilty of this offense during the War of 1812.

The *Essex Junior* was far too light to wage war against the heavy and powerful British frigate and sloop of war and, under orders, kept out of the fray. However, by an agreement made at the time of the capitulation, she was made a cartel and sent to the United States with the survivors of the *Essex* as prisoners on parole. When the *Essex Junior* arrived off Sandy Hook on July 5, 1814, she was brought to by the heavy British razee *Saturn* commanded by Captain Nash, who seemed disinclined to honor the agreement made by Hillyar and Porter. The delay and bickering annoyed Captain Porter, so he and and a few men quietly disembarked from the *Essex Junior* and, assisted by fog, succeeded in eluding pursuers and in reaching shore. Later, the *Essex Junior* was permitted to enter New York Harbor, and the survivors of the *Essex* received popular acclaim. It was generally recognized that the *Essex* had not been defeated in any single-ship action, but had put up a splendid defense against vastly superior force when maimed and rendered practically helpless by fate and that before her final loss the ship had struck her blow at the enemy—capturing four thousand tons of shipping, capturing or recapturing nearly four hundred prisoners, and annihilating British commerce in the part of the globe in which she had cruised. Maclay says:

Nor was this all; for had the *Essex* failed to appear in the Pacific, many American whalers, which had not even heard of the declaration of war—as whalers kept the sea from one to four years at a time—would have been taken or destroyed by the British privateers that Captain Porter seized. The timely warning given by the *Essex* enabled them to secure places of safety, so that only one was captured.

The New Sloop-of-War PEACOCK *Wins a Great Victory and Captures the "Matchless"* EPERVIER

The second of the new sloops to put to sea was the *Peacock* (Mast. Comdt. Lewis Warrington). Sailing from New York March 12, 1814, the *Peacock*, on April 29, encountered the 18-gun British brig *Epervier* (Captain Wales) off the Florida coast. At the first fire, the *Peacock* received two 32-pound shot in the quarter of her foreyard, which disabled the fore and fore-topsail for the remainder of the action and compelled Warrington to forego maneuvering and rely almost entirely on his ship's gunnery. After a forty-five-minute engagement in close range, the British vessel struck her colors. During the fight, Captain Wales urged his men to board the American, but the British historian James says that "the British crew declined a measure so fraught with danger."

The *Epervier*, which fired 274 lbs. of metal to a broadside, had 23 casualties (8 killed; 15 wounded) out of a crew of 128 men; while the *Peacock*, firing 309 lbs. of metal, had only 2 casualties (both wounded) out of a crew of 160 men. The two vessels, in size and power, were reported as "admirably matched," being of the same beam and depth, but the American sloop was a little longer and carried two additional short 32-pounders on a side. (In total weight of metal to the broadside, the *Epervier* was 11 per cent less than the *Peacock*.) The *Epervier* was a new British brig of war (built in 1812) which the admiralty considered "in speed, handiness, strength and effective power of armament superior to any vessel of her class afloat." We are told that when the *Epervier* left London, "the betting was three to one that she would take an American sloop of war or a small frigate." Master Commandant Warrington wrote of the vessel captured from the British: "The *Epervier* is one of their finest brigs and is well calculated for our service. She sails extremely well." Once again, in the action between the *Peacock* and the *Epervier*, the superiority of American gunnery to that of the British was outstandingly evident. Maclay writes:

It seems hardly credible that in a hotly contested action of forty-five minutes at close quarters and in smooth water, there could have been such a vast difference in damage between [evenly matched] vessels, both of which sought an engagement, yet such difference is admitted on both sides. . . . The *Epervier* was cut to pieces, there being but one gun that was not disabled on the engaged side, while five feet of water was in her hold. Her fore rigging, stays and main boom were shot away, her bowsprit badly wounded, and her foremast cut nearly in two and left tottering, while her maintopmast was over the side. Her hull was pierced with forty-five shot holes on the port side, twenty of which were within a foot of the water line. . . . During this brilliant action the *Peacock* did not receive a shot in her hull, the only considerable injury being that to her foreyard.

Master Commandant Warrington wrote: "In fifteen minutes after the enemy struck, the *Peacock* was ready for another action in every respect but her foreyard, which was sent down, fished, and had the foresail set again in forty-five minutes." Every exertion was made to keep the badly damaged prize afloat, the dangerous shot holes were promptly and effectively plugged, and by night the brig was put under sail. Sir Edward Codrington, writing of this single-ship action, said: "It seems that the *Peacock,* American sloop of war, of what size I know not, has taken our *Epervier.* But the worst part of the story is, that our sloop was cut to pieces and the other scarcely scratched."

The *Epervier,* when captured, had $120,000 in specie aboard, and this, with the captured crew, Warrington transferred to the *Peacock,* putting Lieutenant Nicholson and sixteen men on the British prize to take her into port. The vessels sighted British frigates and had to resort to clever strategy before they made port, but the "singular ingenuity" of the Americans, which the British commanders complained of, was in evidence. The *Peacock* on one occasion decoyed a British frigate away from the helpless *Epervier,* and in a calm and shallow water the prize, with only sixteen men aboard, actually beat off an attack in small boats sent to take her from another British frigate. The *Epervier* reached Savannah on May 1, 1814, and the *Peacock,* which had been leading the British in a futile chase out to sea, arrived three days later. On June 4, 1814, the *Peacock* sailed again to harass the enemy; she crossed the Atlantic and returned to New York October 29, having on this cruise of 147 days to the British coast and the Bay of Biscay captured fourteen British merchant vessels, valued at $493,000, and taken 150 men as prisoners.

The Sloop-of-War WASP (II) *Sinks the* REINDEER *and the* AVON

In 1814, the *Wasp,* a new 22-gun U. S. sloop of war (Master Commandant Blakely) and the third to put to sea of the six new sloops ordered by Congress in 1813, won two sharp naval actions in the English Channel. On June 28 the *Wasp* engaged, shattered, and rendered unseaworthy the 19-gun British brig *Reindeer* (Captain Manners), so that she had to be blown up by her captors. The action lasted nineteen minutes, and the casualties totaled 57 per cent of the crew for the British and 15 per cent for the American vessel. The London TIMES, commenting on this engagement, said:

> It seems fated that the ignorance, incapacity and cowardice of the Americans by land should be continually relieved in point of effect on the public mind by their successes at sea. To the list of their captures, which we can never peruse without the most painful emotions, is now to be added that of His Majesty's ship *Reindeer* taken after a short but most desperate action by the United States sloop of war *Wasp.*

During the night of September 1, 1814, the *Wasp* outfought the 18-gun British brig *Avon* (Captain Arbuthnot) in an engagement that lasted forty-three minutes and beat off another British sloop of war—the 18-gun brig *Castilian* (Captain Brainer). The *Wasp* had only 3 casualties out of a crew of 163; whereas the *Avon,* which was sunk as a result of the *Wasp's* gunfire, later admitted that 36 per cent of her crew were killed or wounded in action with the American warship. Up to September 21, when she overhauled and captured the valuable and well-laden armed British merchantman *Atalanta* of 8 guns (which she sent to Savannah under a prize crew), the *Wasp,* on her cruise in the English Channel and eastern Atlantic, is known to have captured fifteen British vessels of 2,860 tons valued at $200,000, and all but two of these merchantmen were destroyed at sea. One vessel captured by the *Wasp* was taken from a British convoy from under the nose of the British 74-gun battleship *Armada;* this was the brig *Mary,* laden with brass cannon and stores for Gibraltar, and Blakely promptly burned her. The *Wasp* is known to have stopped the Swedish bark *Adonis,* bound from Rio de Janeiro, on October 9, 1814, several hundred miles west of the Cape Verde Islands, but nothing is known of the *Wasp* since that time, and it is surmised that she was a victim of a fierce hurricane.

The Old 16-*Gun Brig* SIREN *Is Captured by the* 74-*Gun Battleship* MEDWAY

Lieutenant Nicholson, who had demonstrated a vast amount of courage, resourcefulness, and general ability in bringing the *Epervier* into Savannah, was given command of the old 16-gun brig *Siren* and early in June 1814 sailed from Boston (in company with the privateer *Grand Turk)* to cruise off the coast of Africa. After being robbed of the capture of a British vessel in the Senegal River by the heavy fire of a shore fort, the *Siren* captured and destroyed the English ships *Barton* and *Adventure,* but on July 12 had the misfortune to fall in with the 74-gun British ship-of-the-line *Medway* (Captain Brine), a fast as well as powerful vessel. After a chase of eleven hours, during which the little *Siren* threw overboard all her guns, shot, and movable heavy weights, she was finally overtaken and captured.

The Cruises of the U. S. Frigate PRESIDENT *and Her Loss in January 1815*

The U. S. 44-gun frigate *President* (Capt. John Rodgers) was unlucky in the War of 1812. On her first cruise, she chased the British frigate *Belvidera,* fired the first shots of the war, injured the enemy, and caused casualties; but the fourth shot, fired by a bow chaser on the *President,* caused the gun to burst, killing and wounding sixteen men (Captain Rodgers fractured a leg), shattering the forward, main, and forecastle decks, and temporarily disabling the other bow guns. The *Belvidera* was severely punished, but she claimed only twenty-four casualties (two killed and twenty-two badly wounded—some of whom died later) and escaped from the heavily laden *President* during the dark of the evening and night by throwing overboard heavy weights such as anchors, gear, and boats (including 14 tons of fresh water). An officer on the *President* wrote that "four of the *Belvidera's* boats were seen floating by the *President* completely knocked to pieces, together with a great number of casks, spars, etc." Captain Rodgers gave up the chase as futile at 11:30 p.m., and during this unsatisfactory engagement, the *President* suffered twenty-two casualties (three killed; nineteen wounded), only six of whom were from the enemy fire.

On her second cruise of the war against the enemy, the *President* (Captain Rodgers), in company with the 36-gun frigate *Congress* (Capt. John Smith) on October 31, 1812, several hundred miles due west of the Madeiras, sighted the British frigate *Galatea* (rated as a thirty-six and a sister of the *Belvidera*), under the command of Captain Losack, and two other sail. The *President* set sail after the *Galatea*, which escaped during the night, without coming within gunshot of the American frigate. The vessel that the *Congress* stood after and captured was the South Sea whaler *Argo*, and apparently the third British sail, said to have been the whaler *Berkeley*, escaped. During the entire month of November 1812, the *President* and *Congress*, sailing in company, did not meet a single vessel, and they returned to Boston on December 31 after a second disappointing foray aimed at British commerce.

The *President* and *Congress*, under the same commanders, put to sea from Boston on the night of April 30, 1813, successfully eluding the British blockading fleet, and set forth on their third cruise against enemy shipping. Two days later (May 2), the *President* sighted the 18-gun British sloop-of-war *Curlew* (Captain Head), but after "a protracted chase," the Britisher escaped. The American frigates soon afterwards separated, and the *Congress* sailed south and returned to Portsmouth, N. H., on December 14, 1813, completing a cruise of 7½ months (228 days), during which she took only four British merchantmen. The *President* returned to port September 24 after a cruise of 147 days, during which she captured twelve vessels and by a ruse, when posing as a British frigate, obtained from the schooner *High Flyer* (Lieutenant Hutchinson), tender to the British ship-of-the-line *San Domingo*, a copy of the British naval signals, Admiral Warren's private instructions to all commanders of his fleet, and the force, position, and intended movements of each vessel of the Royal Navy on the North American station. A private circular was also found instructing British commanders to capture the *President* at any cost, as she was considered by the British Admiralty as "the most powerful and dangerous of the American frigates."

On December 4, 1813, the *President* (Captain Rodgers) sailed from Providence, R. I., on her fourth cruise of the war against the enemy and on February 18, 1814, returned to New York after a 76-day cruise in the Atlantic and Caribbean Sea, during which she captured four British merchantmen. When waiting for the tide, the *President* (rated as 44 guns) was approached by the British frigate *Loire* (rated as 38 guns), engaged on blockade duty, but when the Britisher detected the size and power of the American frigate, she promptly withdrew without firing a gun, declining any single-ship action with a United States naval vessel of approximately equal force. Capt. Stephen Decatur, Jr., of Barbary pirate fame, who had been the commander of the frigate *United States* when she captured the British frigate *Macedonian*, relieved Capt. John Rodgers as commander of the *President*, and the government decided in the fall of 1814 to send the *President*, accompanied by the sloops-of-war *Peacock* (Captain Warrington) and *Hornet* (Master Commandant Biddle) with the *Tom Bowline* as a store ship "into the Indian Ocean and to cruise in the East Indies." On the night of January 14, 1815, the *President* stood down the narrows for sea following a heavy gale and unfortunately ran aground at 8:00 p.m. while under the control of the pilot—there being no beacon lights. Maclay tells of this calamity as follows:

> Strenuous efforts were made to float the frigate off, but as she was heavily laden for a long cruise, it was nearly two hours before she was again got into deep water. In the meantime she thumped violently on the bar, and was so strained and "hogged" as seriously to impair her sailing qualities and seaworthiness. A portion of her false keel was displaced, her rudder braces were broken and the ship was otherwise so injured as to render a return to port imperative; but this owing to the strength and direction of the wind, was impossible, and at 10 p.m. she was forced over the bar.

Captain Decatur proceeded to sea and at the crack of dawn ran into a British blockading squadron of four vessels (a big razee of 56 guns and three powerful frigates), and three of them were within a distance of two miles of the *President*. In the chase that followed, the American frigate was logy, and the effects of the damage in grounding were painfully apparent. The ship was making much water and requiring constant use of the pumps, and attempts were made to lighten her by throwing overboard all possible weight such as boats, anchors, cables, spars, stores, water, and even provisions. At 11:00 a.m. on January 15, H.M.S. *Majestic* (Capt. John Hayes—commodore of the British squadron) opened fire, but the *Endymion* (with 50 mounted guns, though rated as a 38-gun frigate carrying 24-pounders), under command of Captain Hope, forged ahead of the other ships of the British squadron. An attempt made by Captain Porter to board the *Endymion* was frustrated by the wary Captain Hope. In an action at close quarters, First Lieutenant Babbitt and Lieutenant Hamilton (son of the ex-secretary of the navy) were soon killed, and Captain Decatur was wounded twice. The *President* silenced the guns of the *Endymion,* but with the other ships of the British squadron at close quarters, Captain Porter could not take her or transfer his men to the faster-sailing and sounder British frigate as had been his intent, so at 8:30 p.m. he resumed his flight. At 11:30 p.m., the British frigates *Pomone* and *Tenedos* (each rated at 38 guns—and the same size and power as the *Endymion)* came up close. Decatur, in his official report, said:

> The *Pomone* had opened her fire on the port bow, within musket shot, the other [*Tenedos*] about two cables' length astern, taking a raking position on our quarter, and the rest [of the British squadron] with the exception of the [dismantled and defeated] *Endymion* within gunshot. Thus situated, with about one-fifth of my crew killed and wounded [and most of the officers—three out of five of the lieutenants having been killed], my ship crippled, and a more than fourfold force opposed to me, without a chance to escape I deemed it my duty to surrender.

The *President* had eighty casualties (twenty-four killed and fifty-six wounded), and the *Endymion* reported later only twenty-five casualties (eleven killed and fourteen wounded) during the two and a half hours that she battled the *President.* The *Endymion,* with her guns all silenced, was forced out of action by the *President,* and her masts, spars, and rigging were so injured that she could not be navigated until extensive repairs (with help from the other ships of the squadron) could be made. She had the same main battery as the *President,* as each of the vessels carried 30 long 24-pounders, although with their short guns, the *President,* rated as a 44-gun ship, carried 52 guns in all and the *Endymion,* 50. Captain Decatur surrendered his sword, not to the captain of either the *Pomone* or the *Tenedos* but to the senior officer of the British squadron, Capt. (or Commodore) John Hayes of H.M.S. *Majestic,* who returned it, saying that he felt proud in returning the sword of an officer who had defended his ship so nobly. Rear Admiral H. Hotham, in reporting the capture of the *President* to his superior British officer, Vice Admiral Cochrane, wrote: "I have the honor to acquaint you with the capture of the United States ship *President* on the 15th instant by the following force, viz.: the *Majestic,* Captain Hayes; the *Tenedos,* Captain Hyde Parker; the *Endymion,* Captain Hope; the *Pomone,* Captain Lumley—which I had collected off the bar of New York, under the direction of Captain Hayes."

Although Captain Decatur seemingly had not put up a last-ditch defense of his ship, as most of his admirers had reason to expect, nevertheless, he remained a popular idol and was an efficient and brave officer both before and after his brief and unfortunate command of the *President.* Vice Admiral Cochrane declared that the American frigate had been "completely mobbed" by a powerful British squadron (of four times the *President's* gun power), and it was well known that the *President* fought a running fight with the squadron for twelve and a half hours when she was in no physical condition structurally to enter an action with even a single ship of approximately even force. A U. S. naval court of inquiry, called after Captain Decatur's parole from Bermuda, had no criticism to make of his conduct, and its report of the episode—unfortunate for the U. S. Navy—consisted of only words of praise for the commander of the *President.* Shortly after the close of the War of 1812, Captain Decatur was in command of an American naval squadron sent to the Mediterranean to put a stop to the belligerency of the Barbary pirates and their depredations on United States commerce. In this command, Captain Decatur showed a vast amount of courage, aggressiveness, and nerve as well as leadership of a high order; he forced peace treaties on the Moslem corsair states under the muzzles of American naval cannon and, utilizing armed force effectively and impressively, spoke the only language the unscrupulous Turkish bashaws and regencies of Algiers, Tunis, and Tripoli could understand.

The Record of the "Incomparable" CONSTITUTION *and the Capture by "Old Ironsides" of the* CYANE *and* LEVANT *in February 1815*

The U. S. 44-gun frigate *Constitution,* built at Boston, was launched September 20, 1797, and when completed made a cruise in the West Indies and showed herself with what the British called "her ridiculous lines" and "monstrous and preposterous" armament to naval commanders of the Royal Navy stationed in those waters. The *Constitution* was ridiculed by the British as a "presumptuous," unscientific, and impractical attempt at naval architecture by inexperienced and incompetent "rebel subjects" (as the Americans were still ungraciously called by the British prior to the end of the War of 1812). The commander of a frigate of the Royal Navy on blockade duty on the St. Domingo station, planning to "show up" the *Constitution* and her Yankee upstart crew, challenged Capt. Silas Talbot, her commander, to an "all-day race," which was promptly accepted. The British frigate, built from French lines, was reputed to be "one of the best sailers in West Indian waters" and capable of holding her own with almost anything of her type afloat, but a race from sunrise to sunset showed the *Constitution's* overwhelming superiority in sailing qualities. The Britisher was decisively beaten —and admitted it. Maclay says: "Had this [English] captain lived sixteen years longer, the mortification of his defeat would have been considerably diminished by learning that eighteen British frigates and several ships of the line subsequently endeavored to overtake the *Constitution* [and many fast naval and merchant ships tried to run away from her] with a similar want of success."

In action with shore batteries and land fortifications, it was the guns of the *Constitution* (Commodore Edward Preble) at Tripoli, in the late summer of 1804, that led to the end of hostilities in 1805 with the Barbary pirate states. In early 1812, the British, at Portsmouth and later in the English Channel, essayed to obtain from the *Constitution* a man who they claimed was a Britisher (but was in fact an Irish-American), and it looked as if the British were determined to try to repeat the disgraceful *Chesapeake-Leopard* affair of 1807, but the *Constitution,* then under the command of Capt. Isaac Hull, was no *Chesapeake* such as Captain Barron had commanded. When two British frigates lined up, one on each side of the *Constitution,* the American crew was sent to quarters, the battle lanterns lighted, decks cleared, ammunition piled near the guns, and all made ready for immediate action. The *Constitution* put to sea, and the British, preferring not to have a naval action of the type threatened in a British port, followed her and planned, by joint action of two frigates against one, to subdue the arrogant Yankees to a proper spirit of compliance with British naval orders when they were out of sight and sound of land. The speedy *Constitution* led the Britishers a long chase, and after one of the pursuing ships was hull down, Captain Hull gave the order to heave to, in order to allow the other English frigate to come up, remarking to his lieutenant, "If that fellow wants a fight, we won't disappoint him." The powerful frigate of the Royal Navy came up alongside the *Constitution,* but did not like the warlike looks, preparedness, and a plainly evident desire to fight exhibited by the Americans. Moreover, the companion British frigate was far astern, so the Englishman, considering discretion the better part of valor and knowing that any attempt at bullying would get him nowhere (and probably some devastating broadsides), merely exchanged a few commonplace hails and then stood about and returned to join the other British frigate and make back to port.

Following the *Constitution's* chase by Capt. Philip B. V. Broke's six-ship 220-gun blockading squadron and the cruises during which in single-ship actions the vessel captured the British frigates *Guerrière* and *Java*, the *Constitution*, under the command of Capt. Charles Stewart, eluded the British blockading squadron off Boston January 1, 1814, and ran down to the West Indies. On this cruise, the *Constitution* sighted the British frigate *Pique* (rated at 36 guns), which, however, did not want to fight and escaped during the night, presumably by running through Mona Passage to a protecting port. A 14-gun British schooner was taken, and the *Constitution* returned to Boston April 23, 1814, via Marblehead, having captured four prizes aggregating 24 guns and seventy-six men.

The *Constitution* did not get to sea again to make her fourth (and last) cruise during the War of 1812 until December 17, 1814, when she skillfully evaded the British blockading squadron off Boston—consisting of the *Newcastle* (50 guns), *Acasta* (40 guns), and *Arab* (18 guns)—three vessels rated as 108 guns, or 2½ times the rating of the *Constitution*. Running down to Bermuda, the American frigate on December 24 captured the British armed merchant ship *Lord Nelson*, sailed east to the Madeiras and Portuguese coast, and took the British ship *Susan*. Off Lisbon, the *Constitution* sighted the British 74-gun ship-of-the-line *Elizabeth*, but no attempt was made by that powerful vessel to chase the American, although the British 38-gun frigate *Tiber* (commanded by Captain Dacres, who was on the *Guerrière* when the *Constitution* captured her) and other British naval vessels, hearing from merchant ships of the presence of the *Constitution* in those waters, were endeavoring to contact her. On February 20, 1815, Captain Stewart, with the *Elizabeth* (74 guns) and *Tiber* (38 guns) "only a few hours sail behind him" and the island of Madeira bearing about 180 miles to the southwest by west, sighted "two big full-rigged ships" in the early afternoon, believed in the hazy air to be 44- to 50-gun British ships. The *Constitution* made chase, and at 4:30 p.m., when about to open fire on a frigate, her main royal mast gave way, which necessitated a slight delay of plans. When the *Constitution* resumed the chase, it was seen that the two Britishers had come together, and later it was evident that, whereas both were big-looking full-rigged ships, one was a frigate (the 34-gun *Cyane*) and the other a ship-sloop of war (the 21-gun *Levant*). The naval engagement commenced at 6:05 p.m., the two British ships acting as a unit to take or destroy the American frigate. Captain Stewart maneuvered and fought his ship with great skill, and at 6:50 p.m. the British frigate *Cyane* (Capt. Gordon Falcon) surrendered, while the *Levant* (Capt. George Douglas) made off, hoping to escape in the dark of the night. After putting a prize crew on the British frigate and removing and securing prisoners, the *Constitution* set off in chase of the *Levant* and commenced exchanging fire with her at 9:05 p.m. At 10:00 p.m., the Britisher struck his colors. The following is an analysis of comparative force of the British and American vessels engaged in this action, which was not a single-ship engagement but one American vessel against two British ships, with two other powerful British men-of-war in the immediate vicinity:

Name of Vessel	Number of Guns	Pounds of Metal to the Broadside	Number of Crew	Casualties		
				Killed	Wounded	Total
H.M.S. CYANE (frigate)	34	451	175	12	26	38
H.M.S. LEVANT (ship-sloop of war)	21	303	138	23	16	39
British total	55	754	313	35	42	77
U.S.S. CONSTITUTION (frigate)	51	644	456	4	10	14

The *Constitution,* by 1:00 a.m. on February 21, 1815, and only three hours after the engagement ceased, was reported as "in shipshape and ready for another action." On March 10, the vessels anchored in Port Praya, where the captured British merchantman *Susan,* with a prize crew aboard, awaited the American frigate. Around noon of March 11, Captain Stewart saw some large vessels approaching Port Praya, and fearing foul play from the British, who could not be trusted to respect the rights of neutral ports, he put to sea with the *Constitution, Cyane,* and *Levant* and barely cleared the harbor entrance before Sir George Collier's British squadron came in gun range. This squadron, with the 50-gun frigate *Leander* as flagship, the 50-gun frigate *Newcastle* (Capt. Lord George Collier), and the 40-gun frigate *Acasta* (Captain Kerr), three vessels rated as 140 guns and equipped and armed to take any American-rated 44-gun frigate such as the *Constitution,* had crossed the Atlantic hunting for the *Constitution,* which, to its great chagrin, had escaped from the blockaded port of Boston. The commanders of British frigates and ships of the line had been ordered by the admiralty to sail in squadrons (and not less than in pairs) to capture or destroy the *Constitution.* We read: "The capture of no American frigate would have caused so much rejoicing in England as that of the *Constitution,* for *Old Ironsides* had done more to level British pride [particularly with her capture in single-ship engagements of the British frigates *Guerrière* and *Java*] than any other ship."

The British, because of their misinformation and the thick weather when they sailed in pursuit of the *Constitution* and her two prizes, thought that they were chasing three American-built ships of war, and they were overcautious. The *Constitution* outsailed her prizes, and Captain Stewart, fearing their recapture by the British, ordered the *Cyane*—the sternmost vessel—at 1:10 p.m. to tack to the northwest and make, on her own, for the United States. The order was promptly obeyed by Lieutenant Hoffman, who was in command, and she reached New York April 10; but to the great surprise of Captain Stewart, not one of the British ships followed her or made any attempt to intercept her. Later, the *Levant* was signaled to head northwest also, Stewart hoping that one of the British pursuing squadron would follow her and leave but two British frigates for him to deal with. To the astonishment of all aboard the *Constitution,* the entire British squadron followed the *Levant,* and Lieutenant Ballard, who was in command of that vessel, with a prize crew aboard, finding himself being chased by a formidable British naval squadron, changed his course, ran back to the neutral harbor of Port Praya, and anchored his ship under the guns of the fort and close in to shore (it was said that her jib boom projected over the land) before the British vessels could get within gunshot. The *Constitution* sailed without further molestation from British Navy forces and returned to Boston safely and with honors as the outstanding ship—of both the British and United States navies—of the War of 1812.

The *Levant,* having reached the refuge of a neutral port and an inviolable asylum according to the law of all civilized nations, was wantonly attacked at her anchorage by the British frigates *Newcastle* (50 guns) and *Acasta* (40 guns) under orders of the squadron commander, Sir George Collier, and Lieutenant Ballard was compelled to surrender the *Levant* to the superior British force after the heavy fire of the frigates of the Royal Navy had not only further damaged the *Levant* but also done material injury "to the houses of the town." As far as neutrality was concerned during the War of 1812, the "divine right" British considered themselves beyond the law of civilized nations as is proven by the *Essex-Phoebe* and *Cherub* episode at Valparaiso; the diabolical attack of a British naval squadron (three vessels rating 130 guns) on the small American privateer *General Armstrong,* "lying close to the beach within half pistol shot of the castle," in the harbor of Fayal (Azores), which caused casualties and damage on shore; and the equally vicious bombardment—unrestrained by law or even by the dictates of humanity and plain common sense—on the *Levant* at Port Praya. Sir George Collier was much criticized by the British, not for his violation of the sanctity of a neutral port but for his failure to take the *Constitution* with the vastly greater force under his command and also for letting the *Cyane* escape to America with a prize crew. We are told that Collier, mentally "unhinged" by persistent criticism of his handling of a strong British naval squadron "that failed to take the *Constitution* and recapture the *Cyane,"* committed suicide in 1825.

Captain Stewart maneuvered the *Constitution* cleverly in the engagement with the *Cyane* and *Levant,* punishing and taking both vessels without suffering much injury to his own. Maclay, in HISTORY OF THE NAVY, says:

> In this brilliant cruise Captain Stewart proved himself an officer of rare ability. His action with the *Cyane* and the *Levant* and his masterly escape from the British squadron, called for all the qualities of a great commander, while his unhesitating attack on what appeared, in the heavy weather, to be two frigates, the beautiful style in which the *Constitution* was put through the most difficult maneuvres and the neatness with which he captured a superior force, have ranked him as one of the most remarkable naval officers of his day.

Maclay also says that the career of the *Constitution* was, throughout, "sufficiently remarkable to stamp her as an extraordinary ship" and that her last cruise in the War of 1812, when under the command of Captain Stewart, "was the one in which she achieved her greatest triumph and performed her most brilliant service."

The New Sloop-of-War FROLIC *Is Captured by the Frigate* ORPHEUS *and the* SHELBURNE

Of the six new sloops of war ordered by Congress on January 2, 1813, the *Frolic* (Mast. Comdt. Joseph Bainbridge) was the first to get to sea, and she was unlucky. On her first cruise, when fifteen miles northwest of Mantanzas, Cuba, on April 20, 1814, she fell in with the speedy and powerful 36-gun British frigate *Orpheus* (Captain Pigot) and the 12-gun British topsail schooner *Shelburne* and was captured by this superior force after a chase of sixty miles, during which the *Frolic* threw overboard "all her guns, shot and every other heavy article" to lighten the vessel in a frantic effort to escape.

A Comparative Record of All the Single-Ship Naval Actions at Sea between Vessels of Relatively Similar Type and Power during the War of 1812

In setting forth this record, no consideration has been given to captures of relatively small sloops by much larger and more powerful frigates or ships of the line or to the taking of a single vessel by a squadron of two or more warships; on the other hand, the victory of the U.S. frigate *Constitution* over the combined force of the British frigate *Cyane* and the ship-rigged sloop-of-war *Levant* has been included, as this was a naval action between a single American vessel and two British naval ships of superior force acting in co-operation and con-

The Victor		The Defeated	
Name	Type	Name	Type
U.S.S. CONSTITUTION (Capt. Isaac Hull)	American 44-gun frigate (actual, 55 guns)	H.M.S. GUERRIÈRE (Captain Dacres)	British 38-gun frigate (actual, 49 guns)
U.S.S. UNITED STATES (Capt. Stephen Decatur, Jr.)	American 44-gun frigate (actual, 54 guns)	H.M.S. MACEDONIAN (Captain Garden)	British 38-gun frigate (actual, 49 guns)
U.S.S. CONSTITUTION (Capt. William Bainbridge)	American 44-gun frigate (actual, 54 guns)	H.M.S. JAVA (Captain Lambert)	British 38-gun (formerly 40-gun) frigate (actual, 47 guns)
U.S.S. ENTERPRISE (Lieut. William Burrows)	American 12-gun schooner changed to brig-rigged sloop of war (actual, 16 guns)	H.M.S. BOXER (Captain Blythe)	British 14-gun brig-sloop of war (actual, 14 guns)
U.S.S. WASP (Mast. Comdt. Jacob Jones)	American 18-gun sloop of war (actual, 18 guns)	H.M.S. FROLIC (Captain Whinyates)	British 22-gun brig of war (actual, 22 guns)
U.S.S. HORNET (Mast. Comdt. James Lawrence)	American 18-gun sloop of war (actual, 20 guns)	H.M.S. PEACOCK (Captain Peake)	British 20-gun brig of war (actual, 20 guns)
H.M.S. SHANNON (Captain Broke)	British 38-gun frigate (actual, 52 guns)	U.S.S. CHESAPEAKE (Capt. James Lawrence)	American 36-gun frigate (actual, 49 guns)
H.M.S. PELICAN (Captain Maples)	British 21-gun heavy brig of war (actual, 21 guns)	U.S.S. ARGUS (Mast. Comdt. William H. Allen)	American 16-gun brig (actual, 20 guns)
U.S.S. PEACOCK (Mast. Comdt. Lewis Warrington)	American 20-gun sloop of war (actual, 22 guns)	H.M.S. EPERVIER (Captain Wales)	British 18-gun brig-sloop (actual, 18 guns)
U.S.S. WASP (Mast. Comdt. Johnstone Blakely)	American 20-gun sloop of war (actual, 22 guns)	H.M.S. REINDEER (Captain Manners)	British 18-gun brig-sloop (actual, 19 guns)
U.S.S. WASP (Mast. Comdt. Johnstone Blakely)	American 20-gun sloop of war (actual, 22 guns)	H.M.S. AVON (Captain Arbuthnot)	British 18-gun brig-sloop (actual, 18 guns)
U.S.S. CONSTITUTION (Capt. Charles Stewart)	American 44-gun frigate (actual, 51 guns)	H.M.S. CYANE (Captain Falcon) LEVANT (Captain Douglas)	British 34-gun frigate and 21-gun ship-sloop
U.S.S. HORNET (II) (Capt. James Biddle)	American 20-gun sloop of war (actual, 20 guns)	H.M.S. PENGUIN (Captain Dickinson)	British 20-gun ship-sloop (actual, 19 guns)
U.S.S. PEACOCK (Capt. Lewis Warrington)	American 20-gun sloop of war (actual, 22 guns)	H.M.S. NAUTILUS (Lieutenant Boyce)	British 14-gun sloop of war (actual, 14 guns)

Date of Action	Weight of Metal Broadside in Pounds		Number of Crew		Casualties					
					American			British		
	American	British	American	British	Killed	Wounded	Total	Killed	Wounded	Total
Aug. 19, 1812 41° 42′ N. 55° 48′ W.	700	597	468	263	8	6	14	21	57	78
					(an American victory; time of action, 40 min.)					
Oct. 25, 1812 Near Canary Islands	787	555	478	297	5	7	12	36	68	104
					(an American victory; time of action, 1 hr. 30 min.)					
Dec. 29, 1812 Off South American coast 13° 6′ S. 38° W.	787	568	480	426	9	25	34	60	101	161
					(an American victory; time of action, 1 hr. 55 min.)					
Sept. 5, 1812 Off Penguin Point, Maine coast	125	114	102	100	2	10	12	4	17	21
					(an American victory; time of action, 40 min.)					
Oct. 18, 1812 Off Bermuda 37° N. 65° W.	249	292	138	110	5	5	10	15	47	62
					(an American victory; time of action, 43 min.)					
Feb. 24, 1813 Off Demerara, British Guiana	279	210	142	130	1	4	5	5	33	38
					(an American victory; time of action, 11 min.)					
June 1, 1813 Off Boston, Mass.	540	550	340	330	47	99	146	24	59	83
					(a British victory; time of action, 15 min.)					
Aug. 14, 1813 Off British coast	212	274	125	116	6	17	23	2	5	7
					(a British victory; time of action, 47 min.)					
Apr. 29, 1814 Off Florida coast	309	274	160	128	0	2	2	8	15	23
					(an American victory; time of action, 45 min.)					
June 28, 1814 Near English Channel	309	204	173	118	11	15	26	25	42	67
					(an American victory; time of action, 19 min.)					
Sept. 1, 1814 Near English Channel	309	262	163	117	2	1	3	10	32	42
					(an American victory; time of action, 43 min.)					
Feb. 20, 1815 Off the Madeiras	644	754	456	313	4	10	14	35	42	77
					(an American victory; time of action, about 4 hrs. gross)					
Mar. 23, 1815	279	274	132	128	1	11	12	10	28	38
					(an American victory; time of action, 22 min.)					
June 30, 1815 Straits of Sunda	309	108	140	100	0	0	0	6	8	14

junction one with the other. The taking of the *U.S.S. President,* after she was damaged by grounding, by a strong British squadron is naturally not recorded, but it would have been proper to have included the victory of the American frigate over the 50-gun British frigate *Endymion* before the powerful *Majestic* and the large frigates *Pomone* and *Tenedos* (forming the rest of the British squadron) came up and "mobbed" the injured American vessel and took her by sheer force of numbers—both of ships and of guns. Neither is the capture of the *U.S.S. Essex* incorporated into this record, as the American frigate, unmanageable in a cove and in neutral territory, was wantonly attacked by the British frigate *Phoebe* and the 27-gun ship-sloop-of-war *Cherub* of vastly superior force, whose long-range guns gave the British the advantage in gun power (in addition to mobility) of about 9 to 1.

Out of a total of fourteen single-ship naval actions at sea during the period of about three years of actual war, the Americans won twelve (or 86 per cent) of the total, and the British were the victors in only two (or 14 per cent). During the twelve engagements in which the United States vessels of war triumphed over a British foe of corresponding type and force, the Americans suffered 144 casualties and the British 725—a ratio of 1 to 5. In the two British victories, both of which were tainted by prevailing conditions even though well fought by the enemy, the American casualties were 169, and those reported by the British (probably not truly comparative, as their policy was to minimize their losses) were 90. Accepting enemy figures for casualties and assuming that they were on the same basis as U. S. Navy statistics (which they were not), the total casualties—killed and wounded—during all the fourteen single-ship engagements of the War of 1812 were: American, 313; British, 815—a ratio of 1 to 2.6. It is surprising to note that the two British victories occurred during the summer of 1813 (June 1 and August 14) and that all the six single-ship actions prior to June 1, 1813 (the first eleven and a half months of the war), and all the six similar engagements after mid-August 1813 (a period of twenty-two and a half months) resulted in American triumphs.

United States naval vessels generally carried larger crews than the British, as sailors to man prizes were taken on board by the Americans when leaving port for a cruise, and in certain actions the complement of the American ship during the actual fight may be overstated. The practice of the British was to understate the size of the crew on their vessels. In several cases of these engagements between British and United States naval vessels, some of the crew members on the enemy ships were "impressed" Americans, and the viciousness of this system of kidnaping seamen and holding them by force in the Royal Navy was particularly evident when Americans aboard a British ship were compelled to fight against their fellow countrymen. On at least two occasions in these fourteen single-ship naval actions, orders were given by the British captain to the crew to compel the impressed Americans to work their guns and fight with vigor, and if they refused to do so or apparently loafed or held back, the Britishers were told to shoot "the damned Yankees."

During the first two years of the war, the United States frigates were more heavily armed than the British and used long 24-pounders; whereas the British maintained that their long 18-pounders were better offensive weapons, could be worked faster, and during a period of time caused greater damage to the foe. However, toward the end of the war, the British were following the American practice and equipping their new frigates as well as rearming some of their old vessels with 24-pounders. Although the United States soon showed a superiority over the British in the design and construction of vessels of war (both frigates and sloops), America was handicapped by its inability at that time to cast reliably sound, good guns and true, strong shot. United States naval vessels and privateers did not have the quality of ordnance and shot—as far as manufacture was concerned—that the enemy used; nor was the quality of American gunpowder equal to that produced in Britain and accepted by the government for naval or military use only when it conformed to the requirements of drastic specifications and met certain tests. In the first naval action of the war, the U. S. frigate *President*, firing her fourth shot, had the gun burst because of a defective casting, and the result of the accident was the killing and wounding of sixteen men, the shattering of two decks, and the disabling of other guns in the vicinity. In this engagement, defective ordnance of the frigate (i.e., self-inflicted damage) was responsible for 77 per cent of the casualties sustained. During the early years of the nation's history, the United States was fated to be handicapped by badly cast guns and at times by poor powder. (One naval action was lost by the use of powder that the British had condemned.) In the War of the Revolution, the *Bonhomme Richard* (Capt. John Paul Jones) almost lost her historic fight with the British frigate *Serapis* when, at the first broadside, two of the six 18-pounders of the lower gun-deck battery of the American cruiser burst and killed most of the men who were working around them, blew up the deck above, and put all six guns out of commission for the remainder of the engagement. These defective guns were of French make and quite probably had been condemned by the French Government before they were turned over to the Americans. In June 1815, the new American frigate *Guerrière*, firing a second broadside at the Algerian flagship in the Mediterranean, had a main-deck gun burst, shattering the deck above and causing twenty casualties, while the Americans' total loss from enemy fire during a sharp action was fourteen casualties.

Warship Building and Naval Operations on Lake Ontario

One of the prime causes leading to the American Revolution was the Quebec Act of June 1774, by which the British Government sought to make Loyalists of the French Canadians and at the same time extend their geographic and political domain by hemming in the turbulent thirteen Anglo-Saxon American colonies and confining their territory to the Atlantic seaboard and east of the Alleghenies. By this "infamous coercive act," the province of Quebec was extended south and west as well as north, and while it was said that the boundaries were set at the Ohio River in the South and the Mississippi River in the West, it was the British intent (and this is substantiated by maps of the period) to have the Quebec province extend south as far as the northern boundary of East and West Florida and include all the territory between the Alleghenies and the Mississippi. The area annexed to the province of Quebec in 1774 included all the Great Lakes and the country surrounding them; also much of northern and western New York State and the territory including and surrounding Lake Champlain, Lake George, Oneida Lake, etc. The British, following their taking of Canada from the French by military action, had sought to placate the French Roman Catholic colonists by acts of tolerance in both the religious and political realm (civil law, etc.), while making the Canadians nonreceptive to any advances on the part of the thirteen rebellious colonies looking toward co-operation and a unified North America in revolt against British tyranny.

Following the close of the War of Independence and the Peace of 1783 (which defined the northern boundary of the United States), the British encouraged the development of Canada, and the settlements along the St. Lawrence and the Great Lakes—which had been old trading posts used by the French along the main water route of western travel—became towns of importance, well populated and supplied with shipping facilities, etc. While the Canadian side of the border was being steadily developed with the years, the American side was not opened up for any settlement worthy of note until after the Jay Treaty of 1794, and when the War of 1812 commenced, the British were well established on the St. Lawrence and the Great Lakes and dominated the water route to the West. The dream of the French was to control by a chain of trading posts and forts the St. Lawrence, Great Lakes, and the Mississippi and Ohio rivers, with their tributaries, and thus form a water route, with very little portage, extending from the Gulf of the St. Lawrence to the mouth of the Mississippi on the Gulf of Mexico. Following the War of the Revolution, the British ambition was to make the old French dream of De la Salle in the 1670's come true, a naval force was maintained on the Great Lakes, and the intent (following the lines of the Quebec grant of 1774) was to extend Canadian dominion along the Lakes and western rivers down to New Orleans and the Gulf of Mexico, thus cutting off the United States from the West. The London TIMES of November 18, 1813, upbraiding the British Ministry for not being more aggressive in defending British rights and extending British authority on the continent of North America, said in reference to the "American Lakes": "They are a portion of our marine dominion, which must on no account be yielded."

Control of the waters of Lake Ontario and Lake Erie was essential to the success of any military operations on the Canadian border. Whereas both belligerents were handicapped in getting to the Great Lakes materials needed for the building and equipping of warships, the British had an outstanding advantage over the Americans in this respect, as the strong arm of the fleet of the Royal Navy reached to Montreal, and Kingston (the old French trading post of Frontenac) on the northeast shore of Lake Ontario, where the St. Lawrence leaves the lake, was a town of some 1,500 inhabitants, about 150 miles up the river from Montreal. Although the Lachine Rapids had to be passed, nevertheless, all ship fittings, anchors, cables, guns, munitions, military and naval supplies of every kind and even the framing of ships, etc., were carried in river boats from Montreal (or Quebec) to Kingston; thence to any other part of Lake Ontario and by portage around Niagara Falls to any part of the Great Lakes.

On the American side, there were no passable or even defined roads in the "vast wilderness" separating Lake Erie from sources of supply of men, equipment, stores, etc., and water transport had to be used. The route developed to Lake Ontario was from the Hudson River up the Mohawk River; thence portage to Oneida Lake and down the Oswego River to Lake Ontario. In 1812, Sackett's Harbor, at the east end of the lake and near the St. Lawrence, and the British town of Kingston consisted of "a few huts and a blockhouse," and the town of Oswego had "only twenty-five houses." The overland route to Lake Erie originated farther south and was over the Cumberland Trail to Pittsburgh, then up the Allegheny River and over some sixteen miles of poor road to Presqu'isle (Erie), where a naval base was built. As Alden and Westcott, in THE UNITED STATES NAVY, state: "Over these wilderness trails and water-ways passed the troops and seamen, the gangs of shipwrights and riggers, the artillery and munitions of all varieties, for the building, equipping, and manning of our lake squadrons. Only the timber for construction was available in unlimited quantities on the shores."

From the standpoint of strategy, if America had concentrated on destroying Kingston and controlling shipments entering Lake Ontario from the St. Lawrence, the British military activity on the Great Lakes and in the West would have been stopped at its source. We are told, however, that Detroit was decided upon as a main base because (1) it was west of Niagara Falls and water transport from Detroit could reach any part of Lakes Erie and Huron, also Michigan and Superior; (2) war sentiment was strong in the West and forces were available for invasion, whereas "in the eastern border states it was lukewarm or even opposed"; (3) the Indians of the West were a menace and it was feared (with justification) that the British would seek to win the Indians as allies in the fight against the Americans. Nevertheless, Mahan says that centering on Detroit as a base of operations was much like starting to cut down a tree from the top rather than at some point much farther down the trunk. The politically appointed and incompetent General Hull, with an unorganized, undisciplined, and untrained force, crossed the border and issued a grandiose proclamation which offered the Canadians a choice between "peace, liberty and security" (if they became part of the United States) and "slavery and destruction." But the British were alert. Brock captured Fort Mackinac at the head of Lake Huron before its little garrison knew that war had been declared, and on August 16 (three days before the *Constitution* took the *Guerrière* in the first important naval action of the war), Detroit surrendered to him, without striking a blow, to the mortification of all patriotic Americans.

Sensing the importance of naval control of the Lakes, President Madison appointed Capt. Isaac Chauncey, a naval commander then on duty at the New York navy yard, to the general navy command on the Great Lakes. Sending supplies and workmen ahead, Chauncey arrived at Sackett's Harbor on October 7, 1812, where lay the only American naval vessel on the Lakes—the brig *Oneida,* built in 1809, carrying 16 24-pound carronades but no long guns. Two single-deck ships, the *Madison* (24 short 32-pounders) and the *General Pike* (15 long 24-pounders), were laid down at Sackett's Harbor during the winter of 1812-1813, but during that period the British also commenced the construction of two warships on Lake Ontario, one at York (Toronto) at the west end of the lake and the other at Kingston. In May 1813, Capt. Sir James Lucas Yeo, 4 commanders, and 24 midshipmen of the Royal Navy, with 450 "picked seamen," arrived on Lake Ontario, having been selected and sent out by the British Government to man the naval squadron on the Canadian lakes. At this time, the British force on Lake Ontario consisted of ten vessels mounting 140 guns, besides gunboats, the most powerful being the ship *General Wolfe* (24 guns), the ship *Royal George* (22 guns), the schooner *Prince Regent* (16 guns), the ship *Earl of Moira* (14 guns), the brig *Melville* (14 guns), the schooner *Duke of Gloucester* (14 guns), and the two 12-gun schooners *Simcoe* and *Sidney Smith.* The operations on Lake Ontario were generally unsatisfactory and indecisive. Chauncey did not pursue an intelligent, aggressive policy, and Yeo—with sturdier ships and better guns—was cautious and preferred generally to wage a defensive war. An American superiority in long guns was offset by the fact that most of them were mounted on "top-heavy, cranky and slow small schooners." Chauncey sought to fight at long range and in light breezes; whereas the British ship, armed with carronades, was at her best at close quarters and in strong winds. It has been said: "In view of the tempers and policies of the two commanders, the results were as might be foreseen. When one was ready to fight, the other was ready to withdraw." The American and British squadrons were in contact three times during August and September 1813, and on the night after the first encounter, two of the American schooners proved their instability and unseaworthiness when they went down during a sudden gale. During the last engagement of the season (September 28), the British flagship *General Wolfe* was badly battered by the long guns of the American armed ship *General Pike,* but although the "*Wolfe*" lost her main- and mizzen-topmasts and her main yard, she escaped capture by being put "dead before the wind."

There was miserable co-operation between the army and navy on the Lakes during 1813, and a joint operation of land and naval forces against Kingston, as advocated by Commodore Chauncey, was unfortunately not undertaken. General Wilkinson, with some eleven thousand troops, let a golden opportunity to win control of Kingston and the entrance to the St. Lawrence pass unimproved. But Chauncey himself, in addition to not being outstanding either as a naval commander or as a strategist, does not have a good record as a co-operator with the army; for when in the following year General Brown appealed to Chauncey for naval assistance on the Niagara frontier and wrote, "For God's sake, let me see you. Sir James [the British naval commander at Kingston] will not fight," Chauncey replied, "We are intended to seek and fight the enemy's fleet and I shall not be diverted from my efforts by any sinister attempt to render us subordinate to, or an appendage of, the army." The "sinister attempt" was, after all, merely an effort on Brown's part to have Chauncey "co-operate intelligently in a well-concerted scheme of invasion." Jealousy between the army and navy dates back to the early days of the republic. In the Congressional act of 1789 establishing the War Department, the secretary of war was given jurisdiction over the naval as well as land military forces, and it was not until April 30, 1798, that the Navy Department was established; but still the secretary of the army continued to be known as the secretary of war, and faulty designations, although purely technical, have not contributed to essential harmony.

There was much warship building on Lake Ontario during the war, and the demand was constantly for larger and more powerful vessels. In the summer of 1814, the following sizable warships constituted the squadrons of the two belligerent nations:

Commodore Chauncey's American Naval Vessels—Total of Eight Vessels Mounting 228 Guns

Name	Type	Number of Guns	Commander
SUPERIOR	Frigate	58	Lieutenant Elton
MOHAWK	Frigate	42	Captain Jones
GENERAL PIKE	Ship	28	Master Commandant Crane
MADISON	Ship	24	Master Commandant Trenchard
JEFFERSON	Brig	22	Master Commandant Ridgeley
JONES	Brig	22	Master Commandant Woolsey
SYLPH	Brig	16	Master Commandant Elliott
ONEIDA	Brig	16	Lieutenant Brown

Commodore Yeo's British Naval Vessels—Total of Eight Vessels Mounting 208 Guns

Name	Type	Number of Guns	Commander
PRINCE REGENT	Frigate	58	Captain O'Conner
PRINCESS CHARLOTTE	Frigate	42	Captain Mulcaster
MONTREAL (GENERAL WOLFE)	Ship	24	Captain Downie
NIAGARA (ROYAL GEORGE)	Ship	22	Captain Popham
CHARWELL (EARL OF MOIRA)	Ship	16	Lieutenant Dobbs
NETLEY (BERESFORD)	Brig	16	Lieutenant Owens
STAR (MELVILLE)	Brig	16	Captain Clover
MAGNET (SIDNEY SMITH)	Brig	14	——

The British, with their new construction finished first, controlled Lake Ontario until the end of July, raiding Oswego and blockading Sackett's Harbor. When the American squadron got to sea with the frigates *Superior* and *Mohawk,* it captured the *Magnet* and blockaded Yeo's British fleet in Kingston for 45 days; but as the mammoth H.M.S. *St. Lawrence,* a 112-gun ship of the line, was nearing completion, the American squadron retired, and in November the ice closed navigation. The building rivalry between the two nations was at its height when peace was declared. The Americans had two huge three-deckers on the stocks, and although they were never launched, one of them, the *New Orleans,* was carried on the U.S. Navy List for many long years. The war on Lake Ontario was primarily one of building for strength to overwhelm the enemy by psychology, it would seem, rather than by vigorous and aggressive warfare. In the fighting of the ships, the record of neither the American nor the British squadron on Lake Ontario is particularly creditable. Both had successes and suffered losses, but neither nation won a naval victory of importance.

The frenzy for building warships of great size and power which developed in the race for supremacy in aggressive naval armaments on Lake Ontario in 1813 and 1814 did result in a sensible mutual post-war agreement between British Canada and the United States to limit the number, size, and gun power of armed vessels on the Great Lakes to a few small single-gun revenue cutters. The Rush-Bagot Agreement of 1817 limited each nation to the ownership and use of a single vessel of not more than 100 tons armed with a single gun no larger than an 18-pounder on Lake Ontario, with two vessels of no greater size or power for use on the string of Upper Lakes; the waters of Lake Champlain were likewise restricted by this agreement to the use of one armed vessel of similar size and armament.

Naval Victory on Lake Erie

Lieutenant Elliott was sent by Capt. Isaac Chauncey to Lake Erie, and upon Elliott's arrival at Buffalo in September 1812, he purchased a few small schooners, arming and refitting them at a temporary base at Black Rock on the Niagara River. The only armed American vessel on Lake Erie, the brig *Adams* (6 guns), had fallen into British hands at the time of General Hull's surrender at Detroit, and she had been renamed the *Detroit.* This vessel of war, with sixty men aboard, accompanied by the armed brig *Caledonia* (2 guns; twelve men), reached Fort Erie opposite Black Rock on October 7, with orders to capture or destroy the American vessels that were being armed and prepared for naval service. Lieutenant Elliott, with fifty seamen and a number of volunteers from the army, made a surprise night attack in small boats on the two British vessels, capturing them, and succeeded in moving the *Caledonia* safely across to the American side; but the *Detroit* grounded on Squaw Island and was burned after the removal of her guns and most of her stores. The *Caledonia* was found to have a rich cargo of furs aboard (said to have been valued at $150,000). The Americans, with only five casualties (one killed; four wounded), in addition to capturing the two British vessels sent against them, inflicted relatively heavy casualties on the enemy, took fifty prisoners, and recaptured some forty men of General Hull's army. In July 1813, Congress recognized Elliott's achievement by presenting him with a sword and promotion to the rank of master commandant.

On February 17, 1813, Mast. Comdt. Oliver Hazard Perry, then in charge of a flotilla of gunboats at Newport, R.I., received orders by the Navy Department to select 150 men from his command who were adapted for service on the Great Lakes and report to Captain Chauncey at Sackett's Harbor. By the capture of Detroit and a vast tract of western land (then known as the "Territory of Michigan," but now comprising a number of states), the British were in control of Lake Erie and the Upper Lakes and, it has been said, "were in a position to carry out their plans of extending the Dominion of Canada along the Ohio and Mississippi rivers down to the Gulf, so as to cut the United States from the West. To Master Commandant Perry (a young man of twenty-six) "was assigned the herculean task of regaining control of Lake Erie, which was the last step necessary to the recovery of the lost ground." On March 24, Perry was at Buffalo and, traveling over the ice, reached Presqu'isle (an old fortified trading post established by the French in 1749, but now known as Erie, Pa.), which Washington had decided to make a naval base. Work had begun on the construction of two gunboats, the schooner *Scorpion,* and two 20-gun brigs, with Noah Brown, a most competent shipwright from New York, in charge. These brigs, named the *Niagara* and the *Lawrence* (the latter after Captain Lawrence of the ill-fated frigate *Chesapeake,* captured by H.M.S. *Shannon* off Boston on June 1, 1813), were 110 ft. long over-all and 29 ft. beam and were built of "white and black oak and chestnut frames," with oak outside planking and decks of pine. "Many trees," we are told, "found their places in these vessels on the same day they were felled in the forest."

The base used by Lieutenant Elliott at Black Rock on the Niagara River had been ill chosen, for to enter Lake Erie vessels had to buck a four-knot current and this in range of the guns of the Canadian Fort Erie; but following the capture of Fort George by the Americans, the Niagara River was open. It became possible (after six days of hard work by 200 men and many yoke of oxen) to warp the Elliott squadron consisting of the brig *Caledonia,* the schooners *Somers, Tigress,* and *Ohio,* and the sloop *Trippe* into the Lake, so that they could make contact with and reinforce the new squadron building at Presqu'isle. On July 10, Perry had sufficient officers and men to man only one ship, and many of these were on the sick list while a strong British squadron maintained a rigorous blockade of the port. Perry pleaded with naval and army authorities for men, with but little success. At the end of the month, there were 300 men at hand to man ten vessels, and owing to the very low water in the Lake, the two brigs could not be got over the bar without taking off the guns and heavy weights and lightering them—and this in the face of the British squadron. Taking advantage of a two-day absence of the blockading fleet, Perry, by heroic efforts, got the *Lawrence* and *Niagara* over the bar, and by the time the British squadron reappeared Captain Barclay, its commander, thought the American force too imposing for him to tackle, so he made for his base at Malden at the northwest "head" of the Lake to hurry the completion of the new British 19-gun warship *Detroit,* which was being armed mostly by long guns taken from the shore fortifications.

On August 9, 1813, Master Commandant Elliott reached Presqu'isle with 100 men and was placed in command of the *Niagara,* while Perry made her sister vessel, the *Lawrence,* his flagship. On August 12, the American squadron put to sea, and the value of a naval force on the Lake was quickly made evident; for by September supplies at the British base ran far too low for comfort, and Barclay, despite the fact that his preparations were not entirely completed, felt obliged to fight to open up his lines of communication and regain mastery of the Lake. On September 10, the British squadron left Malden and quickly contacted and engaged the Americans in the waters between Fort Malden and Put-in Bay. The British squadron consisted of the flagship *Detroit* (19 guns), the ship *Queen Charlotte* (17 guns), the brig *Lady Prevost* (13 guns), the brig *Hunter* (10 guns), the sloop *Little Belt* (3 guns), and the schooner *Chippewa* (1 gun)—six vessels in all mounting 63 guns and manned by 502 men and boys, of whom 150 were from the Royal Navy, 80 were Canadian sailors, and 240 were soldiers (mostly regulars). Historian Hughes tells us that Captain Barclay, the British commander, was "a man of no ordinary fame"; he had fought under Nelson in the Napoleonic wars and was a hero of Trafalgar, where he was severely wounded. The American squadron was made up of the brigs *Lawrence* and *Niagara,* each with 20 guns (only two of which were long guns), the brig *Caledonia* (3 guns), the schooner *Ariel* (4 guns), the schooners *Scorpion* and *Somers,* each with 2 guns, the *Tigress* and *Porcupine,* each mounting 1 gun, and the sloop *Trippe* (1 gun)—nine vessels in all mounting 54 guns and manned by 490 men, of whom 125 were from the regular navy. (About a quarter of the men were said to be "raw recruits," and about the same number were Negroes.) Maclay says: "One hundred and sixteen during the action were unfit for duty, as they were suffering from cholera morbus and lake fever."

During this action, the British had four vessels, each mounting more than 10 guns; whereas the Americans had but two. Although the Americans had 9 (or 14 per cent) fewer guns than the British, they fired a heavier broadside than the enemy. The American fighting power was centered in the *Lawrence* and *Niagara,* but to have their guns effective, they had to fight at close quarters, as 18 of the 20 guns in each of these vessels were carronades. Perry, in the *Lawrence,* fought aggressively and with rare courage, but the actions of Elliott in the *Niagara* are difficult to account for, and the holding-back of this brig from coming to grips with the four powerful British vessels that were concentrating their fire on the *Lawrence* came close to causing the defeat of the American forces. For a long time, the *Lawrence, Ariel,* and *Scorpion,* which, combined, had only 7 guns firing 104 lbs. of metal in effective range, were being opposed by British vessels with 32 long guns throwing 306 lbs. of metal. For an hour, the *Lawrence* fought the *Detroit* and the *Hunter,* and then the *Queen Charlotte* and later the *Lady Prevost* concentrated their fire on her, while the powerful *Niagara* kept behind the weak and slow *Caledonia* and out of the fray. Whereas the *Niagara,* just before the action, was within hailing distance of the *Lawrence,* she had been allowed to drop an inexcusably great distance astern. Whatever Elliott's motives may have been, "whether pique or a kind of obstinate inertia," as Mahan says, for two hours the *Niagara* "remained at such a distance as to render useless all her battery [of 20 guns] except her two long guns." The British fire gradually reduced the American flagship to a wreck, and one by one her guns were disabled until she was defenseless. Although fighting under the *Lawrence* battle flag bearing the inscription, "Don't give up the ship," Perry left the helpless vessel after she had borne the brunt of the battle for over two and three-quarters hours, and as the *Niagara,* at last, came near, he boarded her by means of a small boat, with four sailors at the oars, and transferred his flag to the uninjured sister of the *Lawrence.* In the official report of the action by Captain Barclay, he says, "The American commander, seeing that as yet the day was against him, made a noble effort to regain it."

Upon reaching the *Niagara,* Perry sent Elliott to bring up the American schooners in the rear, while he took his fresh ship against the enemy's van. At 2:45 p.m., the *Queen Charlotte,* having made a futile attempt to board the *Niagara,* fouled the *Detroit,* and the *Niagara,* setting the signal for close action, punished the two British ships dreadfully and followed up with a devastating fire at close quarters on both the *Lady Prevost* and the *Hunter.* The other vessels of the American squadron followed the example of the flagship, and at 3:00 p.m. (after the action had lasted three and a quarter hours), the *Detroit, Queen Charlotte, Lady Prevost,* and *Hunter* struck their colors. The *Little Belt* and *Chippewa,* which tried to escape, were overtaken and captured. Perry's dispatch announcing the victory read, "We have met the enemy and they are ours—two ships, two brigs, one schooner and one sloop."

The formal surrender of the British squadron took place on the battle-scarred *Lawrence,* and the contribution of the various individual vessels comprising the American squadron is indicated in a great measure by the list of the casualties, which Perry reported as follows:

Name of Vessel	Killed	Wounded	Total Casualties	Name of Vessel	Killed	Wounded	Total Casualties
LAWRENCE	22	61	83	SCORPION	2	—	2
NIAGARA	2	25	27	CALEDONIA	—	3	3
ARIEL	1	3	4	SOMERS and TRIPPE	—	2 each	2 each

The total was 123 casualties—27 killed and 96 wounded. Captain Barclay reported the British loss as 41 killed and 94 wounded. During this engagement, two of the guns in the American brigs, two guns of the *Caledonia,* and one gun of the *Ariel* burst, and all five pieces of defective artillery were long guns.

The British had massed troops, with a large force of Indians under Tecumseh, at Malden in readiness to cross the frontier and devastate United States territory as soon as the British squadron under Commander Barclay had obtained control of Lake Erie, but Perry's victory completely upset these plans. The defeat compelled the British to evacuate Detroit and all American territory in that area. Perry, on September 23, conveyed 1,200 troops up the Lake and took possession of Malden. On September 27, Detroit was occupied, and what the land forces under General Hull lost in August 1812 was recovered by the navy in September 1813. On October 2, Elliott ascended the River Thames, with the *Scorpion, Porcupine,* and *Tigress.* In the battle that ensued, the Indians lost their leader, Tecumseh, and the danger of Indian ravages in United States territory was ended. By the Battle of Lake Erie, the security of the West was won. Congress gave recognition to Perry's courageous naval triumph with the award of a gold medal and by promoting him to the rank of captain, the commission bearing the date of his great victory. The sum of $225,000 was also voted to the captors of the British squadron as prize money, and when it was found that of this sum Captain Chauncey, as the ranking naval officer on the Great Lakes, would receive $12,750 and Perry and Elliott (both master commandants at the time of the action) would receive the same sum, $7,140 each, Congress voted Captain Perry an additional $5,000. Master Commandant Elliott retrieved his reputation to some degree by his victory on the Thames River (and he was credited with a brave and successful raid in October 1813, for which Congress gave him due recognition); but in the face of the record of the Battle of Lake Erie, it is amazing to note that Congress awarded gold medals to commemorate the naval victory to both Captain Perry and Master Commandant Elliott and that, if the division of prize money had been made strictly in accordance with the regulations of the Navy Department, Perry, who was responsible for the outcome of the engagement, would have received no more recognition for his brilliant and courageous work than Elliott, whose lack of aggression and seemingly of interest was almost responsible for the defeat of the American squadron. On October 25, 1813, Perry resigned from his command on Lake Erie and was appointed to the command of the 44-gun frigate *Java,* then being fitted out at Baltimore.

Arnold's Naval Operations on Lake Champlain during the Revolutionary War

During the War of the Revolution, Gen. Benedict Arnold upset British strategy by naval operations on Lake Champlain in 1776 and prevented the enemy from getting control of the important waters of the lake that virtually connects the St. Lawrence and Hudson rivers until so late in the season that the contemplated plan for Burgoyne (then in Canada) to join forces with Howe (then at New York) had to be postponed for a year. In 1777, when the advance from the north was resumed, Burgoyne, although he succeeded in taking Crown Point and Ticonderoga, did not make contact with Howe (who had gone to the Chesapeake and Delaware) and was defeated at Saratoga in a battle which was the turning point in the War of Independence, as it gave the colonies hope and confidence and induced France to enter the struggle on the side of the Americans. Arnold, no matter what may be said of his later acts, was in 1775-1777 an exceedingly able officer of vision, courage, and ability. His land operations, with New England volunteers, on Lake Champlain and his assaults on British Canadian citadels were highly creditable, and in 1775, a year before he was appointed (in July 1776) to command American naval forces on Lake Champlain and Lake George, Arnold had stressed the importance of a strong naval force on these lakes. He urged Congress "to insure control of the waterway" by building a strong fleet of vessels, which, he affirmed, to be effective, should be "an overwhelming force," as the British were cognizant of the importance of the control of the Great Lakes, were decidedly marine-minded, and were capable of putting a strong naval force on the Lakes in 1776. Arnold recommended sending three hundred carpenters to the Lakes to construct twenty or thirty well-armed galleys and gondolas and "a 36-gun frigate."

Arnold's advice was followed only in part, and an inadequate, light, and poorly built squadron—armed with all sizes and types of guns—was eventually got together by building and purchase, but there was no real warship among the vessels. The American marine force consisted of fifteen vessels all told, and they were crude craft, unfitted and, we are told, "never intended" for serious fighting. Two (the *Royal Savage* of 12 guns and the *Revenge* of 8 guns) were classed as armed schooners, and the only other sizable sail-propelled vessel was the sloop *Enterprise* of 10 guns. Four vessels were described as armed galleys and eight as armed gondolas. The complement of the fleet was reported at 700 men, most of whom were drafted from the regiments at Ticonderoga and "unfitted for water service." General Arnold, writing of the men sent to fight naval actions on poor, small, and weak vessels, said: "They are a miserable set; indeed the men on board the fleet in general are not equal to half their number of good men. . . . We have a wretched, motley crew. . . . The marines are the refuse of every regiment, and the seamen, few of them were ever wet with salt water."

The British squadron on Lake Champlain, commanded by Captain Pringle, consisted of much superior vessels, better equipped and manned. The H.M.S. *Inflexible* (said to have been originally built in England, taken apart and reassembled on the Lake) was an ocean-going ship-rigged vessel of 180 tons (Maclay says 300 tons), armed with 18 12-pounder guns and manned by sailors of the Royal Navy under Lieutenant Schank. This vessel alone was sufficient to blast the entire American flotilla out of the water and, in doing so, keep out of the way of its relatively puny guns. It was a vessel such as the *Inflexible* that Arnold had urged Congress to build, and he said that one such vessel with a fleet of rowing galleys, with auxiliary sail to carry troops, would be enough to ensure victory. Two other British vessels were real warships, built at Quebec and taken apart and reconstructed at St. Johns for service on the Lake; these were the flagship, the 14-gun schooner *Maria* (Lieutenant Starke) and the 12-gun schooner *Carleton* (Lieutenant Dacres). Another sizable vessel of power was the 14-gun radeau *Thunderer* (Lieutenant Scott), and in addition to these naval vessels and a 7-gun gondola, the fleet included twenty-four gunboats, each carrying a big brass gun, which made twenty-nine armed vessels in all, carrying 89 guns, of which four vessels mounting 58 guns were real naval vessels. The entire fleet had been built under the immediate direction of British naval officers. Schomberg tells us in HISTORY OF THE BRITISH NAVY: "This flotilla was manned by a detachment of seamen from the king's ships and transports at Quebec. Their numbers amounted to eight officers, nineteen petty officers and six hundred and seventy picked seamen." Of these men, 474 were taken from eleven seagoing ships of the Royal Navy, 214 from British transports, and 9 were accepted Canadian volunteers. Besides the naval force, the British expedition had "a detachment of regular troops" and "several hundred Indian allies."

Arnold swept Lake Champlain with his improvised naval force until the British were ready to appear in power, but early in October 1776, they were in a position to bring 42 real guns to bear upon their opponents' 32, and the disproportion was far greater than such figures indicate. On October 11, the battle of Valcour Island was fought, with the Americans losing a schooner and a gondola; the British lost a gunboat and had the *Carleton* "reduced to helplessness" when the *Inflexible* got within range at dusk, and Arnold made a skillful retreat from a superior punishing force. The Americans lost ten out of their fifteen vessels and some "eighty odd" men in a three-day battle. The British captured two American vessels and took some prisoners, including General Waterbury, and their casualties were stated as "about forty" in Captain Pringle's official report.

Notwithstanding the defeat of Arnold's "mongrel flotilla" on Lake Champlain, the result of the American naval activities on the Lake was highly advantageous to the cause of the colonists. In spite of the inferior quality of Arnold's vessels, their heterogeneous equipment (one little craft had guns of four different calibers, which caused great confusion in loading), and their inexperienced and motley crews, the Americans proved to the British that they "knew how to fight," and they were admittedly "very well led." Sir George Carleton, in command of the land forces, could not reach Crown Point until it had been abandoned and destroyed; he reached Ticonderoga, but as winter was coming on, he turned back and took his forces to winter quarters in Canada. A truly "contemptible little navy" on Lake Champlain, although defeated by a vastly superior British naval force, contributed much to the ultimate winning by the Americans of the War of the Revolution.

The Battle of Lake Champlain—September 1814

Lake Champlain, which was an important line of communication and battle area during the War of the Revolution, played but little part in the war with Britain during 1812 and 1813 because of the concentration of effort on both sides of the Canadian border in the West and "the indifference in the eastern area toward 'Mr. Madison's war.'" The Richelieu River, Lake Champlain, and the Hudson River afforded a vital avenue and an almost uninterrupted water highway from Montreal (or Quebec) on the St. Lawrence to New York at the mouth of the Hudson, but so little significance was attached to this watercourse in the early part of the war that no attempt was made by the United States to control it. It was not until the first abdication of Napoleon (which permitted the sending of a large body of British Continental troops to America) and the loss of British control of Lake Erie and the Upper Lakes (resulting from Perry's great naval victory of September 1813) that Britain determined to invade the United States from the north and south simultaneously—striking southward via the Richelieu, Lake Champlain, and the Hudson and northward via the Mississippi. Britain was particularly anxious to establish a firm foothold in the northeastern territory of the United States before entering into any peace negotiations, and it did have hopes that its army would reach Albany and possibly New York.

In 1812 the Americans are said to have had three armed vessels on Lake Champlain to Britain's two, but on June 3, 1813, the two best American vessels, the sloops *Growler* and *Eagle* (each carrying 10 short 12-pounders and fifty men), were caught in a swift current in narrow waters and captured by armed forces when chasing a British armed vessel and venturing too close to the British base at Isle-aux-Noix. This disaster to the American naval force gave temporary control of the waters to the enemy, but both sides promptly commenced to build armed vessels on the Lake. The importance to the British mind of England's planned invasion of the United States from the north is proved by the fact that Britain's greatest military hero, the Duke of Wellington, was requested to take the Canadian command, and it is significant that his refusal was based largely on the ground "that control of water communications" was essential to the success of the enterprise and that such British control did not exist at the time nor was it assured.

To attempt to recover and hold control of Lake Champlain, Mast. Comdt. Thomas Macdonough was ordered to construct the armed ship *Saratoga* (26 guns) and the schooner (or brig) *Eagle* of 20 guns and to convert the steamboat *Ticonderoga* into a sailing vessel pierced for 17 guns. This work was evidently hurried forward, for it is reported that "the *Eagle* was launched nineteen days after her keel was laid." Before the American squadron could get to sea, a British flotilla on May 14, 1814, under Captain Pring, consisting of eight galleys and a bomb sloop, bombarded Otter Creek, where the vessels had been built and were being equipped for service. The attack was driven off, as it had been anticipated, and Macdonough had landed guns from his vessels and formed them into a strong land battery. When completed, the

American squadron proceeded to and anchored off Plattsburg. Upon the arrival of Capt. George Downie, a veteran commander of the Royal Navy, the armed marine forces of the two belligerents on Lake Champlain were as follows:

AMERICAN NAVAL SQUADRON			BRITISH NAVAL SQUADRON		
Name of Vessel	Number of Guns	Commander	Name of Vessel	Number of Guns	Commander
SARATOGA (flagship)	26	Master Commandant Macdonough	CONFIANCE (flagship)	37	Captain Downie
			LINNET	16	Captain Pring
EAGLE	20	Lieutenant Henley	CHUBB (formerly U.S.S. EAGLE)	11	Lieutenant McGhie
TICONDEROGA	17	Lieutenant Cassin			
PREBLE	7	Lieutenant Budd	FINCH (formerly U.S.S. GROWLER)	11	Lieutenant Hicks
10 galleys	16				
			12 gunboats	17	
Total of 14 vessels mounting 86 guns (45 long and 41 short); crew of 882 men.			Total of 16 vessels mounting 92 guns (60 long and 32 short); crew of 937 men.		

The total weight of broadside of each of the two squadrons was the same, but Alden and Westcott, in THE UNITED STATES NAVY, say that the weight of metal of the long guns was 480 lbs. for the American vessels and 660 lbs. for the British (or 37.5 per cent more). Of the 86 guns on the American squadron, 52.3 per cent were long guns; whereas of the 92 guns mounted on the British vessels, 65.2 per cent were long guns. By far the most powerful war vessel on the Lake was the 37-gun British frigate *Confiance,* and she mounted 31 long 24-pounders; while the largest and heaviest American ship, the *Saratoga,* carried only 8 such long guns of that caliber. The *Confiance* was believed by the British to be so much more powerful than any other war vessel on the Lake as to be impregnable and capable of blasting any American vessel out of the water. The first broadside that she fired was at the U.S. flagship *Saratoga,* and it was so devastating that it was reported "to have killed or wounded one-fifth of the *Saratoga's* crew." The British held off their attack on the American squadron until their powerful new frigate was completed, and it is said, "Shipwrights were still busy on the *Confiance* until two hours before the action and the British sailors aboard had hardly fired the guns."

The direction of British operations in the invasion of United States territory from the north was in the hands of Sir George Prevost, governor general of Canada, "an officer of good past record." In August of 1814, he had a well-organized and equipped force of 12,000 men (largely composed of British regulars and veterans), which crossed the frontier and moved leisurely down Lake Champlain toward Plattsburg, off of which the American squadron had taken up battle positions between Cumberland Head and Crab Island. To oppose the British army in land fighting, there were 3,000 Americans under Brigadier General Alexander Macomb; this force included New York and Vermont militia and "Izard's Invalids." By one of those "singularly fatuous moves frequent in our land operations" throughout the War of 1812, a force of 4,000 American troops had been sent from the Lake Champlain theater on a long march westward to Sackett's Harbor on Lake Ontario (where they were not needed) just prior to the time of Prevost's advance. American strategy, with the training and utilization of land forces and an over-all command affecting both army and navy and bringing them into effective co-operation one with the other, was "miserable and deplorably bad," particularly in the northern territory throughout most of the War of 1812.

Captain George Downie, R.N., did not arrive to take command of the British naval forces in the Lake Champlain area until September 2, 1814, but notwithstanding Prevost's "importunate demands" and criticism of naval delay, Downie moved fast and well manned and equipped the British lake squadron, taking whatever force and material he needed from the fleet of the Royal Navy in the St. Lawrence. Of the four prime vessels of the British squadron that moved south to capture or destroy the American force at Plattsburg, two were United States war vessels captured in 1813 (and renamed *Chubb* and *Finch*), but the brig-of-war *Linnet* (mounting 16 long 12-pounders) and the frigate *Confiance* were new and well-built vessels.

Soon after 8:00 a.m. of September 11, 1814, the British and American squadrons made contact with each other, and it was well that Macdonough had chosen his defensive position and made his preparations with such skill. Throughout the battle, fighting on the *Saratoga*, at times against terrific odds, he utilized certain advantages of position most cleverly and exhibited splendid courage and resourcefulness. Downie's flagship, the *Confiance*, anchored about five hundred yards off from the *Saratoga* and went into action about 9:00 a.m., when she discharged a full double-shotted broadside into the American flagship, and "the effect of the sixteen long 24-pounders, deliberately aimed in smooth water, at point-blank range" was terrific. The shock threw many of the *Saratoga's* men prostrate on the deck, and forty were killed or wounded, among those killed being First Lieutenant Gamble. The Americans did not quit, but worked their guns while being subjected to a murderous fire. At 9:15 a.m., a shot from the *Saratoga* struck the muzzle of one of the *Confiance's* punishing 24-pounders, hurled the gun out of its carriage, and killed Captain Downie. The British *Chubb* (the old U.S.S. *Eagle*), after being severely dealt with by the new *Eagle*, struck to the *Saratoga* early in the fight, and her sister, the *Finch*, crippled by the *Ticonderoga*, drifted over to Crab Island, where she surrendered when fired upon by a gun manned by the invalids of the hospital. The British gunboats, in the meantime, had forced the small 7-gun sloop *Preble* to cut her moorings and run inshore, where she anchored, and she did not again get into the fight. The *Ticonderoga*, without much support from the light American galleys, had a hard time with the British gunboats, but succeeded in beating off concerted attacks and attempts at boarding. The *Eagle* changed her position about 10:15 a.m. to one near the *Saratoga*, which by this time had but few guns on her engaged side that could be used. By means of prearranged plans, with anchors, lines, and capstan, Macdonough now calmly turned his vessel around and brought an entire new broadside to bear on the enemy, and this maneuver turned the tide of battle. At 10:30, Lieutenant Robertson (who had taken command of the *Confiance* at the death of Captain Downie and had fought his ship well) struck his colors, and fifteen minutes later the *Saratoga* forced the surrender of the *Linnet*, which, under Captain Pring, had put up a magnificent fight throughout the entire engagement. The British gunboats had been well handled and were superior in power to the American galleys, but when they saw that all the four main vessels of the British squadron had struck, they made all sail and escaped, as there was not a vessel then under American colors in a physical condition to pursue them.

In this sanguinary naval action, which occupied about two and a half hours, the losses were heavy, particularly on the two flagships. The American casualties were 110, of whom 52 were killed and 58 wounded. Captain Pring was evidently in no position to state accurately the British losses, and his official report of 57 killed and 92 wounded is known to be in error. The American figures of the enemy's loss, collected from the observation of the victors, the statements of British officers, and various lists found on board the captured vessels themselves as compiled by Macdonough's purser, Beale, two days after the battle, place the British loss at 84 killed, 110 wounded, and 367 prisoners—and presumably this does not include the casualties in the twelve British gunboats. The *Saratoga* sustained 52 per cent of the American casualties and was badly damaged. She received 55 round shot in her hull and was twice set on fire by hot shot from the *Confiance*. The *Eagle* had 33 casualties (13 killed; 20 wounded) and received 39 round shot in the hull and 4 heavy shot in her lower masts, while "her sides were peppered with grape." The British flagship, considering her strength and power, fared far worse than any other ship, and she was reported as "demolished." Midshipman Lee of the *Confiance* wrote:

The havoc on both sides was dreadful. I don't think that there are more than five of our men out of three hundred but what are killed or wounded. Never was a shower of hail so thick as the shot whistling about our ears. . . . There is one of our marines who was in the Trafalgar action with Lord Nelson, who says it was a mere flea bite in comparison with this. . . . Our masts, yards and sails were so shattered that one looked like so many bunches of matches and the other like a bundle of rags.

One hundred and five round shot were counted in the side of the *Confiance,* and during the latter part of the battle she had to be listed heavily to starboard to keep her from sinking. Before the *Saratoga* brought her fresh port broadside into play, the British flagship had only four guns that she could fire at the enemy without turning around, and this she was unable to do.

Master Commandant Macdonough, whose courage and gallantry throughout the action had buoyed up the spirits of his men, whose farsightedness and brilliant planning had made the outcome possible, and "whose sagacity and skill had turned defeat into victory," sent the following modest and characteristic dispatch to the secretary of the navy: "The Almighty has been pleased to grant us a signal victory on Lake Champlain in the capture of one frigate, one brig and two sloops of war of the enemy." Four British naval sail carrying 75 guns engaged four American armed vessels of generally similar type mounting 70 guns, and all the British ships were captured. Macdonough was promoted to the rank of captain, and New York State granted him a thousand acres of land on Cumberland Head "overlooking the scene of his splendid victory." For his well-considered preparations and courageous hard-fought battle against experienced forces of somewhat greater aggregate strength (one vessel of which was a relatively formidable big-gun frigate that alone could have been expected, in open waters, to settle the outcome), Macdonough stands, in the opinion of Theodore Roosevelt (THE NAVAL WAR OF 1812), as "down to the time of our Civil War . . . the greatest figure in our naval history."

Sir George Prevost's actions with his powerful land forces throughout this naval engagement were surprising and suggested an overcautiousness and a disinclination toward aggressive action or even a reasonable effort to support the British naval vessels under Captain Downie. Prevost advanced to the Saranac River and, it has been said, "sat down to await the results of the naval battle." At the time of his death in 1816, Prevost was under court-martial charges for lack of support to the British naval squadron. However, the British Army did make an assault on the American lines and was repulsed with loss. Upon hearing of Downie's defeat, Prevost well knew that the Americans were in full control of Lake Champlain and that his further movement south would be but a waste of time, treasure, and men; so he properly abandoned the plan of invasion and gave orders to the army to return to Canada. The trek north developed into a real retreat, for the British left most of their artillery, stores, and provisions in the hands of the Americans. Strategically, the naval victory of Lake Champlain was of the highest importance. As Alden and Westcott have said: "When the news reached the peace commissions, already in session at Ghent, Belgium, there was no longer any serious British insistence on territorial concessions, a neutral Indian state in the Northwest or exclusive control of the Great Lakes."

The naval battle of Lake Champlain off Plattsburg on September 11, 1814, following a similar overwhelming defeat of the British Navy off Malden and Put-in Bay on Lake Erie a year before (September 10, 1813), had not only put an end to British ambitions in the West and territorial gains in the Northeast and south of the Great Lakes but also contributed much to the British desire for peace and added to a most unpleasant process of disillusionment in regard to the invincibility of the Royal Navy and the heretofore believed superiority of Britain to any other nation at sea — ship for ship, gun for gun, and man for man. The United States at sea and on the Great Lakes in the War of 1812 took much conceit out of the British, and the Americans as shipbuilders, naval commanders, and seamen both surprised and won the respect of all maritime peoples.

The British Retire from the War with "the Balance of Defeat" at Sea and on the Lakes Admittedly "So Heavy against" Them

The most authoritative newspaper in Britain, the London TIMES, made the following comment on the Treaty of Ghent in the issue of December 30, 1814:

> We have retired from the combat with the stripes yet bleeding on our backs. Even yet, however, if we could but close the war with some great naval triumph the reputation of our maritime greatness might be partially restored. But to say that it has not hitherto suffered in the estimation of all Europe, and, what is worse, of America herself, is to belie common sense and universal experience. "Two or three of our ships have struck to a force vastly inferior!" No; not two or three, but many on the ocean and whole squadrons on the lakes; and the numbers are to be viewed with relation to the comparative magnitude of the two navies. Scarcely is there an American ship of war which has not to boast a victory over the British flag; scarcely one British ship in thirty or forty that has beaten an American. With the bravest seamen and the most powerful navy in the world, we retire from the contest when the balance of defeat is so heavy against us.

It has been well said that the above was written by a patriotic and saddened Englishman before the TIMES had heard of the capture of the *Cyane* and the *Levant* by the U.S. frigate *Constitution*—said to have been "the most brilliant naval victory of the war"; the disabling of the *Endymion* (and the silencing of all her guns) by the U.S. frigate *President;* the capture of H.M.S. *Nautilus* by the U.S.S. *Peacock* and H.M.S. *Penguin* by the U.S.S. *Hornet;* or of the "disastrous and humiliating repulse of armed boats from a strong British naval squadron by the American privateer *General Armstrong* at [the neutral port of] Fayal" in the Azores.

Privateering—the Major Contribution to the Successful Outcome of the War of 1812

American privateers were built, fitted out, and commissioned during the War of the Revolution and the War of 1812 to capture or destroy the merchant ships of the enemy. The essential feature of privateering was commerce destroying. During the struggle for independence, the thirteen colonies in revolt had no ships of war designated and built to function solely as naval vessels, and the American warships owned and operated by the government (Continental or state) in that eight-year conflict (1775-1783) were originally either peaceful merchantmen armed with guns (with big crews aboard to work the guns, board the enemy, repel boarders, and man prizes) or vessels of merchant type built to carry guns and fight, but designed so that after the war they could be used profitably in commerce on the Seven Seas. Therefore, in the War of the Revolution, the American naval force consisted of the privateer type of vessel owned either by private interests or by the states or the Continental Government. When the War of 1812 broke out, the United States—thanks to the hostilities with the Barbary pirates and the Undeclared (or Quasi-) War with France—had the nucleus of a real navy, a few frigates and sloops of war, and some trained officers and men to operate them.

During the War of 1812, the United States harassed Britain, the world's greatest sea power, with a fleet of "impudent" privateers whose swiftness and handiness, coupled with the courage and mental resourcefulness of their command and complement, gave them "a vicious capacity for destructiveness." These "Yankee privateers," or converted commerce destroyers (built for trade and used for war), many of which were Chesapeake or Baltimore square topsail schooners, literally "gutted British shipping in the middle Atlantic, Gulf of Mexico, and the Caribbean Sea." It is said that, close-hauled or free, these relatively small "Yankee hornets" could "outfoot and outsail any foreign vessel afloat, whether merchantman, frigate or ship of the line, and without regard to size, model, power or sail spread." New England privateers, whereas less publicized than the Chesapeake Bay schooners, had an equally magnificent record in capturing and destroying British merchantmen. They roamed far afield on the Seven Seas and by greater speed evaded the more heavily armored British warships, but did not hesitate to engage sloops and cruisers as well as armed merchantmen. These Massachusetts and "Down East," or real "Yankee," privateers were sizable, deep-sea merchantmen, as well as fast sailers, and were capable of operating in any waters and of keeping the sea for long periods. They were commanded by outstanding, brave, and able sea captains of initiative, who could outthink, outdrive, and outfight any skippers afloat, and their officers and men were of a generally similar superior caliber.

In W. B. Maloney's excellent brochure, "The Heritage of Tyre," we read:

> The decision of the War of 1812 was gained through the sea, through our merchant marine, and not otherwise.
>
> By land the British, with only a handful of trained troops, made a holy show of us. The war was over and our capital in ashes before Jackson drove home the iron at New Orleans.
>
> But by sea our ocean-suckled tribe played ducks and drakes with the greatest water-borne power in the world. It was our merchant sailors, our whalemen, our fishermen, who were the sources of the blood and sinew and skill of the navy—they who fought the guns and handed the sails of the *Constitution* and the *Lawrence* and *Niagara* as earlier they had done those of the *Bonhomme Richard* and as later they were to serve a *Kearsarge* and a *Hartford*—they, these men-o'-peace, who had it in them to become men-o'-war overnight.
>
> And it was this same tribe who manned the harrying fleets of privateers which did more than the navy, imperishably glorious though its achievements were, to bring the war to its sudden end.
>
> The navy gored only the British lion, but our privateers gored Britain's pocket-book. They scuttled British commerce even within the gates of the English Channel itself.
>
> When a balance came to be struck, American privateers had destroyed nine million four hundred thousand dollars of British shipping; the Mistress of the Seas but forty thousand dollars more of ours.
>
> It is no wonder that British merchants and shopkeepers belabored the thick-headed ministry of the Crazy George to come to a peace.

In both the Revolutionary War and the War of 1812, America fought with the Mistress of the Seas, and it was the maritime forces of America rather than its armies that played the dominating part. It has been well said by an American: "The object of all wars is to operate on the mind of the enemy to the extent of bringing him to the desired terms. That our maritime forces were vastly more efficient in this effort is seen by the unbiased testimony of the English themselves." Privateers formed the largest section of America's maritime armed forces in both wars with Britain, and their success made them the prototype of later naval "commerce destroyers" after the Declaration of Paris (which, incidentally, the United States declined to ratify) sealed the fate of marine warfare by privateering. The course pursued in the Spanish-American War and the propositions made by its delegates to the peace conference at The Hague in 1899 definitely showed, however, that, at that time, the United States had renounced old-time privateering and henceforth would use, in its wars at sea, government-designed, owned, and operated commerce destroyers, which were light, well-armed, but relatively unprotected, fast cruisers. It was such a commerce destroyer of the "new United States Navy" (or the "White Fleet"), the *Olympia,* that was Commodore Dewey's flagship in the battle of Manila. When the War of 1812 commenced, Britain, notwithstanding the ranting of United States expansionists in and out of Congress and the call from the West and South to annex Canada and drive the British out of North America, had no anxiety whatsoever in regard to the operations of United States land troops or the invasion of Canada; but it did carry a very vivid recollection of the damage wrought by American marine forces—primarily privateers—to British commerce (and generally to British economy) in the War of the Revolution.

The British press in 1812 called upon the government not to underestimate the marine strength of "our resourceful enemy," but to recollect what American privateers did to British shipping in the latter part of the War of Independence. If America in its infancy—when it was without ships and without money—could do the harm to British vessels and commerce that the books of Lloyd's recounted, then much more damage to British shipping and trade could be looked for by the naval and armed merchant ships of an older and more developed United States. The British were warned that fighting Americans at sea would be very different from fighting the French or the Spaniards, and it was admitted by the London STATESMAN that American seamen "possess nautical knowledge, with equal enterprise to ourselves" and could be expected to attempt deeds "which a Frenchman would never think of." Predicting the potency of American maritime enterprise in the War of 1812 based on the record of the Revolutionary War, of the United States conflicts with France and the Barbary States, and of the bold ventures of American merchant ships and whalers on the Seven Seas, the British editorial writer said: "In a predatory war on commerce, Great Britain would have more to lose than to gain, because the Americans would retire within themselves, having everything they want for supplies, and what foreign commerce they might have would be carried on in fast-sailing, armed vessels, which, as heretofore, would be able to fight or run, as best suited their force or inclination."

Whereas New England and the maritime northeastern states were not desirous of or in sympathy with "Mr. Madison's war" and "did not patriotically stampede" into the construction or the converting and commissioning of privateers, as was the case in the War of the Revolution, a Baltimore writer (Niles) said in mid-1812:

> How far will the [British] revenue be touched by the irresistible activity and enterprise of our hundred thousand American seamen, prepared or preparing themselves to assail British commerce in every sea—to cut off supplies from abroad and forbid exportation with safety? The Americans will prove themselves an enemy more destructive than Great Britain ever had on the ocean—they will do deeds that other sailors would not dare to reflect on. Witness their exploits in the Revolutionary War and at Tripoli, in which, perhaps, not a single instance occurred of their being defeated by an equal force, though many cases to the contrary are numerous. What part of the enemy's trade will be safe? France, duly estimating the capacity of America to injure a common enemy, will open all the ports of the continent as places of refuge and deposit for our privateers, and all the fleets of England cannot confine them to their harbors, at home or abroad. The British Channel will be vexed by their enterprises, and one hundred sail of armed vessels will be inadequate to the protection of the trade passing through it. For the probability of these things let Lloyd's Lists from 1777 to 1783 be referred to. Terror will pervade the commercial mind and mighty bankruptcies follow, to all which will be superadded the great privations of the manufacturers and the increased distress of the poor.

It is significant that Niles, of Baltimore, as did the British, predicted the war to be primarily a marine one, with the object the destruction of commerce. Nothing is said about land operations or the strength of armies for either attack or defense. British prestige was materially lessened and the national morale weakened by the brilliant single-ship naval victories of the American frigates and sloops of war over vessels of the Royal Navy of similar type and force, and British pride continued to be deflated as long as hostilities lasted. British commerce, economy, and prosperity also commenced to feel the effect of the naval war early, and by June 1813, when the war was about a year old, the British people were paying the famine prices of $58 per barrel for flour, $38 for beef, and $36 for pork; while common lumber cost $72 a thousand board feet. Marvin says that, whereas the War of 1812 caused American ocean-carrying trade to become almost nonexistent, "our great antagonist was far more vulnerable and she suffered even worse," and he adds: "It was this economic distress more than our brilliant victories in a dozen naval duels which brought Great Britain at the last to terms, and this distress was the work less of our national warships than of our privateers."

A British Empire newspaper said in late 1814:

At Halifax insurance has been absolutely refused on most vessels, on others thirty-three per cent has been added to the former premiums. We do not hear of the capture of but one privateer for several weeks; that was the *Harlequin*, a new vessel, elegantly fitted, from an eastern port. She was taken by the 74-gun ship of the line *Bulwark* by a stratagem. [The *Harlequin* was built on the Piscataqua and sailed on her maiden cruise in the fall of 1814; after only 26 hours at sea, she virtually "sailed into" the British battleship, the flagship of Admiral Milne, and was captured before she had fired a gun or even sighted any other vessel at sea.] The depredations of the American privateers on the coasts of Ireland and Scotland had produced so strong a sensation at Lloyd's that it was difficult to get policies underwritten except at enormous rates of premiums. Thirteen guineas for one hundred pounds was paid to insure vessels across the Irish Channel! Such a thing, we believe, never happened before.

Public meetings expressing indignation, dwelling on economic losses, and called to petition the government for more drastic and effective action to protect British commerce and associated prosperity were held in various parts of the British Isles as the war continued, and many meetings of shipowners and merchants (joined at times by manufacturers) were held at important ports and shipping centers, at which the "depredations of American privateers" were deplored and the ministry urged to take steps to give relief (either by a more successful prosecution of the war or by negotiating for peace). At a meeting held at Glasgow, Scotland, in September 1814 by "special permission of the Lord Provost" and publicly advertised, it was unanimously resolved:

THAT the number of privateers with which our channels have been infested, the audacity with which they have approached our coasts, and the success with which their enterprise has been attended, have proved injurious to our commerce, humbling to our pride, and discreditable to the directors of the naval power of the British nation, whose flag, till of late, waved over every sea and triumphed over every rival.

THAT there is reason to believe that in the short space of less than twenty-four months over eight hundred vessels have been captured by that power whose maritime strength we have hitherto, impolitically, held in contempt.

THAT, at a time when we are at peace with all the world, when the maintenance of our marine costs so large a sum to the country, when the mercantile and shipping interests pay a tax for protection under the form of convoy duty, and when, in the plentitude of our power, we have declared the whole American coast under blockade, it is equally distressing and mortifying that our ships cannot with safety traverse our own channels, that insurance cannot be effected but at an excessive premium, and that a horde of American cruisers [privateers] should be allowed, unheeded, unrestricted, and unmolested, to take, burn, or sink our own vessels in our own inlets, and almost in sight of our own harbors.

THAT the ports of the Clyde have sustained severe loss from the depredations already committed, and there is reason to apprehend still more serious suffering, not only from the extent of the coasting trade and the number of vessels yet to arrive from abroad, but as the time is fast approaching when the outward-bound ships must proceed to Cork for convoys, and when, during the winter season, the opportunities of the enemy will be increased both to capture with ease and escape with impunity.

THAT the system of burning and destroying every article that there is fear of losing—a system pursued by all the cruisers and encouraged by their own governments—diminishes the chances of recapture and renders the necessity of prevention more urgent.

It is said that the Scots were particularly incensed at this time not only because Scotland's trade was being severely harried by American privateers but also because no less a personage than Sir Walter Scott "narrowly escaped being carried off by these indomitable Yankee rovers." Histories abound with stories of the fighting achievements of the American privateers, and numerous instances could be mentioned to illustrate the prowess of American merchantmen in naval warfare. Although there were many combats between British and American privateers (in which almost invariably the American vessel defeated her antagonist) and it was the boast that "any Yankee ship will lick a British ship of equal size and gun power," there were some occasions when United States privateers made vessels of the British Navy strike the Royal Colors.

United States privateers and government cruisers inflicted injuries to British shipping and commerce in the War of 1812 somewhat comparable to those of submarines in the World Wars of the twentieth century. British commerce suffered not only from actual losses in ships and cargoes captured or destroyed by the American "hornets of the sea" but also from the delays associated with the naval convoy system. Insurance rates were sharply advanced soon after the war started, and in many trades they were doubled or tripled and sky-rocketed. The premiums paid on trade between England and Ireland, because of the depredations of fast armed American vessels in these home waters, went up from 15 shillings and 9 pence to 5 guineas—or 6⅔ times as much as was paid when Britain, engaged in European wars, was at peace with the United States. The injuries wrought to British trade, coupled with annoyances, uncertainties, and delays of shipments and a greatly increased cost of operation, created and steadily built up in Britain during the War of 1812 a strong and increasing demand for peace with the United States if such could be negotiated on reasonable terms compatible with national honor and dignity.

Defiant privately owned American sea rovers amazed and angered the Britishers and provoked the MORNING CHRONICLE of London to splutter: "That the whole coast of Ireland from Wexford round by Cape Clear to Carrickfergus, should have been for above a month under the unresisted domination of a few petty fly-by-nights from the blockaded ports of the United States is a grievance equally intolerable and disgraceful." As Ralph D. Paine, in THE OLD MERCHANT MARINE, says:

> This was when the schooner *Syren* [of Baltimore] had captured His Majesty's cutter *Landrail* while crossing the Irish Sea with dispatches; when the *Governor Tompkins* [of New York] burned fourteen English vessels in the English Channel in quick succession; when the *Harpy* of Baltimore cruised for three months off the Irish and English coasts and in the Bay of Biscay and returned to Boston filled with spoils including a half million dollars of money; when the *Prince De Neufchatel* [of New York] hovered at her leisure in the Irish Channel and made coasting trade impossible; and when the *Young Wasp* of Philadelphia cruised for six months in those same waters.

Some of these American privateers that played havoc with British trade, complacency, and nerves were far from being "petty fly-by-nights." The *Prince De Neufchatel* had the distinctive honor of beating off the attack of the powerful 40-gun British frigate *Endymion* off New York—an exploit second only to that of the New York privateer *General Armstrong*, which beat off the attacking boats of an entire British squadron in the harbor of Fayal. The *Governor Tompkins* got in too close to the fast heavily armed British frigate *Laurel*, but fought it out, broadside to broadside, until she was able to pull away from her powerful foe, which had been fitted out, armed, and manned expressly to cope with the heavy 44-gun American frigates of the *Constitution* class. The *Harpy* was a big privateer of 347 tons, which took seventeen British prizes, including two well-armed transports and the powerful and fast Post Office packet brig *Princess Elizabeth*. The American privateers were tantalizing to the commanders of the king's ships and, as they "haunted the enemy's coast, made sport of the frigates and sloops of war" which tried to catch them. It was said of the privateer *Chasseur* (356 tons) that she was "never outsailed in fair winds or foul," and "out of sheer wantonness she sometimes affected to chase the enemy's men-of-war of far superior force"; that once, "when surrounded by two frigates and two naval brigs, she slipped through and was gone like a phantom." She took thirty-six prizes, among which was the *St. Lawrence* of the Royal Navy.

The British public gave no concern to American land forces operating in any part of the world, but it was seriously troubled by the damage wrought by United States privateers and naval vessels. As the war continued, the British press either ignored the American Army or spoke of it with contempt. The London TIMES referred to "the ignorance, incapacity and cowardice of the Americans by land," but had great respect for the United States Navy and "painful emotions" when it perused the almost unbroken list of American victories at sea. The English were unimpressed by any American military organization, methods, strategy, or equipment; however, they admittedly learned much from Americans in the design, construction, rigging, and arming of both privateers and naval vessels—frigates and sloops of war—and did the United States the compliment or honor of attempting to copy them.

The work of United States privateers in the War of 1812 was of great importance and contributed much to the final outcome. With their speed and handiness, courageous and able commanders, and relatively light draft, such vessels ran the blockade more readily than the heavier and more cumbersome frigates operating under government orders, and they could dispose of their prizes in either neutral or friendly ports. It has been said that the profits of the privateers "were the salvation of sailors made idle and of shipowners brought near to bankruptcy" because of the British naval blockade. The privateers were not a part of an organized naval force, and in this fact lay both their strength and weakness. Each privately owned armed vessel, duly commissioned to wage war upon enemy shipping, was a free lance and was "at liberty to roam the seas as she willed, having no central organization or concert of movement." On some occasions, privateers co-operated with and rendered service to the regular navy, but there were times when they were more of a hindrance than a help. Maclay, in A History of American Privateers, says: "Had the Penobscot Expedition of 1779 been organized with the government vessels and privateers under one management, it might have resulted in a glorious victory instead of a disastrous defeat." The Penobscot fiasco proved the foolishness of attempting to use light armed merchant ships for heavy and organized naval work and for fighting shore batteries and a heavily gunned and well-protected British battle fleet, with its ships built for the sole purpose of waging war. The Penobscot Expedition was undertaken with a motley array of light merchant vessels, fitted with small-caliber guns, and even if the ships had been "under one management," it was doomed to failure, as not a vessel in the fleet could withstand the fire of heavy enemy frigates—not to mention the powerful ship of the line that led the British squadron. However, the lack of organization and discipline coupled with complete ignorance of fleet tactics and concerted action caused the Penobscot defeat to become an ignominious rout.

Cranwell and Crane, in Men of Marque, write that should a privateer sight a sail, she would crack on all canvas in chase, but "should the quarry turn out to be an enemy ship-of-war, as quarries had a habit of doing, the privateer would go as rapidly as possible in the other direction." They continue:

> Running from war vessels was no reflection on courage; it was a matter of business. Obviously there was nothing to be gained from such an encounter except hard knocks, blood and glory: commodities which had small commercial value. . . . In general a privateersman who fought when he should have run was essentially inefficient. In privateering as in war, battle is a means to an end, not an end in itself. The privateersman fought to capture enemy merchandise [ships and property of value] and not for the fun of fighting.

This condition of risking private capital, not for glory but with the hope of making a substantial profit, is one of the two reasons that privateers did not make good navy vessels or ships of war (the other is that they were built for trading and not for fighting—either defensively or offensively). It also explains why privateers such as those participating (against the wills of their owners) in the foolish and disastrous Penobscot Expedition of 1779 could not possibly have been expected by competent and experienced military authorities to act in concert as units of a squadron and attack shore batteries or wage war against a powerful and highly organized and disciplined British fleet, built, manned, and operated solely in the national interest. But it was not only the owners of the privateers who demanded that their invested capital should be utilized to make profit; the officers and crew, from the captain down to the humblest sailor or cabin boy, were dependent for compensation for services entirely on the prizes taken. These men received no wages and were absolutely dependent on what they took of value from the enemy for their income and the means to support their families. Privateering, by its very nature, was permeated with the profit motive in the minds of all the crew as well as the capitalistic owners.

During the War of 1812, one-half of the proceeds from the sale of a prize went to the owners of the privateer making the capture to be further subdivided among the individual fraction, or stock, holders as their interest would appear; the other half went to the account of the officers and crew of the privateer and was subdivided according to the articles of agreement that had been signed by each member of the crew prior to sailing. These subdivisions of prize money due the crew were called "shares" and were similar to the "lay" of deep-sea fishermen and whalers. It was customary for a share to be a fraction of the total prize money which was to be paid an ordinary seaman, and the officers and others aboard were allotted various numbers of shares (or a fraction of a share) in proportion to their rank, relative responsibility, and importance. Sometimes the commander's portion was fixed at 20 shares, the first lieutenant's at 15, and the second officer's at 12. The privateer *Grand Turk* (*III*) of Salem (Captain Breed), when she sailed on her first cruise in February 1813, had a complement of 95 men in all, among whom 151½ shares of the one-half of the net proceeds of all prizes taken were to be divided (the owners of the brig receiving the other half). Ordinary seamen obtained ¾ share each and able seamen, 1 share (boys, ½ to ¾ share according to age and duties); whereas the commander received 10 shares; the first lieutenant, 7½ shares; the second lieutenant, sailing master, and surgeon, 6 shares each; the secretary (or purser), 3½ shares; and the four prizemasters, first master mate, and pilot, 3 shares each. Members of prize crews shared equally in any subsequent prizes taken by the privateer after they had left the vessel. In addition to the usual officers and petty officers, privateers carried prizemasters, who were capable navigators and usually resourceful commanders and fighters, and their share of the total prize money from a cruise was usually about the same as that of the petty officers. Privateers, besides carrying able and ordinary seamen, had men aboard rated as "landsmen," who were in fact marines, or sea soldiers, and were supposedly good marksmen or sharpshooters. In the War of the Revolution, these men had been known as "gentlemen sailors" and were signed up by a privateer to fight—not to work the ship.

Privateers depended for their success, to a great degree, on extreme individualism, but that is no reason why some effective code of signaling was not developed and used between American privateers and between such privately armed vessels and the United States Navy. On several occasions, American privateers chased each other at sea, and the smaller or more lightly armed vessel threw guns and other heavy and valuable weights overboard in a desperate effort to escape from what was believed to be the enemy. On January 16, 1813, the 18-gun New York privateer *Anaconda* (Captain Shaler) off Cape Cod, through the lack of a signaling system between government and privately owned vessels of war, fired a broadside into the U. S. war schooner *Commodore Hull* (Lieutenant Newcomb) and caused several casualties, among whom was the commander of the naval vessel. Following this regrettable and, it would seem, avoidable experience, the *Anaconda* made a cruise to European waters, fought and captured several armed British merchantmen, and captured prizes valued at $215,000.

Mast. Comdt. Arthur Sinclair of the U.S. sloop-of-war *Argus* had an action with and presumably sank an American privateer on March 9, 1813. Writing of this affair, Sinclair said:

> In consequence of silencing her I ceased my fire believing that she had struck; but although she fired on me first, after being told who we were and never would answer who she was, yet so much did I fear that it was some of my imprudent, headstrong countrymen that I took every opportunity to spare her, and to try and find out who she was. I much fear they were all lost, as she could not have a whole boat left, and we found pieces torn out of her by our shot ten or twelve feet long on the shore the next morning. I judge her to be upward of two hundred tons by the 9½-inch cable and the seven-hundred or eight-hundred weight anchors we got next day. She was crowded with men, as we could see by the light of her guns. I was sure she would sink as we were within one hundred and fifty yards of her and I pointed myself seven long 18-pounders, double and treble shotted, just amidships between wind and water and could plainly hear the shots strike her.

In October 1812, the Baltimore privateer schooner *Nonsuch* of 154 tons (12 guns; 110 men), under the command of Capt. Henry Levely, after detaining the American schooner *Mary* from Alexandria on the suspicion of trading with the enemy, fought a spirited action with another armed vessel, which later proved to be the Baltimore privateer *Joseph and Mary* of 139 tons (Capt. William Wescott). Both vessels suffered much damage, and the *Joseph and Mary,* which finally struck her colors, had six casualties (two killed and four wounded). Wescott had seen the *Nonsuch* stop the American schooner *Ann Maria* and had naturally been led to believe that any vessel seizing an American vessel must be a Britisher. Cranwell and Crane have said:

> It was later charged that Levely had recognized the *Joseph and Mary* and had tried to sink her, but there seems to have been little foundation for this contention. Such cases of mistaken identity were not infrequent, although rarely did they result in such disastrous consequences. It was very difficult to distinguish nationalities during a war in which captured vessels became part of the captor's fleet and flags could not be trusted until action was joined.

Vessels at sea were apt to fly any national flag, but before an action was commenced, they were required to show their true colors, and this practice was almost universally followed. In the case of the *Nonsuch* and *Joseph and Mary* episode—as disgraceful as it was humiliating and harmful—it would seem that both schooners were carrying the Stars and Stripes when they fought. Levely said that during the second stage of the battle, which commenced after daylight, he ran up the United States flag to his gaff "without a reply from the other vessel." But we are also told that when the *Joseph and Mary* ceased firing, "her colors fluttered down" and she surrendered, and naturally her flag could not have been lowered if, as Levely claimed, it had never been run up. Again, if the *Nonsuch* did fly her colors during the daylight fight, why did Wescott not see them and why did he proclaim ignorance of the identity of his opponent until he stepped aboard of her, when, we are told, he "apologized deeply for the incident."

The War of 1812 was generally fought on the seas—not by national ships, which were few and of comparatively little power and importance, but by privateers, which were merchant vessels manned by merchant crews. Edgar S. Maclay, in A HISTORY OF AMERICAN PRIVATEERS, says that the regular navy of the United States in the War of 1812 comprised on the ocean only 23 vessels of all classes mounting 556 guns and that these national ships captured 254 vessels of the enemy. He gives the number of privateers as 517 mounting 2,893 guns and says that these privately armed ships "took no fewer than thirteen hundred prizes." The money value of British ships and cargoes captured by American naval vessels in the "second war for independence" is estimated at $6,600,000; that of the ships and cargoes taken by the privateers at $39,000,000—a total of $45,600,000. These figures indicate that the privateers mounted 5¼ times as many guns and captured 6 times as much British ship and cargo property as the vessels of the United States Navy, which checks an historian's statement to the effect that in the terrible attack upon England's "pocket nerve" (during the War of 1812) the United States merchant marine proved 6 times as potent as American naval vessels. Maclay also says that "no fewer than thirty thousand prisoners" were taken by American armed vessels (naval and privately owned) during the war as against "about six thousand" by United States land forces; this ratio of 5 to 1 in favor of marine activities is most significant. Alden and Westcott, in THE UNITED STATES NAVY, writing of the naval operations of the War of 1812, have said:

> Of the twenty-two ships in the naval service, eighteen were employed in commerce destroying and took a total of 165 prizes. Of the privateers, there were 526 registered, but only about two hundred actually got to sea and operated successfully, accounting for a total of 1,344 British ships captured or destroyed. In the latter months of the war, when the privateers were larger, faster, and more heavily armed, and extended their cruises more widely over the trade routes, the number of captures greatly increased. During the last eighteen months they totalled 1,054, or an average of nearly two a day, a rate of loss to the enemy that was severely felt then, as it would be in later times.

Maclay says that the privateers captured about five times as many British prizes as did the vessels of the regular navy, but Alden and Westcott say that this ratio was over eight to one and that there were about eleven times as many active American privateers as there were regular naval vessels employed in the destruction of British commerce.

John R. Spears says that the total number of American merchant ships used for privateers during the War of 1812 was 515 and that these vessels captured 1,345 prizes (an average of only 2.6 for each privateer); whereas the British Admiralty reported the capture of 1,328 American merchantmen, of which 228 were privateers. If the British figures of captures and the figures given by Spears of total commissioned privateers were correct, then over forty-four per cent of the American privateers fell into British hands. Spears, commenting on the gains and losses of the American merchant marine, writes:

> The unrecorded disasters to privateers through storms certainly brought the number of total losses of these vessels up to a half of all that were commissioned. It is notable, too, that the number of American merchantmen captured by the enemy was only thirteen [17] less than the number taken from the enemy, and it follows that the American losses were greater, in this respect, than those of the British; for the American ships were, on the average, worth much more than the British. On the whole, it appears that, if the predatory part of the War of 1812 had any influence upon the result, the Americans were the greater losers.

Spears was evidently a navy man in sympathy, and his reasoning is fallacious. The American ships captured by the British were generally small craft engaged in coastwise trade; the better and larger ships built for ocean trade were either converted into privateers or laid up for the duration of the war. Also, Spears ignores the psychological effect upon the enemy and the weakening of the morale of the British public due to the depredations of American privateers. Indeed, many authorities go so far as to say that the operations of armed American merchant ships scared not only British merchants and manufacturers but also the British people as a whole to such an extent that a steadily increasing demand for peace, with rapidly gaining political power on the part of the people during 1813 and 1814, forced the government to end the war and negotiate a peace with the United States.

The work of American privateers in the War of 1812 has probably been understated rather than overstated. The master of a British merchantman, which was three times captured by Americans and three times recaptured by British naval forces, stated upon arrival at his home port that during a single voyage he had sighted no less than ten American privateers. These armed and fast "Yankee scorpions of the sea" harassed British merchant convoys sailing under the protection of ships of the line, frigates, and sloops of war; they not only captured or destroyed stragglers but also chose opportune occasions to raid the main body of the convoy and destroy valuable merchant ships and their cargoes by outwitting their more cumbersome and slower-thinking, powerful guardians. These privateers carried the war to the British coast and the English and Irish channels and, it has been said, "produced in Britain a comical blending of fury and despondency," which found voice in the numerous memorials to the British Government of seaport towns, merchants, and the producing trades. It is an unquestioned fact that the U.S. Navy frigates and sloops of war, with their brilliant record in fighting Royal Navy vessels of similar type and power, did much to disillusion Britishers in regard to the invincibility of their navy and humiliate the proud Mistress of the Seas; yet it was the American privateers operating as commerce destroyers that by bringing about such great injuries to British shipping, trade, and foreign business in general, in conjunction with heavy losses, economic depression, and lack of security, caused the British people—mercantile, manufacturing, agricultural, financial, and political—to grow weary of and disgusted with the war and in the fall of 1814 take serious steps to negotiate for an "honorable peace" to bring an end to hostilities that were becoming more destructive to British morale, prestige, and economy the longer the war lasted. Considering the damage done by American vessels to the shipowners, merchants, and morale of Britain in the War of 1812, one cannot fail to be impressed by the conditions prevailing and the extent of the damage that could have been done to British ships, commerce, and manufactures if the United States had possessed a navy proportional to its merchant marine and its importance as an ocean-carrying power. With such a navy, there would have been no war, but if through arrogant stupidity a British ministry had acted to start one, it would have been ended in a few weeks or, at the latest, in a few months by the "wails of anguish" of British producers and shippers whose veritable existence depended on unmolested foreign trade—both imports and exports.

Mahan, in his SEA POWER IN ITS RELATIONS TO THE WAR OF 1812, claims that until the American Navy had been neutralized by blockade, it had done more damage to British commerce than had privateers, vessel for vessel. But such a statement is as deceiving as it is prejudiced, for the result of the work of the two types of commerce destroyers—government and privately owned—should be compared in vessels of similar size, power, and cost. The British fleet practically drove American commerce from the seas; however, it did not prevent by means of its blockade either the sailing or return of American armed vessels, although in eluding the British blockading squadrons, privateers were more successful generally than naval ships, and had it not been for the privately owned armed ships, the United States would have made but a relatively insignificant impression on the commercial fleet of Britain. The British marine power was too vast for the relatively small United States armed forces—both government and privately owned—to destroy; nevertheless, American privateers and naval vessels materially harassed the enemy, inflicted great damage, interfered with commerce, and greatly increased costs, so that British mercantilism called for peace while the country in general became disillusioned in regard to its believedly invincible navy and critical of its admiralty and government. Mahan says: "In 1812 and the two years following the United States flooded the seas with privateers producing an effect upon British commerce, which, though inconclusive singly, doubtless co-operated powerfully with other motives to dispose the enemy to liberal terms of peace. It was the reply, and the only possible reply, to the commercial blockade."

Before the war was over, the American Government became convinced by bitter and humiliating experience (which included the burning of Washington) that Jefferson's economic and nonaggressive, anti-imperialistic ideas of a navy consisting of small gunboats were fundamentally wrong. These boats proved worthless for the defense and very service for which so much had been claimed for them, so much so that Maryland citizens, in disgust at the proven futility of the gunboats to defend the waters of the Chesapeake, not to mention raise the blockade, called upon the government to hire and use for the defense of the bay a number of privateers then in the harbor and unable to get to sea because of the large British blockading squadron. It was pointed out that, whereas the gunboats were useless to cope with the situation and sizable seagoing vessels of the regular navy were unavailable, "the privateers were heavy vessels, powerfully armed and very fast, and would be able to protect the commerce against anything but attack by the king's heavily armed ships of war." The War of 1812 definitely killed the idea of a navy for defense only and exploded the Jefferson gunboat myth. The boats were virtually useless even in smooth water and operating under ideal conditions; seamen refused service on them, and officers denounced them. A navy, to be effective, had to consist of seagoing vessels, and as the United States had but few ships of this type, privateering had to be resorted to and encouraged. Mahan admits that "better use of it perhaps never was made than by the American people at this time."

American naval vessels and privateers dealt a severe blow to British prestige at sea, but after Britain decided to attempt to the utmost to blockade the entire American coast, privateering was struck a hard blow, as profits depended on sending prizes with valuable cargoes into port. Naval vessels were not concerned primarily with the capture and getting into port of prize goods, and, therefore, with the coast blockaded, they became more efficient commerce destroyers; for it was better to burn or scuttle an enemy ship than put a prize crew aboard and, in attempting to profit by the capture, have the vessel and her cargo retaken by the enemy. As the War of 1812-1815 continued, it was suggested to Congress that all privateers commissioned should be of not less than 200 tons, mounting 15 or more guns and carrying a minimum crew of eighty men. A naval vessel took prisoners, but privateers were after goods of commercial value and generally considered prisoners an expense as well as a nuisance. To encourage privateers to take prisoners and thereby weaken the British merchant marine service, the U.S. Government paid a bounty of $20 a head to privateersmen for the prisoners they brought in, and as this bounty proved insufficient to accomplish the purpose intended, the amount was later raised to $100 per head. In February 1814, Baltimore merchants and privateer owners, suffering from an inability to get prizes to port through the British naval blockade, urged that privateers be sent to sea not to capture prizes and attempt to sail them in but to burn or sink all enemy shipping, and it was suggested that instead of being paid for services with prize goods, the owners and crew of privateers should be paid a bonus by the U.S. Government for every ship sunk. Such a practice, it was asserted, would not only do greater damage to enemy shipping and commerce but also make privateering more profitable and less hazardous. As a matter of fact, it would technically have done away with traditional privateering and brought into being a sort of privately owned subsidiary of the regular navy, with such vessels being operated as commerce raiders on the same lines as government cruisers.

In 1752, Frederick the Great of Prussia startled the international law pundits of the day by asserting that enemy property on board neutral ships should be exempt from capture, and although his views were considered preposterous by the great powers and promptly and effectively quashed, Frederick's idea was revived in 1780 by Catherine of Russia, whose wrath was kindled when British privateers captured two Riga ships; the result was a famous declaration which, backed by most of the Continental nations, led to the first armed neutrality against England. Upon the outbreak of war between Great Britain and the newly born French republic in 1793, Russia made a complete right-about face and entered into a treaty with Britain whereby both parties thereto undertook to do all in their power "on this occasion of common concern to every civilized state to prevent other powers from giving in consequence of their neutrality any protection to French property or commerce." Similar provisions were made in treaties with Austria, Spain, and Prussia, and privateers were authorized to seize neutral ships laden wholly or in part with French merchandise, neutral ships laden with provisions bound for France, and neutral ships laden with French colonial produce. This arrangement seriously hampered and hindered the growing marine commerce of the young American republic, "whose future," it was believed, "was on the seas." In 1785 a treaty was negotiated between the United States and Prussia, in which it was agreed that in the event of war between the two countries, no privateers should be used nor letters of marque issued by either side. When this treaty was being negotiated, Benjamin Franklin expressed not only his personal views on the subject of privateering but also the opinion of a lot of his countrymen when he said:

> It is for the interest of humanity in general that the occasions of war and the inducements to it should be diminished. The practice of robbing merchants on the high seas, a remnant of the ancient piracy, though it may be accidentally beneficial to particular persons, is far from being profitable to all engaged in it, or to the nation that authorises it. Piraterie, as the French call it, or privateering, is the universal bent of the English nation, at home and abroad, wherever settled. No less than seven hundred were, it is said, commissioned in the last (the American) war. These were fitted out by merchants to prey upon other merchants who had never done them any injury. Methinks it well behoves merchants to consider well of the justice of a war before they voluntarily engage a gang of ruffians to attack their fellow-merchants of a neighbouring nation, to plunder them of their property, and perhaps ruin them and their families if they yield to it; or to wound, maim, and murder them, if they endeavour to defend it. Yet these things are done by Christian merchants, whether a war be just or unjust; and it can hardly be just on both sides. They are done by English and American merchants who, nevertheless, complain of private theft, and hang by dozens the thieves they have taught by their own example. It is high time, for the sake of humanity, to put a stop to this enormity.

It has been said that to discuss the abolition of privateering on humanitarian grounds as Franklin and others did "was only slightly less egregious then than it would be now in these days of poison gas, unless of course it is considered more barbarous to confiscate property than to take men's lives." The habit of anathematizing privateersmen as pirates, which was quite common in Franklin's day, shows a fundamental ignorance of the subject, for the practice of commissioning privateers and issuing letters of marque by the sovereign power of a state was a definite break with and repudiation of piracy and was a most important step in the development of law and order at sea. It is strange to turn to a pacifistic humanitarian for a statement of views on privateering more indubitably realistic and in accord with facts than the rhetorical diatribe of Franklin, but Thomas Jefferson, the denouncer of imperialism and of aggressive and organized military power, upon the declaration of war with Great Britain in 1812, completely rejected the expressed and publicized views of Benjamin Franklin and his school of thought in the following straightforward words:

> What is war? It is simply a contest between nations, of trying which can do the other the most harm. Who carries on war? Armies are formed and navies are manned by individuals. How is a battle gained? By the death of individuals. What difference to the sufferer is it that his property is taken by a national or private armed vessel? Did our merchants who have lost nine hundred and seventeen vessels by British captures, feel any gratification that the most of them were taken by his Majesty's men-of-war? Were the spoils less rigidly exacted by a seventy-four gun ship, than by a privateer of four guns; and were not all equally condemned? War, whether on land or sea, is constituted of acts of violence on the persons and property of individuals; and excess of violence is the grand cause that brings about a peace. One man fights for wages paid him by the government, or a patriotic zeal for the defence of his country; another, duly authorised, and giving the proper pledges for his good conduct, undertakes to pay himself at the expense of the foe, and serve his country as effectually as the former, and government drawing all its supplies from the people is, in reality, as much affected by the losses of one as the other, the efficacy of its measures depending upon the energies and resources of the whole. In the United States every possible encouragement should be given to privateering in time of war with a commercial nation. We have tens of thousands of seamen that without it would be destitute of the means of support and useless to their country. Our national ships are too few in number to give employment to a twentieth part of them, or retaliate the acts of the enemy. But by licensing private armed vessels, the whole naval force of the nation is truly brought to bear on the foe, and while the contest lasts, that it may have the speedier termination, let every individual contribute his mite, in the best way he can, to distress and harass the enemy, and compel him to peace.

Jefferson was responsible for the unpreparedness of the United States to wage war in 1812. His ideas of a nonaggressive navy, which meant no seagoing vessels at all but only small harbor defense gunboats, were primarily responsible for the United States's possessing only a "contemptible little navy" when the South and the West united to plunge the country into a war for which it was ill prepared. Jefferson, however, did have sense enough to see that the United States, with but an insignificant government navy (as far as numbers of ships, guns, and trained naval men were concerned), was dependent to a very great degree on the use of privately owned ships of war if the United States was to harass the Mistress of the Seas to any appreciable amount at sea. Without privateers, the record of the United States in the War of 1812 would have been pathetic as far as inflicting injuries to British commerce was concerned, and it is doubtful as to whether an honorable peace could have been secured at its termination notwithstanding the Battle of Lake Erie and the late victories on Lake Champlain and at New Orleans. American commerce destroyers, operating against enemy shipping and deep-sea trade, made the British merchants and public war-weary, and the greatest harm to the British economy was inflicted by privateers.

Notwithstanding the experience of Americans with small and lightly armed privateers in the War of the Revolution, it would seem that shipowners in the maritime states were somewhat backward and reluctant during the early part of the War of 1812 to arm and commission their big and fast ships as privateers or to construct ships for that service; nevertheless, a large fleet of small craft was quickly overhauled, mounted with a few guns (some with only one), and sent out with a commission "to burn, sink and destroy" enemy shipping. When hostilities broke out, there was no American privateer in existence, and New England was not keen about "Mr. Madison's war," even though Washington propaganda termed it "a sailors' war" and a fight for "free trade and sailors' rights." The backwardness of New England shipowners to respond to the government's call to arms is subtly indicated by the "pleasing" press news given southerners on July 1, 1812, which read: "The people in the eastern states are laboring almost night and day to fit out privateers. Two have already sailed from Salem and ten others are getting ready for sea. This looks well, and does credit to our eastern friends."

We read that in the Chesapeake territory war had been expected for some ten weeks and that news of the declaration by Congress, which reached Baltimore late on June 18, occasioned no surprise and caused little excitement. Baltimore merchants and shipowners, primarily, were interested in the act that authorized President Madison to "issue to private armed vessels of the United States, commissions or letters of marque and general reprisal," and many "farsighted business men of Baltimore already had their fastest vessels well on the way to conversion from merchantmen to commerce raiders." As privateering got under way, it became the practice to spread one's investments in marine tonnage, and by far the larger number of letters of marque and privateers was owned by a syndicate or a stock company made up by a number of merchants, each of whom owned a stated fraction or one or more of a certain number of issued shares. The Baltimore AMERICAN of June 25, 1812, reported that a "subscription paper was opened at the Merchants Coffee House in Baltimore for equipping a letter of marque to the extent of $20,000 in shares of $500 each." On July 4, 1812, a Baltimore newspaper said: "Several small, swift privateers will sail from the United States in a few days. Some already have been sent to sea, and many others of a larger class, better fitted and better equipped, will soon follow." It was said that by mid-summer of 1812 there were "more than a hundred British vessels of war off the coast of the United States," and Niles (of Baltimore), in his REGISTER of July 15, 1812, said:

In sixty days, counting the day on which war was declared, there will be afloat from the United States not less than one hundred and fifty privateers, carrying, on an average, seventy-five men and six guns. If they succeed pretty well, their number will be doubled in a short time. Sixty-five were at sea on the 15th inst. Many others are probably out that we have not heard of.

Records show that, whereas about one hundred fifty American privateers were actually commissioned and presumably "preying upon British commerce in the North Atlantic" by the time the war was two months old, during this same period "only eight United States naval vessels had been put to sea to harass enemy shipping," and naval vessels were supposed to have had ample warning of the contemplated hostilities and been prepared to wage war promptly and with vigor. The Chesapeake, it has been said, was "quick on the trigger" in getting small privateers out to sea, but by mid-October, historians tell us, New York had sent out "twenty-six privateers, mounting some three hundred guns and manned by more than two thousand men." Niles's estimate of 150 American privateers at sea by August 17, 1812, carrying 900 guns and 11,250 men, was apparently far too optimistic, and the early privateers commissioned did not average the number of guns nor carry the complement that he states. Maclay, in A HISTORY OF AMERICAN PRIVATEERS, says:

Many of the first privateers to get to sea were small pilot boats, mounting one long tom amidship with several smaller guns [probably swivels] and carrying a crew of fifty to sixty men, whose chief dependence in battle was on muskets, sabers, and boarding pikes. . . . At that time they were sufficiently formidable to capture the average British merchantman, but as the war progressed the great increase in armaments and complements of English trading vessels made our smaller privateers almost impotent. As soon as it was known that war had been declared, a swift pilot boat hastened across the Atlantic to Gottenborg, and gave warning to all American merchantmen then in the ports of Sweden, Denmark, Prussia and Russia. In this way a large number of our merchant craft were saved from capture, those that did venture out being fast-sailing vessels that could easily outsail the average British cruiser, or letter of marque.

The first British merchant vessel taken by Americans on the high seas during the war was a ship bound from Jamaica to London, which was captured off Cape Hatteras on July 1 by a United States revenue cutter and sent into Norfolk, Va. The first vessels taken by American privateers proved to be British dispatch boats, and as the United States Government declared the seizures to be "unfair," the British vessels, with their crews, were promptly ordered liberated. These early "stings" of American privateers experienced by Britain covered the capture of the British schooner *Whiting* (4 guns), commanded by Lieutenant Maxcey, R.N., taken on July 10, 1812, in Hampton Roads by the privateer *Dash* (1 gun; forty men) under the command of Captain Carroway, of Baltimore. About the same time, the British official dispatch boat *Bloodhound* was captured by the 8-gun Baltimore privateer *Cora* (Captain Gold) and carried into Annapolis. It appears that when these two British Government vessels were freed and "ordered to quit the waters of the United States with all possible speed," trouble developed among their crews; many men refused to board the British vessels and claimed "the protection" of United States soil, although at the time they were being held as prisoners. Among these men, it developed, was an American who had been forcibly impressed by the British three years before. We are told that several members of the crews of the *Whiting* and *Bloodhound* "enlisted in the United States service, or entered on board our privateers."

Maclay says that during the first eight weeks of the War of 1812, the British captured 1 U.S. Government vessel (the schooner *Nautilus*), 13 privateers, 15 ships, 14 brigs, 10 schooners and 1 sloop—or 54 vessels of all types. "In the same time our government cruisers took eight merchantmen, while our privateers seized one British Government craft [excluding the two taken by force of arms and later liberated] besides nearly one hundred vessels." Other authoritative reports give the total number of American captures as 110 and losses as 56—a ratio in favor of the United States of 2 to 1. The Essex REGISTER records that during this period privateers sailing from the ports of that county (Salem, Gloucester, and Marblehead) made 37 prizes of British vessels.

We are told that the seamen of Salem, whose activities and prosperity had been so deeply and detrimentally affected by the pacifistic and appeasement policies of Thomas Jefferson and his administration (1801-1809), welcomed the war, were eager for revenge for the wrongs that they had suffered at the hands of the British, and manned "the fleets of privateers" and vessels of the regular navy with expressed enthusiasm. It is evident that during the first part of the war, Salem was more active than Boston in getting privateers to sea, but a comparison of the privateering activities of Salem during the War of 1812 with its corresponding activities in the War of the Revolution is significant:

War of 1812		War of the Revolution	
Private armed ships	4	Private armed ships	56
Private armed brigs and brigantines	2	Private armed brigs and brigantines	69
Private armed schooners	21	Private armed schooners	56
Private armed sloops	4	Private armed sloops	14
Private armed galleys	0	Private armed galleys	1
Total number of privateers	31	Total number of privateers	196
Total number of guns	147	Total number of guns*	1,965
Total number of men	2,081	Total number of men	7,631
Average number of guns per privateer	4.7	Average number of guns per privateer*	10
Average number of men per privateer	67	Average number of men per privateer	39

*The number of guns in this statement, compiled from the naval records of the Revolution and from lists preserved in Salem archives, is obviously overstated.

The total number of privateers commissioned was probably more than the number stated, and it has been said authoritatively that in the War of 1812 "Salem placed in commission forty-odd privateers, of which more than half were built in her own yards." Some of the lists of Salem privateers include the "5-ton boats" *Black Vomit* (sixteen men), *Orion* (twenty men), *Terrible* (sixteen men), armed with muskets, sabers, and pikes only, and such "cock-sparrows" as the following:

Name	Tons	Guns	Men	Name	Tons	Guns	Men
CASTIGATOR (launch)	10	1 6-lb. carronade	20	PHOENIX (schooner)	20	1 6-lb.	25
ACTIVE (schooner)	20	2 4-lb.	25	FAME (schooner)	30	2 6-lb.	30

There is a record of the merchant schooner *Helen's* being loaned by her Salem owners to operate as a privateer on a special mission with a volunteer crew of seventy men and 4 6-pounders borrowed from the privateer *John*; evidently, the *Helen* served as a privateer for only a few days. Early Salem privateers to put to sea to "harass the enemy" were the schooner *Dolphin* (1 gun; twenty men), the sloop *Jefferson* (2 guns; thirty men), and the sloop *Lion* (2 guns; twenty men), the schooner *Snowbird,* and the schooner *Fair Trader* (1 gun; twenty-five men). These five little armed merchantmen are reported to have captured thirty-six British vessels (five ships, ten brigs, fourteen schooners, four sloops, and three shallops) during their early cruises. The *Fair Trader* (Captain Morgan), after taking the ship *Jarrett* of 400 tons (2 guns; eighteen men), one brig, and five schooners (i.e., seven prizes), was herself captured on July 16, 1812, by the British 18-gun brig-of-war *Indian.* The *Dolphin* (Captain Endicott) was also taken by superior British force on August 12, 1812, but not before she had raised havoc with enemy shipping; on her first cruise, she was chased several times by more powerful British naval vessels, including a frigate, and escaped. The *Dolphin* (*I*) is rated by Maclay as a 1-gun 20-man private armed schooner, but he also refers to her as a 5-gun 28-man privateer. Ralph D. Paine, the marine historian of Salem, says that she had only 1 gun, but carried a very large crew. Maclay says that this vessel, under the command of Capt. J. Endicott, of Salem, was one of the first United States privateers to get to sea during the War of 1812 and, "in a cruise of a few weeks, captured three ships, seven brigs and six schooners." There is evident confusion here between *Dolphin I* and *Dolphin III* (Captain Stafford), carrying 12 guns and 100 men, which was captured with three other American privateers at the mouth of the Rappahannock in early April 1813 by a powerful British squadron consisting of the 74-gun battleships *San Domingo* and *Marlborough,* the frigates *Maidstone* and *Statira,* and the brig sloops-of-war *Fantôme* and *Mohawk.* Before the war ended, six different private armed American vessels bore the name *Dolphin,* but the first privateer so named, hailing from Salem, is credited with taking six prizes on her first cruise of 20 days (July 3-23, 1812), although other records place the number of her captures at ten (four ships, three brigs, and three schooners). The Baltimore privateer schooner *Dolphin* of 161 tons (12 guns; 100 men) sailed July 11, 1812, and took twelve prizes all told (six of them were small coasters, which were destroyed). As before stated, she was captured by boats from the British blockading squadron in the Rappahannock on April 3, 1813.

Of some 517 privateers reported to have been commissioned by the United States during the War of 1812 (some records give the total as many more), the ownership, as nearly as can be determined, has been credited to the following states:

State	Number of Privateers	State	Number of Privateers	State	Number of Privateers
Massachusetts	150	New Hampshire	16	Louisiana	7
Maryland	112	Maine	15	Georgia	7
New York	102	Connecticut	11	Ports not designated	57
Pennsylvania	31	Virginia	9	Total	517

The omission of Rhode Island in the above list of states is significant, for it is known that this small state did send out at least eight and probably ten or eleven privateers during the war, and any deficiency in numbers seems to have been made up by the vast amount of damage two of them (the *Yankee* and the *True Blooded Yankee*) inflicted upon British commerce. Although all the vessels of the famous Yankee-named fleet of privateers are often credited to Rhode Island owners, it would seem that three out of the five actually hailed from Rhode Island ports; the other two had Massachusetts and New York owners, respectively, but it has been said that even these two "Yankees" (the *Yankee American* and *Yankee Porter*) were manned largely by Rhode Island seamen. Other privateers sent out by Rhode Island during the War of 1812 were the *Water-Witch* (which seized a vessel loaded with flour destined for the enemy), *Hiram, Huntress, Juno,* and *Swift*—all small craft carrying 1 to 3 guns. The *Gov-*

ernor Gerry, a brig of 18 guns and built to serve either as a privateer or a fast letter of marque, is said to have been owned—at least in part—in Rhode Island.

Morison, in MARITIME HISTORY OF MASSACHUSETTS, says that as political sentiment in maritime New England was opposed to the War of 1812 and deemed it immoral, unjust, hypocritical, and pro-French at a time when all free men should unite in combating Napoleon ("the Tyrant" and the destroyer of human liberty), "it is not surprising that Massachusetts did not show her former pre-eminence in privateering." "As against fifty-eight privateers from Baltimore and fifty-five from New York, Boston fitted out only thirty-one, Salem forty-one, and the smaller ports probably not more than fifteen altogether." Morison says that Rear Admiral Emmons' estimate, made in 1853, of 526 privateers being fitted out in the United States during the War of 1812 probably included armed merchantmen that were letters of marque and, carrying cargoes, were not out-and-out privateers. He also says that "five of Salem's privateers were small open boats armed only with muskets and only twelve were over one hundred tons burthen." In Newburyport a contemporary wrote, "Federalist [anti-war] ideas were so prominent that the fitting of privateers was opposed strongly." New Bedford, at a town meeting held July 21, 1814, declared, "We have scrupulously abstained from all interest and concern in sending out private armed vessels." It thereupon resolved to quarantine for forty days any American privateer that should put into its harbor. On the other hand, Marblehead, a rival of Salem, was pro-war and anti-British, and while it formed a local militia and sent only 57 men to the army, we are told that it "provided 726 privateersmen and 120 naval seamen."

Ralph D. Paine, in THE SHIPS AND SAILORS OF OLD SALEM, wrote in 1908: "By the end of the year 1813 the prizes captured by Salem privateers had been sold for a total amount of more than six hundred thousand dollars [actually $675,695.93]. Many of the finest old mansions of the Salem of today, great square-sided homes of noble and generous aspect, were built in the decade following the War of 1812, from prize money won by owners of privateers."

One of the Rhode Island privateers, the *Yankee,* is credited with making six successful cruises, during which she captured some forty British vessels valued at fully three million dollars. The gross receipts from the sale of one of this vessel's prizes reached a record high for a single ship and cargo. Another Rhode Island privateer, the *True Blooded Yankee,* took twenty-seven prizes (before she was captured), one of the ships captured being reported "as worth $400,000."

The privateer *Rossie* of Baltimore (Capt. Joshua Barney) is referred to in many American histories as an outstanding privateer whose operations were "extremely profitable to her owners." It is said that this vessel "on a single cruise captured vessels supposed to be worth more than one and a half million dollars." This is obviously a gross exaggeration of the privateer's earnings. Barney reported eighteen prizes, but Baltimore records credit the schooner with capturing twenty vessels on her one privateering cruise (in the taking of one, the schooner *Jubilee,* another privateer co-operated). Of the total of twenty vessels, five were burned, two sunk, and two used as cartels; of the remaining vessels, all of which (eleven) were "sent in," seven apparently arrived at U.S. ports, but three of these were American-owned vessels, and their capture on suspicion of trading with the enemy led to litigation. Of the other four, two ships and two brigs (i.e., four British vessels), or one-fifth of the total recorded number of prizes, reached a U.S. port as prizes, and one of them was the badly mauled Post Office packet brig *Princess Amelia.* Captain Barney's share of the booty taken by the *Rossie,* according to Mary Barney's MEMOIR, amounted to only $1,000 because the much-vaunted prizes were destroyed at sea, were recaptured and did not make a United States port, or upon arrival in American waters had to be sold for little or nothing. However, possibly this amount stated is "net" after Captain Barney had cleaned up his indebtedness, for it is known that on July 11, 1812, as he was about to sail, he was served with a writ for a debt of $1,000, and Isaac McKim furnished the money as a loan so that the commodore could go and "pay off that suit and get aboard" his ship.

The number of American privateers that made "enormous profits" out of the war was very low; some made fair gains, but many experienced losses. If all the prizes taken by American privateers could have been sailed to United States ports, the financial outcome of privateering would have been a different story. Most of the British ships captured were very much slower and less handy than American armed merchant ships, and many an American privateer, handicapped in seeking to protect her prizes, was captured by British forces (vastly superior in number and gun power). Moreover, very few captured British ships with American prize crews aboard could hope to reach a United States port, for the entire coast line from the Mississippi to the Passamaquoddy was ultimately blockaded by the British Navy, and enemy frigates and sloops of war—much faster than the captured British merchant ships—roamed the seas and commanded all trade routes, seeking the prizes of American privateers and the restoration to the British flag of the vessels that had been captured.

Before the war was six months old, privateer owners of Boston, New York, and Norfolk, Va., united in petitioning Congress to help them by legislation, as their patriotic enterprises were proving unprofitable because of the fact that captured goods had to be sold for such low prices that no profit could be made by even a generally considered "successful" privateer. These privateer owners affirmed that the British ships captured—even the best of them—could not be sold at any price and that the profits of private naval warfare were by no means equivalent to the hazard. Guernsey, in his history NEW YORK CITY DURING THE WAR OF 1812, lists 120 privateers hailing from that city and states that of these, 57 took no prizes. Seven of the ships must have made good money, as they took 15 or more prizes each, and presumably 21 of the privateers (about one-sixth of the total number) operated profitably, as they captured not less than five British merchantmen.

Massachusetts (including Maine) was the leading privateer-owning state in the War of 1812, as it was in the War of the Revolution, commissioning 32 per cent of the total in the later war as against 27 per cent during the fight for independence. Pennsylvania, which ran Massachusetts a close second in the Revolutionary War by owning 25 per cent of the privateers commissioned, was a poor fourth in 1812-1815, with only 6 per cent. Maryland, third in the War of the Revolution by owning 15 per cent of all the privateers, was second in the War of 1812, with 22 per cent. New York, which stood only eighth in the first of the two wars with Britain, with only 1.3 per cent of the colonial total because of British occupancy during most of the war, stood a good third and close behind Maryland in the second war, with 20 per cent. New Hampshire, which owned 7 per cent of all the American privateers in 1775-1783 and was the fifth most active state in this line of warfare, was still fifth in the War of 1812, but its contribution had dropped to less than 3 per cent of the total, and it was being pressed hard in numerical importance by the Down East province of Maine. At the beginning of the War of 1812, New England ports were peculiarly free from blockades, for the British believed that as these maritime states were opposed to "Mr. Madison's war," it would be good policy on their part to be lax and somewhat friendly in their treatment of these states. After the war had progressed about a year, the British discovered their mistake and thereupon endeavored to establish a rigorous blockade, which greatly affected the number of privateers and naval vessels that got to sea and reduced the activities of small privateers, but did not put a stop to the continuing of depredations upon British commerce by fast, more powerful and larger privateers—as is proven by the increased destructiveness of these United States-commissioned armed merchantmen during the last year and the last months of the war.

There are records extant of at least 131 private armed vessels out of Baltimore during the War of 1812-1815; but of these, 121 have been identified as qualifying as Baltimore privateers and letters of marque, and of these, 114 were schooners, 3 brigs, 1 ship, 1 xebec (three-master of Mediterranean type), 1 sloop, and 1 lugger. Of the vessels whose date of construction is known, the number of vessels built during the various years, stated as a percentage of the total, was as follows:

Year	Percentage	Year	Percentage	Year	Percentage	Year	Percentage
1807	3.92	1810	7.84	1812	40.20	1814	6.86
1809	5.88	1811	9.80	1813	23.53	1815	1.97

The largest vessels commissioned out of Baltimore were the *Mammoth* of 376 tons, the *Chasseur* of 356 tons, the *Harpy* of 347 tons, the *Maria* of 346 tons, the *Expedition* of 338 tons, and the *Sabine* of 337 tons—all schooners. The smallest privateers (or letters of marque) out of Baltimore during the period were the lugger *General Pike* of 25 tons, the sloop *Liberty* of 55 tons, the schooner *Wasp* of 55 tons, the schooner *Halcyon* of 64 tons, the schooner *Hornet* of 73 tons, and the schooner *Sarah Ann* of 78 tons.

The following gives the total and average tonnage, armament, and complement figures for 121 Baltimore privately owned armed vessels commissioned during the War of 1812:

Tonnage		Number of Guns		Number of Crew	
Total tonnage	24,865	Total number of guns	759	Total number of men	6,027
Average per vessel	205	Average per vessel	6¼	Average per vessel	50

The *Chasseur,* with 16, had the largest number of guns, and she also had the biggest crew (150 men) of all the Baltimore privately owned armed vessels, while there were 13 of the 121 vessels that carried only 1 gun. The vessels with the smallest crews were the letter-of-marque schooners *Halcyon,* with 5 men; the *Tyro,* with 8; the *Wave,* with 9; the *Contradiction,* with 10; the *Active, Governor Shelby,* and *Sydney,* each with 11; and the *Eagle* and *Atalanta,* each with 12 men. These Baltimore privately owned armed vessels averaged eight men per gun and about one man for every four tons registered tonnage as privateers, but when they sailed with cargoes as letters of marque, both their armament and complement were greatly reduced.

Of the total of 121 vessels, 53 (or 44 per cent) are credited with taking prizes, and the other 68 (or 56 per cent) are not credited with capturing any enemy vessel. The total number of prizes taken, as per available records, can be stated as 547, or an average of about 4-½ prizes per commissioned privately owned armed vessel; the average number of prizes taken by the 53 vessels reporting such captures was 10-⅓. The Baltimore privateers credited with taking the largest number of prizes were the *Surprise*, with 43; the *Chasseur,* 36; the *Comet,* 35; the *Ultor,* 33; the *Mammoth,* 24; the *Lawrence,* 22; and the *Rossie,* 20.

Cranwell and Crane, in MEN OF MARQUE, say that Baltimore, "in the strict sense," owned 126 privately owned armed vessels during the War of 1812; that 78 were letters of marque, 27 purely privateers, and 21 were both; that these vessels took a total of 556 prizes, of which 138 are known to have arrived safely in a U.S.A. port; that the fate is unknown in regard to 95 vessels sent in; that 64 prizes were retaken by the enemy, lost at sea, or restored to the owners by the courts; that 152 captured enemy vessels were "burnt or sunk," 14 were ransomed, and 93 were voluntarily "given up" or "used as cartels"; that of the stated total of 126 vessels, 40 were captured by the enemy, 8 were chased ashore, and 6 were lost at sea; and that of these 54 Baltimore private armed vessels lost (43 per cent of the total commissioned), 41 were letters of marque and 13 privateers.

When Commodore Joshua Barney returned to Baltimore on October 22, 1812, in the *Rossie,* completing his first and only privateering cruise, he was convinced that privately owned armed merchantmen were too light to wage war with British cruisers. The privateer schooner *Rossie,* built at Baltimore in 1807 and, therefore, five years old, he condemned as "unfitted for service, being too old and worn out," and in his official report he wrote: "I find that small vessels will no longer answer the purpose and have declined proceeding on another cruise." The *Rossie* of 206 tons was not only one of the first Baltimore privateers to put to sea in the War of 1812 but also the largest of the first Maryland fleet of schooners to sail against enemy shipping. The first seven privately owned armed privateers to sail down the Chesapeake were:

Name of Schooner	Date of Sailing 1812	Year Built	Tonnage	Number of Guns	Number of Men	Total Number of Prizes Reported Taken
NONSUCH	July 10	1811	154	12	110	9
ROSSIE	July 11	1807	206	12	100	20
WASP	July 11	1810	55	1	40	4
HIGHFLYER	July 11	1811	138	6	85	13
COMET	July 10	1810	187	12	110	35
GLOBE	July 11	1809	180	7	90	14
DOLPHIN	July 11	1810	161	12	100	12

Baltimore privateer owners did not, as is generally supposed, follow Barney's advice and build only vessels bigger than the *Rossie* after 1812, for the nine privately owned Baltimore-built armed vessels constructed in 1814-1815 were as follow:

Name of Vessel	Built	Tonnage	Name of Vessel	Built	Tonnage	Name of Vessel	Built	Tonnage
CROGHAN	1814	132	JAVA	1814	153	CHARLES	1814	283
LEONIDAS	1814	135	SATURN	1814	170	SWIFT	1815	315
AMELIA	1814	143	VIDETTE	1814	261	EUTAW	1815	330

Some good-sized privateers, in addition to the *Swift* and *Eutaw* (built in 1815), were constructed in Baltimore during 1813 and the winter of 1813-1814. The largest of these bigger vessels, which most closely approached Commodore Barney's ideas as to size, were the *Mammoth* (376 tons), the *Harpy* (347 tons), and the *Maria* of 346 tons; but the outstanding Baltimore privateer, the *Chasseur* of 356 tons, credited with taking 36 prizes, was built in the winter of 1812-1813 and first commissioned February 23, 1813.

Baltimore investors in private armed vessels generally spread their capital among a number of different risks rather than completely owning one or more vessels or having a substantial interest in a few. The following Baltimore capitalists held a fraction, or a share, in each of eight or more vessels commissioned as privateers or letters of marque:

Name	Number of Vessels	Name	Number of Vessels	Name	Number of Vessels
John Hollins	15	James Williams	12	William Hollins	9
Henry Didier, Jr.	15	John Smith Hollins	11	John Gooding	9
Michael McBlair	15	Amos A. Williams	11	William T. Graham	9
Andrew Clopper	13	Levi Hollingsworth	10	James Bosley	8
John N. D'Arcy	13	Peter A. Karthaus	10	George J. Brown	8
Geo. P. Stephenson	13	Thomas Shepherd	10	Lyle Goodwin	8

The Hollins' collectively (four of them—John, John Smith, William, and William S.) owned fractions of 21 different private armed Baltimore vessels, and the various Williams' (five of them—Amos, Cumberland, Dutton, George, and James) collectively owned shares in 28 different vessels.

One of the most profitable as well as one of the last American privateering cruises was that of the *Harpy* of 347 tons (a Baltimore-built vessel, but with New York as her home port). Under command of Capt. William Nichols, she sailed from Portsmouth, N.H., October 2, 1814, and was back in the harbor thirty-one days later with sixty prisoners aboard, "a hold full of prize goods," and a record of having taken five prizes in that time (three ships, one brig, and one schooner), of which four were sent in, and the schooner *Britannia,* which was in ballast, had been burned. Two of these prizes, the *Amazon* of 360 tons (6 guns) and the *Bridges* of 440 tons (6 guns), were transports carrying large quantities of supplies and had on board several army officers, and a third was the new brig *Halifax Packet,* which was sent in and arrived safely. Niles WEEKLY REGISTER affirmed that the profits on this 31-day cruise of the *Harpy* would run between $400,000 and $500,000. Captain Nichols quickly unloaded his cargo of prize goods, landed his prisoners, took on desired food and water, signed on some new hands, and sailed for European waters. This time the *Harpy* was at sea 85 days and returned to Salem, Mass., on February 5, 1815, with her hold again full of valuable articles captured in the Bay of Biscay and off the coasts of England and the Iberian peninsula. During this second section of the cruise, the *Harpy* took seven prizes (four ships, two brigs, and one schooner), of which three were sent in, two used as cartels, and two burned. The last prize taken was the ship *Jane* from Antigua to London. This vessel had English bills of exchange amounting to about £100,000 sterling, but her valuable cargo of government stores could not be transferred to the tightly packed holds of the American privateer. As Captain Nichols wanted to sail back home and did not want to carry his forty-five prisoners on a westbound crossing of the Atlantic in midwinter, he took the bills of exchange, threw the *Jane's* cargo overboard, and made that vessel into a cartel. The following is the recorded list of the prize cargo aboard the *Harpy:*

One hundred and eighty-eight boxes and trunks and one hundred and sixteen hogsheads and casks of dry goods, jewelry, plate, women's rich dresses, navy trimmings, broadcloths, fine clothing, etc. Three hundred and thirty boxes fresh Malaga raisins, sixty-six frails fresh Turkey figs, one hundred and fifty-eight pieces of British manufactured goods, twenty-nine bolts of canvas, a quantity of cordage, ten pipes of sherry wine, three barrels of gunpowder, carronades, muskets, pistols, cutlasses, sails, signal flags, lamps and paint oil, white and patent sheet lead, nautical instruments, cut and other glass, medicines, and upwards of one hundred thousand pounds sterling in British Treasury notes and bills of exchange.

From the time that the *Harpy* obtained her first commission (dated New York, April 12, 1814) to the time that she ended her privateering cruises against the enemy upon her arrival at Salem, Mass., February 5, 1815, the vessel, in less than ten months' time and in less than eight months at sea, had taken eighteen British prizes (nine ships, seven brigs, two schooners) and had proved very profitable to her owners and crew and of great service to her country.

The Baltimore privateer *Midas* of 265 tons was one of the few American vessels to have her license revoked by the United States Government for violation of instructions issued by the State Department for the conduct of privateers. Whereas the government was technically correct in its ruling and it is unquestionably praiseworthy to do all things necessary to eradicate piracy, yet the sympathy of the American people was with Capt. Alexander Thompson, commander of the *Midas,* rather than against him. While the *Midas* was refitting and getting a crew at Savannah after completing a successful cruise against the enemy, news reached Captain Thompson of the British burning of Washington, and with patriotic intent he determined "to avenge this insult by retaliating in kind." The *Midas,* on her next cruise, was off Harbour Island in the Bahamas on September 13, 1814, and Thompson sent a party of forty-five men ashore to destroy the buildings and seize all available specie of this British settlement. Four sizable buildings and fourteen huts were burned and some $16,000 in specie taken, following which the *Midas* cruised north. The privateer captured a British ship, which she took into Boston, and later sailed down the coast to Wilmington, where Captain Thompson relinquished his command after taking fifteen prizes with the *Midas* in about a year's time. The collector of customs at Savannah, Ga., sent an extract of the log of the *Midas* to the secretary of state at Washington, who called the matter of Captain Thompson's warlike act in the Bahamas to the attention of the president, with the result that orders were given for the revocation of the privateer's commission. The letter addressed to the collector of customs dated November 25, 1814, says:

It appears that on September 13 last, Captain Thompson authorized a landing with armed force from the *Midas* to the plantation of Mr. Barnett on Harbour Island within the British Dominions and that the officer to whom it was confided acting under order from Captain Thompson to set fire to the buildings "did so actually set fire to the whole consisting of four handsome dwelling houses and 14 Negro huts." The extract of the journal has been laid before the President; and upon the unequivocal evidence which that affords of the wilful deviation of Captain Thompson from the instruction for the private armed vessels of the U.S. issued at the commencement of the war, which enjoined the strictest regard to the usages of civilized nations, he directs that the commission of the *Midas* be revoked. . . . In communicating to you this determination of the President, it is proper to remark that by whatsoever acts of flagrant outrage upon defenseless towns and property of unarmed and unresisting individuals, the British naval and military officers on their maritime or inland frontiers may have provoked or may hereafter provoke severe measure of retribution, it is for the government alone to prescribe the manner and means of retaliation.

This expressed policy is, of course, the right one, for it is the government and not private individuals that should and must decide on how to wage war and how to defend the country's interests and retaliate—if at all—for the enemy's wanton destruction and inhumanity. However, the point naturally arises as to why it was deemed right and proper for a United States privately owned armed vessel, duly commissioned, to wage war to destroy or confiscate enemy privately owned property at sea but not on land. A privately owned vessel burned by the U.S. naval vessels and privateers was often the floating home of her owner-captain and at times represented his entire possessions and capital, and its destruction was for him a dreadful calamity. Why was it right and proper and with "the strictest regard to the usages of civilized nations" to destroy floating but not stationary private property? Britain was responsible to a great degree for international practices that, through usage, had come to be considered as a law of nations, and Britain was a selfish maritime power. However, on August 24, 1814, it had wantonly set fire to Washington, the capital of the United States, and had sought to destroy completely not only the capitol building but also the executive mansion, which was the home of the president. Since when, with "the strictest regard to the usages of civilized nations," had it become proper to destroy the home of the most honored citizen of the nation, but was a crime to burn similarly the home of a planter or the hut of a slave? Twenty days after the British went through Washington with a torch, Capt. Alexander Thompson, enraged at such cruel destruction of non-military objects, made a token gesture of reprisal, which, even if denounced by the homeless President Madison, was at least inspired by patriotism and understood by Thompson's fellow citizens. The White House of today stands as a monument to cruel British destruction and American humiliation, for only the outside walls of the executive mansion survived the fire, and when the structure was rebuilt, its exterior was painted white to hide the marks of fire. It was wrong for Captain Thompson to destroy by fire a few British homes in retaliation for the burning of the American capital, but from the early days of the Revolution, Britain, without any excuse such as the eradication of forts and military structures, had made it a punitive practice to destroy homes and private property. On October 18, 1775, Falmouth, Maine, which did not have a gun to defend it, was bombarded and burned by the British and the homes and private property of its citizens destroyed merely in punishment for the town's peaceful expressions of sympathy for the patriotic cause. On January 1, 1776, Norfolk, Va., was furiously bombarded by the British, and sailors set fire to the town, which burned steadily for three days and until the entire community of homes and places of business was destroyed; when the destructive fire had spent itself, only a solitary building—and that a church—remained standing. New London, Conn., and Gloucester, Mass., were burned by the British to intimidate the people of the communities, and on September 5, 1778, Earl Grey attacked defenseless New Bedford, Mass., and not only burned seventy ships but also almost completely destroyed the town.

Capt. Alexander Thompson had voluntarily left the *Midas* before he was officially censured for endeavoring to seek revenge upon the British by following mildly in their footsteps, but the schooner *Midas* was herself held to blame for the indiscretion of her captain, and the owners were informed that no matter who was put on board to command her, the vessel would not be given a commission to engage further as a privateer or, if placed in trade, to operate with letters of marque. Fortunately, the war was nearing its close, for in December 1814 the *Midas,* under command of Capt. David B. Dickenson, "a very prudent man," loaded a cargo of flour for the West Indies, but could not sail. The government refused to commission her to carry a few guns aboard to defend herself and wage war on enemy shipping as she sailed deep laden between ports as a letter of marque. Before the burning of Washington by the British and of Harbour Island, Bahamas, by Captain Thompson, the *Midas* was at Savannah when the British privateer *Dash* (4 guns; forty men) appeared off the Georgia coast and took three prizes. Captain Thompson promptly sailed, captured the armed British vessel and her prizes (the *Good Intent, Elizabeth and Jane,* and the *Martha and Mary*), and then regained possession of the British ship *Astrea* (14 guns), a former prize of the American privateer *Ultor* that had been retaken from her American prize crew by a British frigate. The *Midas,* under Thompson, is credited with taking fifteen prizes, but two of these, the British privateer schooner *Dash* and the ship *Pizarro,* sailing under Spanish colors, led to much legal controversy. Captain Thompson was in disgrace with the administration, and the owners and crew of the *Midas* were incensed when the courts, leaning backwards, ruled that the capture of the *Pizarro* (carrying British-owned goods and with the actual ownership of the vessel herself in doubt) was improper. A number of men taken on the British privateer *Dash* were Negroes, and a controversy continued for many long years as to whether or not such men were prisoners of war that entitled their captors to $100 a head bounty or slaves and, therefore, to be classed as prize goods.

The *Saranac* of 241 tons (10 guns; ninety men), built in Talbot County, Maryland, in 1813, was the last privateer to leave the Chesapeake to cruise against the enemy during the War of 1812. With a commission dated January 3, 1815, and Capt. Henry Dashiell in command, this schooner sailed about the middle of January, some three weeks after the peace treaty had been signed at Ghent and, it is said, "about three weeks before news of it reached American shores." The cruise of the *Saranac* is of interest not because of its financial success but because (1) there is available a preserved letter of instructions from the owners to the captain of the privateer and (2) the great amount of controversy and bitterness among both owners and crew that this cruise and the conduct of Captain Dashiell engendered. It is not known whether or not such detailed instructions as those given the commander of the *Saranac* by her owners were general, but it is believed that orders of a somewhat similar nature to Baltimore privateer commanders, although undoubtedly less lengthy, were not uncommon during the last year or more of the war.

It has been facetiously suggested that the cruise of the *Saranac* was hoodooed as far as profits were concerned because the vessel had thirteen owners, but it would seem that the schooner must have had fourteen owners, for the letter of instructions to Captain Dashiell is signed by Lemuel Taylor "for self and other owners," and the official list of thirteen owners does not include the name of Lemuel Taylor (who was recorded as part owner of the Baltimore privateers *Dolphin, Tom, Surprise, Whig,* and *Pilot* and was, therefore, experienced in that class of investment). Most of the fraction, or part, owners of the *Saranac* were well acquainted with taking gambles in privateers, for among the names are Henry Didier, Jr., who owned part of fifteen privately owned armed vessels; Peter Arnold Karthaus, who owned a part of 10; William T. Graham, 9; James Bosley, 8; and Nicholas Stansbury, 7. The recorded owners of the *Saranac* held, on an average, pieces in six Baltimore privateers. It would seem that Lemuel Taylor had been elected by the owners as a sort of managing director of their investment, and a part of his most detailed instructions to Capt. Henry Dashiell is reproduced herewith:

To shape your course for Bermuda off and to the eastward of which you will cruise for about 10 days, you will then steer for Barbados to windward of which you will cruise for about 20 days, if you have not then disposed of all your prizemasters, spare officers, and men, having 35 in number on board, you will steer for Madeira about which and to the south and west thereof you will cruise until you think the season is sufficiently advanced for you to cruise in and off the British and Irish Channels, when you will steer for the British Channel running close to the Rock of Lisbon and through the Bay of Biscay and cruise in and off the British and Irish Channels until you have disposed of all your prizemasters, spare officers, and men or consumed all your water and provisions, you will then return to any port in the United States, east of the Delaware, and if the *Saranac* is not full of goods you will return by the Grand Banks and the coast of Nova Scotia along which it is likely you may fall in with vessels laden with dry goods bound from Halifax to Castine and by that means fill the schooner. If you should be so fortunate as to capture a vessel laden with dry goods sufficient to load the *Saranac* any time before you leave the station off Barbados you will remove your water and provisions to the prize and load the *Saranac* with the goods and return to any port in the United States and deliver the goods to our agent and proceed on your cruise immediately. You will always take as many valuable goods on board the *Saranac* as you can and you may take a larger quantity on board by disposing of your empty casks & reducing the accommodations of your officers and men which they will cheerfully submit to in order to get in goods and by that means you may get the *Saranac* full and make a good cruise even if your prizes should be so unfortunate as to be retaken. . . . In selecting the ports to send your prizes to, you will determine by the place where you may be when they are captured and in some measure from the nature of the cargoes, as a cargo of cotton, flour and wool will fetch nearly twice as much in any port east of the Delaware as they do in the South. Prizes of little value must be destroyed except when it is necessary to send in prisoners, none are to be ransomed, in all cases where you take goods on board the *Saranac* you must keep one or more of the crew of the vessel they are taken out of or the goods will not be condemned. We will again call your attention to the necessity of getting many valuable goods in the *Saranac* believing that the only profit that can be counted on with any degree of certainty. . . . No vessel loaded with fish or barilla is worth sending in, and red wine from France, Spain and Portugal will sell for little if any more than will pay the duties. Large convoys generally leave England the last of December and first of January for the Mediterranean, East Indies and the Brazils and the West Indies. The convoys leave St. Thomas and Jamaica for England say the first about the 10th February the next about the 5th March and the next the first of May.

The outstanding characteristics of the Baltimore schooners used for privateering were (1) speed, (2) wetness, and (3) overcrowding with big crews, which caused a pronounced lack of elementary comforts. The latter quality was responsible for much irritability on the part of both officers and men; therefore, it is surprising to find that a landsman-owner should write so glibly of "reducing the accommodations" of men and of their "cheerfully" submitting when they were already jammed into quarters that were inadequate and not only ruinous to dispositions but also a positive menace to health and efficient service. Instead of carrying one man for each 8 tons or so of measurement, the *Saranac* put a man aboard for each 2½ tons, and the *Fox,* an 8-gun 162-ton Baltimore schooner, was sent to sea with 120 men aboard—one of each 1⅓ tons. Moreover, these privateers were often required to carry some thirty, forty, fifty, or even more prisoners on board, so the crowded conditions that prevailed at times were not exaggerated when described as "horrible, inhuman and deplorable."

The *Saranac* returned to Baltimore on May 10, 1815, with the war ended and practically nothing in her holds. She had captured only five small schooners, had sunk three of them as worthless, and had used the other two as cartels for prisoners. The owners of the privateer were naturally disappointed, but several members of the crew, including many of the petty officers, were not only much disgruntled at having nothing to show for their four months' work but also articulate in their denunciation of Captain Dashiell's lack of ability and courage. They even went so far as to publish a statement as a paid advertisement, which was printed in the May 17 issue of the Baltimore AMERICAN. In the preamble of a very lengthy, detailed account of the voyage as "taken from a summary journal kept by an officer on board," it was said that the records would "show that a fine vessel, good armament, and a brave and willing crew are not sufficient to make an enterprise succeed, without a capable leader." Captain Dashiell replied to the attack in the columns of the AMERICAN by printing a brief statement signed by the three lieutenants (or mates) and the sailing master, in which they certified that they were "satisfied" with their captain's conduct; that they felt him to be "an able and enterprising commander, not rash, but humane and discreet, and of undaunted behavior." There was a decided difference of opinion, expressed in public, as to Captain Dashiell's enterprise, ability and courage, and both the crew and the owners frankly admitted that they would have been better off if the cruise had not been undertaken. After printing Captain Dashiell's certificate, the editors of the AMERICAN closed its sheets to both sides and refused to print any more controversial matter on the subject of the *Saranac's* disappointing cruise.

The *Saranac* was the last privateer to sail from Baltimore. The Baltimore-owned privateer schooner *Tomahawk* of 202 tons (9 guns; eighty-four men), under command of Capt. Philip Besson, was commissioned in Boston January 11, 1815, and, sailing from that port on January 20, was captured by the big British warship *Bulwark* after a ten-hour chase in heavy seas. The last letters of marque issued at Baltimore were to the new schooner *Swift* of 315 tons (6 guns; forty men), under the command of Capt. William Reeves, and were dated January 27, 1815 (thirty-four days after the peace treaty had been signed at Ghent). The *Swift* engaged in peaceful trade and took no prizes.

Historians delving into available records are generally agreed that United States privateers seized at least 1,344 British vessels during the War of 1812, but as Maclay says, "Like their brethren of the Revolution, our privateersmen in the later war were careless in matters of record, and it is highly probable that a large number of seizures were made of which little trace is left." A much smaller number of privately owned armed vessels was commissioned in the War of 1812 than in the War of the Revolution, and in the later war the United States privateers evidently seized well over twice as many British vessels as did the more numerous fleet during the long, protracted fight for independence. When comparing the number of privateers commissioned or actually used in the two wars with Britain, it is well to note that hostilities lasted about eight years (1775-1783) in the battle for independence, whereas the War of 1812 occupied about three years, taking all the waters of the globe into consideration, although the time between the declaration of war (June 18, 1812) and the signing of the peace treaty (at Ghent, Belgium) on Christmas Eve 1815 was only a little over two and a half years.

Trading with the Enemy—British Licenses

During the War of the Revolution, there were many Royalists in the colonies whose sympathies, even after the Declaration of Independence, lay with Britain to the extent that they wanted to remain part of the British Empire and considered the war merely as a rebellion against the king and all constituted legitimate authority. Americans battling for liberty and independence during the years 1775-1783 had to fight many of their countrymen (who combated them either openly or covertly) as well as the British, and the designation of "traitor" ultimately depended on which side won the struggle—the Royalists or the Revolutionists, who were known to the British and all the king's men as rebels. Under such conditions, the trading of some Americans with the British was understandable, and the Royalists were in fact loyalists to the ruling power and traditions of the past. When war was declared by the United States against Britain in June 1812, the country was presumably a united nation, and even though the maritime New England states were opposed to "Mr. Madison's war" and the belligerent attitude of the West and South, the fundamental principle of patriotism demanded that all the people of the United States contribute to the war effort and fight the enemy, which up to that time had gloried in its arrogant oppression of and discrimination against the young republic and had not conceded in full the liberty and independence associated with a free sovereign state.

During the wars that Britain waged with France and its Indian allies, the British colonists in America had not enthusiastically and unselfishly supported the mother country, but there were many reasons (such as Britain's arbitrary navigation and trade acts) for this attitude, and plausible excuses could be found for colonial merchants' profiting by trading with the enemy to the detriment of Britain and its empire. After the peace of 1783 and still more so after the adoption of the Constitution in 1789, the United States as a separate and sovereign national entity could reasonably expect and demand the patriotic loyalty of all of its subjects in relation to international matters notwithstanding their political views on domestic matters; but evidently the War of 1812 occurred too soon to find all sections of the country and all its varied production and commercial interests imbued with a spirit of unselfish devotion to country and to the fundamental patriotism essential to national honor and well-being.

Cranwell and Crane, in MEN OF MARQUE (giving a history of private armed vessels out of Baltimore during the War of 1812), have written of the conditions existing in the United States in 1812:

> The military forces of the New England states can hardly be said to have carried on the war with enthusiasm. There was an excellent trade with Canada prior to the outbreak of hostilities, and neither the merchants nor the other members of the community wanted that ruined by military operations along the border. And indeed, it was not ruined, but rather it tended to increase as American flour was smuggled across the border to feed English soldiers in Canada. At sea the situation was somewhat different; here one could trade with one hand and plunder with the other. Many staunch privateers sailed from Salem, Boston, and Newburyport, from the river mouths of Maine, and from New London and Portsmouth and Portland, as well as from New York and Philadelphia. But besides the privateers there sailed from these ports American vessels with licenses to pass the British blockading squadrons, licenses which were supposed to protect them from British cruisers at sea and from English privateers. These American vessels carried produce to the West Indies, they helped supply the English fleet in American waters, and above all, and most important to England, they carried the flour that kept Wellington in Portugal. American ships and American supplies had helped maintain an English army in that country before the War of 1812, and it was essential that the supply continue if Wellington were to remain. It was of far greater importance to Great Britain that he stay there and contain a French army of three hundred thousand men than it was to destroy American commerce. So licenses were issued by British admirals to American merchants who were "well disposed towards His Majesty's interests." The more patriotic Americans and those who hated the English more than they hated the French felt and said that this trade with England amounted to treason; a great many English naval officers felt the same way and refused to honor the licenses, seizing the vessels which carried them just as they seized every other American vessel. It should be said, however, that most of the seizures were made after the licensed craft had delivered their cargoes at Lisbon and were returning with gold or laden with merchandise. One English naval officer, indeed, is alleged to have made a very neat business of issuing licenses to permit American merchantmen to reach Lisbon unmolested, then holding them up for ransom on their way back. . . . Ships bearing licenses were invariably seized by American privateers and sent in as prizes. In most instances these seizures were upheld by the courts and the vessels were sold to the accounts of their captors.

The War of 1812 was presumably fought for the American merchant marine—for American shipowners, sailors, and merchants engaged in ocean-carrying trade. Whereas American sailors, believing that the war was waged in their interest, supported it loyally throughout the conflict, many shipowners and merchants evidently thought more of immediate profits than of principles and more of their pockets than of their country as a whole. In the early days of the war—knowing full well that it had been declared by the pro-French political element in the United States—Britain, in blockading the coast, covered the area extending from New York south to the Mississippi River and exempted New England because of its believed sympathy for the cause of Britain in its war with Napoleon. The activities of certain naval vessels sailing from New England ports and the exploits of a swarm of northern privateers required the British to extend the blockade to the New England coast, and a cordon of British frigates and sloops of war between Cape Cod and Halifax excited the wrath of New Englanders and caused many Massachusetts shipowners and merchants to withdraw their support from "Mr. Madison's war" and waver in their allegiance to their country. Many resented the loss of a profitable trade that they had enjoyed with Britain, and they were strong enough politically so that "Massachusetts came within an ell of declaring herself neutral." A good many Massachusetts ships, it is said, "continued in British service, supplying the British forces under license issued by British admirals." This condition became of such moment in a national sense that an embargo was laid on December 17, 1813, as a distinct war measure intended to "prevent disloyal Massachusetts shipowners from trading with the enemies of the United States."

At the time war was declared by the United States, Britain was operating extensively against France and Napoleonic imperialism on the Iberian peninsula, and its army depended largely on America for provisions. High prices for such supplies tempted many United States shipowning merchants not only to run the risk of capture and confiscation of their vessels and cargoes but also "to brave the odium of their fellow-countrymen." They argued that they were opposed to the war, which was merely "another of the damned fool moves" made by the government following Jefferson's first inauguration, all of which seemed to have been aimed at the maritime states and had operated to the great harm, embarrassment, and humiliation of American shipowners and foreign commerce. Moreover, they asserted there was no harm so far as the United States was concerned in supplying the British with food for their armies, which were fighting Napoleonism on the continent of Europe. Feeding the British army in Spain, it was asserted, would help rather than injure the United States; for it would give employment to ships and men who would otherwise be idle because of the British blockade, and it would bring money to America to help the nation to fight its enemy. It was also argued that if the British Army was encouraged to wage war on the continent of Europe, such troops and associated British resources could not be used to fight in America. Because of the attitude of New England toward "Mr. Madison's war," Britain had been quite lax in the blockade of that coast, while it concentrated its available naval power for a long time in bottling up the Chesapeake and Delaware and patrolling the coast south of the Hudson. As a matter of fact, this initial laxity of blockade of the American coast northeast of New York was because Britain desired to encourage all American commerce that would help in the war being waged against Napoleon and France. Many American merchants, however, in dealing with the enemy or in shipping provisions and stores into enemy territory, did not have the defense of operating to keep a British army in Spain for a worthy purpose. In shipping provisions and supplies into Canada, they assisted in feeding and supplying with needed materials the British troops who were stationed there to fight America, and in making such shipments to the British West Indies, they were contributing to the support of the Royal Navy in American waters. Again, while the United States was not in sympathy with arrogant and imperialistic Napoleonism, it was a fact that the war between Britain and France operated to the interest of the United States on the high seas and that the cause of America could be helped by strengthening the French and weakening the British naval and maritime power and by friendly relations with France and its allies (or subjugated states) so that their ports were open to American vessels to provision and refit and to receive and dispose of prizes.

American privateers were one hundred per cent patriotic and from the start of the war were out to suppress all trading with the enemy by means of "British licenses" or otherwise. This attitude, while laudable, was but natural, for privateering was a business venture, with private property and personal services organized for profit or gain; a privateer could be expected to seize any property that belonged to or was intended for the enemy and any ship caught trading with the enemy. Many cargoes were sent from United States ports to Halifax, N.S., and thence to Spain, and other cargoes remained for consumption in Canada. In September 1813, after the war had been in effect for some fifteen months, 17,000 barrels of flour, it is said, arrived at Halifax from United States ports. In the early days of the war, Boston had definitely shown its disapproval of Madison's Non-importation Act of 1812, which was well known to be merely a prelude to a declaration of war against Britain. From the start, Massachusetts and maritime New England were opposed to the war and branded it as dishonest of purpose and initiated at an inopportune time by a thoroughly unprepared nation—not for the cause stated of "free trade and sailors' rights" and in "national honor as required by the provisions of the Macon Act of 1810" but for pro-French reasons and with an expressed desire of the West to gain domination over the Great Lakes and bring Canada into the Union. (The Macon Act of 1810 stipulated that whenever either England or France should repeal its objectionable measures against the United States, nonintercourse should be adopted against the others; but both nations had consistently acted in opposition to the United States as strongly as their selfish interests suggested and just so far as they had the power to put their desires into effect.) Historian Morison, of Massachusetts, says:

During the first six months of the war, every Atlantic port of the United States traded with England, under license from the British blockading squadron. The ship *Ariadne* of Boston, owned by Amorys, Perkinses, Parsons and Nathaniel Goddard, was a case in point. Obtaining informal permission from the Attorney General and the Secretary of the Treasury, she took a cargo of provisions to Cadiz under British license. It was currently believed in Massachusetts that tobacco from President Madison's own plantation went to England by this system, which Congress made no effort to restrain until the crops of 1812 had found profitable market. Much contraband trade went on over the New Brunswick and Florida frontiers and part of the Massachusetts fleet took out Portuguese papers. . . . By 1813 conditions had changed. Only five American and thirty-nine neutral vessels cleared that year from Boston for foreign ports. On September 8 there lay idle in Boston harbor, with topmasts housed and mastheads covered with inverted tar-barrels or canvas bags ("Madison's night caps") to prevent rotting, 91 ships, 111 barques and brigs, and 45 schooners. In December 1813 Congress passed a new embargo act which forbade all coastwise as well as foreign traffic and was rigorously enforced. . . . Such a clamor arose against "Madison's embargo" that Congress repealed it in the spring of 1814; but no sooner was this done than [with Napoleon beaten and exiled to Elba and with no further need by England of American provisions and supplies] the British blockade was extended from Long Island Sound to the Penobscot.

One of the first privateers to put to sea was the 206-ton Baltimore schooner *Rossie* (12 guns; 100 men), which, under command of the old sea fighter Capt. Joshua Barney, had sailed from the Chesapeake on July 14, 1812, and on July 22 captured her first prize, the American brig *Nymph* of Newburyport, which was caught trading with the enemy. The *Nymph* was sent into Boston under a prize crew, but before the customs authorities could contact her, an organized group of men boarded the vessel at quarantine, rifled the vessel of all her papers, and removed all possible documentary evidence against the brig. When Captain Barney reached Baltimore on October 22, 1812, after completing what was called "a 90-day cruise" (which apparently excludes the time spent at Newport, R. I.), the *Rossie* had "taken 14 British vessels and detained 4 Americans," and Barney, in his report, indignantly condemned the issuance of licenses by the British, their use by Americans, and all trading of his countrymen with the enemy. Writing an official statement of his cruise with the privateer *Rossie,* Barney also said:

The first vessel I fell in with was an *American* from *Martinique* bound to Bath (U. S.) his cargo, *molasses, the produce of that island* certified under the hand and seal of the *British* Governor. After examining him strictly (*under English colors*) and obtained all the information I could, I informed him, I was an *American,* as such should send him in for a breach of the non-importation law, he then produced *Spanish* clearances from *Porto Rico* and insisted he was from that port, however, I ordered the vessel into port. After I had taken possession of his vessel, he informed me that a ship then in sight was also from Martinique. In consequence I gave chase and came up with her, she showed me a clearance also (forged) from *Porto Rico* and denied having come from Martinique, but on examining his papers, I found every proof of the fact except the Governor's pass, being under English colors. I examined his manifest and there appeared on the face of it a report of only *one half* of it, for his entry into the U.S. I asked him how he could get over making a report of only one half of his cargo on arrival. He said it was the usual mode [carried over from colonial days]. That they never entered more than the half. I then demanded what he would do in case of seizure, his answer was, that his ship belongs to *General William King,* that no person dared to seize her, if he did, Mr. *Madison* was the friend of Mr. King and would order her release. (I also questioned the other captain the same way, he also informed me that "everybody" to the eastward acted in the same manner.) After I had learnt all I could I informed him that he had violated laws of his country in a twofold degree. Firstly by a breach of the non-importation law and secondly by a breach of the revenue law and that I should make a prize of him. He then threatened me with the power and standing of his owner. I knew General W. King to be what is called a good Democrat and friendly to the executive. I considered such a seizure at this time would be made a handle by the enemies of the administration and I released him, fully determined to give you the above information. During the time I acted the Englishman with the Americans, I found out that the Revenue was defrauded by the eastern men without ceremony. They introduced large cargoes of drygoods from the enemies ports which are *run* in *without* duties.

Capt. Joshua Barney, a hero of the War of the Revolution and for some time later a commodore in the naval service of France, was one of Maryland's (and, in fact, of the nation's) leading men, renowned for distinguished valor at sea. He was primarily a navy man and did not take kindly to privateering, making but the one cruise. His further activity in the war was in command of a flotilla of relatively useless "Jefferson gunboats." Barney was growing old and did not hesitate to express his convictions in regard to those things that affected the well-being of his country and the proper prosecution of the war. On April 4, 1814, he wrote the Navy Department: "Both parties on the eastern shore [Chesapeake] discourage enlistment, each wishing to keep the men for the next election as they are so equally divided that the loss of a few votes would throw the balance to the hands of the other party. I have given assurance that the Democrats shall be there on the first of October next to vote, which I hope shall have some effect." This indicates that politics has not changed much with advancing years, and Barney's unsuccessful attempts to get men into the naval service suggests one of the reasons why the British met with practically no resistance when they made their attack on Washington; but Barney and the few men under him did do some valiant fighting on shore after the "mosquito fleet" had been driven up the Patuxent River and Barney had burned it.

The *Tom* of 286 tons (14 guns; 140 men), under the command of Capt. Thomas Wilson, commissioned August 1, 1812, was launched as a privateer at Fell's Point, Baltimore, on July 2, and when the *Tom* sailed, she was proclaimed to be "the most powerful commerce raider to have put to sea from Chesapeake Bay." The *Tom,* after capturing a large, valuable, and powerfully armed British ship off the Carolina coast, steered north for the New England coast to search, it is said, for British vessels and "illicit Yankee traders." The *Tom* took the American ship *Independence* and put an American prizemaster alone aboard, as "he suspected the ship of carrying English goods." Cranwell and Crane, historians of Baltimore privateering in the War of 1812, write in referring to this incident: "This was good privateering practice, as, when a suspected ship docked at an American port and English-owned goods were found aboard, the privateer's prizemaster could make a prize claim against the foreign-owned property. Should the cargo prove to be American-owned, the privateer would not have depleted her crew uselessly, and her owners could not be prosecuted on charges of illegal seizure of American vessels." This procedure was undoubtedly in the interest of the privateer owners and crew, but seems to have given but little attention to the economic well-being of an American merchantman when "suspicion" alone was sufficient to cause a legitimate trader to be subjected to delay, humiliation, annoyance, and expense.

Before the pre-war Madison non-importation act, or embargo, went into effect, a number of American vessels, whose owners had been profitably engaged in trade with the Iberian peninsula, hastened to Lisbon with cargoes for the allied British and Spanish armies, and Britain, needing the supplies, promptly took steps to encourage such trade, even in the face of the war declared by the United States. The plan of issuing "British licenses" to American vessels engaged in this trade developed, and it was stated that the possession of such a license would make a United States-owned vessel "exempt from seizure by any British naval cruiser or privateer, notwithstanding the fact that the two countries were at war." This British license was not given gratis; a considerable fee was charged for the document and for the protection which it presumably afforded. New England shipping interests were divided in their attitude in regard to the matter, for the acceptance of a British license implied that the holder was, as the document stated, "well disposed towards His Majesty's interests." However, a number of merchants embarked in the trade and accepted and paid for "British licenses"; others would neither pay the high fee charged for the license nor agree with the statement which affirmed that they were well inclined toward the interests of the king. Whereas the British were most desirous of building up this trade between the United States and their own forces, which were waging war against Napoleonic imperialism, yet, apparently, the fee paid by an American vessel in obtaining a license to engage in such commerce was deemed of much importance, and British cruisers were especially watchful to seize vessels participating in this trade that were not licensed. However, in a nationalistic sense, the commerce engaged in by ships of countries that were at war with each other was irregular and illegitimate and naturally proved unsatisfactory. American patriots stormed and fumed, and United States privateers set out with determination to suppress all illicit trade between the nations at war. The record of Britain in the matter is, moreover, tainted and "so dishonorable, it smells to heaven." In many instances, Britain, after accepting a fee for protection, turned pirate and seized American ships with their cargoes, but more generally confiscated the cash on board vessels returning from the Iberian peninsula, although they were operating under the protection and had paid the price of a British license. In a periodical of 1813, we read: "Fifteen or twenty *semi-American* vessels with British licenses have been condemned at Bermuda. A grand double speculation of the enemy; in first selling the licenses, and then making good prizes of those that had them."

The British war schooner *Plumper,* under the command of Captain Bray of the Royal Navy, proved herself particularly obnoxious as a pirate. Bray first came into the limelight when he captured the fine coppered American ship *Margaret,* which, after delivering a load of provisions for the British Army on the Continent, had proceeded to Liverpool for a return cargo and had sailed for the United States before it was known that war had broken out. This was apparently a legitimate capture, and Bray sent the ship and her cargo (worth $50,000), with a prize crew of thirteen men aboard, into Halifax. The *Margaret* fortunately was recaptured by the little American schooner privateer *Teazer,* mounting 2 guns and carrying fifty men. Later, Bray, with the *Plumper,* despoiled at least eight and probably ten American-owned merchantmen operating under British licenses of the specie they had on board when they were returning to the United States after delivering cargoes on the Continent destined for the British Army. After robbing these vessels of their cash, each was permitted to proceed in the hope that her owners would be foolish enough to take the gamble of another venture of taking a profitable cargo of provisions to Lisbon and getting back home with the cash resulting from the sale of their goods. Captain Bray, in a letter, explains and justifies his practice of stealing cash from American vessels when he wrote: "Finding some few dollars in the brig which I have taken, I thought it more wise to take them out, as there is no difficulty in sharing them, and our people are very poor, some of them having had no money for these nine years past." This is a terrible arraignment of the British Navy and its impressment of men, which made the lot of many of them—forced to serve against their will —but little better than that of galley slaves and no better than that of the inmates of jails. In this connection, the following statement, which appeared in a Baltimore newspaper of April 10, 1813, is of interest: "A number of British seamen, from thirty to fifty, have recently escaped from the squadron [blockading the Chesapeake]. One poor fellow had not been on shore for thirteen years, during which time he had never received one cent of pay or prize money." And Britain boasted of being "the land of the free" and that "Britons never shall be slaves." It is surprising that the morale of the British fleet was as good as it was when a large number of the members of the crews aboard the vessels of war had been impressed against their will and the vessels were manned to a great degree by forced labor.

Maclay says that the money pirated by Captain Bray of H.B.M. schooner *Plumper* was evidently in no very great amount, but that larger vessels were despoiled of very substantial sums by other vessels of the British Navy. We read:

The *Maria* of New York was stopped by the *Vixen* and relieved of thirty thousand dollars; the *Nautilus* from Oporto was fleeced of twelve thousand dollars by the frigate *Spartan,* which also took the same amount out of the *Hiram* from Lisbon; seven thousand dollars from the brig *Jew* and twelve thousand dollars from the brig *Mary.* The frigate *Melampus* took thirty-two thousand dollars out of one ship, and twenty-two thousand dollars were taken in the *Cordelia* by the *Emulous.*

Notwithstanding these unscrupulous raids by British men-of-war on returning American merchantmen operating under British licenses, it would seem that during the early part of the war large sums reached the United States representing the revenue from goods sold in Europe, and it is said that some five million dollars arrived in American ports from Lisbon during the first six weeks of the war. Apparently, the British Navy did not have the firm and homogeneous organization and discipline with respect to carrying out a national policy that we have been led to believe existed, for not only the various admirals but also even individual commanders were given a good deal of latitude in regard to their acts or else officiously assumed it. A newspaper of May 22, 1813, published the following:

The ship *Action* of and for Boston from Cadiz, though protected by a "real genuine Prince Regent's license," was captured off our coast by the 74-gun ship of the line *La Hogue*. Her captain, the "honorable" Thomas Blanden Capel, plundered the brig *Charles,* also with a license, and would have burnt her, but thought it best to give her up to get rid of his prisoners, and she has arrived at Boston. He said he was determined to destroy every vessel that had a license, and if his government would not put a stop to the use of them, the navy should do it.

Another instance of the attitude of certain officers of the Royal Navy in regard to American merchantmen "protected" by British licenses in their trading to and from certain ports in Europe is to be found in the following account published in a Boston newspaper on August 4, 1813:

The ship *Fair American,* Captain Weathers, which arrived here Monday from Lisbon, was boarded on the 26th of July in Latitude 42°, Longitude 64° from his Britannic Majesty's frigate *Maidstone,* Captain Burdett, after a chase of seventeen hours, and the following particulars respecting the infamous treatment received from Captain Burdett were noted by the passengers and are published at their request. "At nine o'clock in the morning we were brought to and hailed by Captain Burdett, who stood in the main rigging, as follows: 'Where are you from?' Answer, 'From Lisbon.' 'Why did you not heave to and not run me so far out of my way?' Answer, 'I understood there was a French squadron out, and I thought you might have been one of them.' To which Burdett replied, 'You have heard no such thing, sir. You are a liar—you are a damned liar, sir, and your country are a damned set of liars, you are a nation of liars! . . . I will cut your cabin to pieces. Lower your topsail down, sir! Get a bag of dollars ready to pay for the shot I have hove at you—they were the king's shot, sir. You are an enemy, sir, for you have no license from my Government, sir, or you would not have run away from me.' He then repeated over several of the above blackguard expressions, and ordered Captain Weathers to come on board with his papers, which he complied with, and while there was grossly insulted with the foulest language."

In the summer of 1813, Judge Croke at Halifax, N.S., adjudged in the case of the American brig *Orion* (Captain Jubin), sailing from New York bound for Lisbon under the protection of a British license and captured by the British blockading fleet and sent into Halifax, that the vessel and her cargo be restored to her owners and that the license was valid. About the same time, Judge Story of the United States Circuit Court, sitting at Boston, decreed the condemnation of an American vessel sailing under a British license on the general principle of being denaturalized by the acceptance of the license.

The Boston-owned brig *Despatch,* operating under a British license, was captured by the Salem privateer *Castigator* (a cutter of 6 guns and twenty men), which put a well-armed but small prize crew aboard and ordered the vessel into Boston. The owners of the *Despatch,* hearing of the seizure, fitted out two boats with fifty men aboard for the avowed purpose of retaking the brig then in the bay. A hot fight ensued, and in this civil war between Boston merchants and privateersmen the *Despatch* was recaptured, the prizemaster and his men confined in the hold, and the brig made sail for Boston. Evidently, news of the fight had reached the city, for on entering the harbor the *Despatch* was stopped by a shot from the fort and the garrison took possession, delivering the brig to the customhouse authorities. The *Despatch* was libeled by the owners of the privateer, and the leaders of the men who had recaptured the vessel were arrested and examined before Judge Davis of the U. S. District Court. Conflict between the state and federal governments developed, and the matter, it would seem, was never satisfactorily cleaned up. The same Salem privateer, the *Castigator,* also captured the *Liverpool Packet* (Captain Richards) from Lisbon for Boston, evidently operating under a British license, but the prize was released to the owners.

In November 1813, there is a record of a sizable sloop arriving at Boston from (it was reported) Kennebunk—but actually from Halifax. Suspicion in regard to the vessel's trade led to an investigation, with the result that the sloop and her cargo were seized by the United States Government, and two officers were placed aboard as guards. During the night of November 17, a modernized commercial version of the historic and essentially patriotic Boston Tea Party was enacted, but on this occasion an organized group of men appeared suddenly, boarded and took possession of the sloop, bound and gagged the guards, and then quickly and most efficiently removed and made away with all of the vessel's cargo.

On July 29, 1813, President Madison ordered all United States naval officers to exercise the greatest vigilance in capturing American vessels engaged or suspected of being engaged in carrying provisions to the enemy. On August 5, 1813, the secretary of war directed that "all officers of the army of the United States commanding districts, forts or fortresses are commanded to turn back, and, in case of any attempt to evade this order, to detain all vessels, or river or bay craft, which may be suspected of proceeding to or communicating with, any station, vessel, squadron or fleet of the enemy within the waters of the United States." The "well-appointed, three-masted vessel" *Timothy Pickering,* in September 1813, was fitted out by patriotic citizens of Gloucester, Mass., for the avowed purpose of seizing American vessels that were evading the non-importation law or carrying goods abroad and trading with the enemy under the protection of British licenses. The *"Pickering"* captured the *Eliza Ann* and sent her into Eastport, but this presumably was a Canadian and not an American-owned vessel. The British sloop-of-war *Martin* appeared and threatened "to lay the town in ashes if the *Eliza Ann* was not promptly given up." Upon receiving a defiant answer, the British opened fire, which was returned with spirit, following which the sloop of war withdrew. The *Timothy Pickering* also captured the brig *Dart* and sent her into Salem.

Southern privateers were particularly aggressive against American merchantmen found trading with the enemy. On October 18, 1812, the Baltimore schooner *Nonsuch* (154 tons; 12 guns; 110 men), bearing letters of marque No. 1 and commanded by Capt. Henry Levely, stopped the American schooner *Mary* (Captain Stephens) of Alexandria and found aboard a license from the British to pass the blockade for the purpose of supplying food to British ships and colonies. Levely, we are told, promptly took Stephens, his mate and crew out of the *Mary* and imprisoned them aboard the *Nonsuch,* "considering them traitors to their country," and a prize crew of five men took the seized schooner into a United States port. The *Eleanor Ann,* found trading with a British license, was also captured by Captain Levely, but this vessel was retaken by the enemy. Another American schooner, the *Ann Maria,* also from Alexandria, was stopped, as she too was suspected of sailing with a British license. Her officers and crew were transferred to the *Nonsuch,* and men were sent to the *Ann Maria* to search her thoroughly. However, the capture and searching of the American merchantman brought on a major action between two armed vessels, and when the engagement was over, with losses on both sides, Captain Levely was mortified to find that his opponent was not a British cruiser or privateer but the *Joseph and Mary,* a 139-ton privateer, built and owned in Baltimore, whose master (Captain Wescott) asserted that he had seen the *Nonsuch* stop the American schooner *Ann Maria* and, therefore, believed her to be an English vessel.

In September 1812, the little Baltimore sloop privateer *Liberty* of 55 tons (Capt. Walter Pratt), with one gun (a 4-pounder) and forty men, met the American ship *Nancy* (Captain Choate) in Chesapeake Bay bound from Liverpool to Baltimore. The incoming vessel was boarded, and as Captain Choate was found to be in possession of a British license, the ship was seized and sent with a prize crew aboard to Baltimore. The intrepid Captain Dooly in the privateer schooner *Rolla* (117 tons), when flying British colors, met the American merchantman *David Green* off the eastern end of Cuba on April 8, 1813, and as the vessel made no effort to get away, he supposed she was a Britisher. Captain Farley of the *David Green* hailed the *Rolla* as she approached and asked permission to come aboard, which was granted. Farley then explained that he and his ship were from Boston and said that as he was operating under a British license, he "had been looking for some time for one of His Majesty's war vessels to convoy him to Jamaica and to protect him against American ships-of-war and privateers." Dooly placed Farley under arrest as "a traitor to his country," seized his vessel, and took her into Havana, where she was sold as a prize.

The only known xebec with lateen sails built or owned in the Chesapeake region was the privateer *Ultor* of 154 tons (2 guns; sixty-five men). This strange vessel, rigged like a Barbary pirate, was very successful in preying on enemy commerce (being credited with taking thirty-three prizes), for during her first cruise British vessels evidently never suspected her of being an American. In July 1814, sailing under the British flag and making for New London, an American fishing vessel came alongside and exhibited a British pass, which permitted her to get through the blockade. Captain Matthews of the *Ultor* thereupon seized the captain of the fisherman as a traitor and took his vessel into New London as a prize. Captain Almeda, in the privateer *Caroline* (129 tons; 10 guns; seventy-two men), on November 20, 1813, between Martinique and St. Barts, stopped the American sloop *Osiris* (Captain Driggs) out of New London but flying no colors and then carrying molasses. Driggs, convinced that the privateer was a British vessel, remarked to Almeda, "You're the first English cruiser I've seen for nearly a week." Driggs exhibited a British license and said that soon after sailing from New London he had fallen in with "His Britannic Majesty's ship *Valiant,* Commodore Oliver, and sold him a quantity of potatoes and apples." He added, "I have no doubt that if I fall in with an American privateer I shall be hung." Captain Driggs was not hung, but he was made a prisoner and his vessel seized as a prize and sent into Wilmington. On this cruise, the *Caroline* burned six prizes because they were worthless, ransomed two others, and sent in nine vessels, three of which, we are told, "were traitorous Americans." One of these vessels branded as "traitorous" was the schooner *Carlscrona,* which Captain Boyle in the privateer *Comet* had previously stopped and given up. Captain Almeda, when making a thorough search of the schooner, became convinced that she was not a Swedish and, therefore, a neutral vessel as claimed but an American, and she carried a British license. The *Carlscrona* was seized and sent into Charleston, where she was libeled and condemned. The court proceedings revealed the lengths to which some American merchants went to carry on trade with the enemy "by means of forged papers and licenses." During this one cruise of the *Caroline,* the third vessel seized by Captain Almeda that was branded as a disloyal American trading with the enemy was the brig *Criterion,* which was sent into Stonington, Conn.

On February 19, 1814, the famous Baltimore schooner privateer *Chasseur* (Captain Wade) captured the American schooner *Ann Maria* out of Boston with a British prize crew aboard. This vessel had taken flour out to Bermuda and, although sailing under a British license, had been captured by H.B.M. brig *Eclipse* after she had discharged her cargo and sailed. Wade took the prize crew out of the "disloyal vessel" and burned her. On March 13, the *Chasseur* sighted and captured the American schooner *William,* which had a British license, had been trading with the enemy, and had "a quantity of gold and other specie" aboard; Captain Wade took off the crew and valuables and burned the *William* the same as he had the *Ann Maria.*

American Privateers versus British Post Office Packets

The best of the British vessels of a size, power, and type to wage war on fairly even terms with average-sized and well-armed American privateers were the British packets, particularly those designated as Post Office packets. These vessels were generally strong and seaworthy brigs built for speed; they carried a good armament, but of still greater importance was the caliber of their crews, for these men were capable seamen, excellently trained gunners and sea fighters, and were under strict discipline like man-of-warsmen. Whereas these vessels were built, armed, and manned to defend themselves and were always prepared to put up a desperate resistance if attacked, their main object was to reach their destination with all possible speed and deliver safely the mail, dispatches, specie, express, or passengers that they carried and take no risks of injury, delay, or capture by initiating an action at sea. These vessels were designed and built primarily for speed, and their general orders were to crowd on all sail and seek to escape if chased by an enemy; also to use the long-range stern guns to injure a pursuing vessel's sails and rigging in order to lessen her speed. Maclay says:

> If evidence were needed to further demonstrate the superiority of the American-built craft over that of the British at this period [the War of 1812], it will be found in the fact that a large number of these British Government packets were captured by American armed private vessels; and, if evidence is needed to show that our privateersmen were as brave as they were skillful in handling their ships, it will be had in the fact that these packets were taken usually only after the most desperate struggles.

All British vessels designated as packets were not Post Office packets, and the term British packets is quite loosely used by some marine historians; but generally a packet was a fast vessel employed in a regular run, and those vessels that carried government mail, express, and officials were armed and manned to live up to the best traditions of a fighting service. When Commodore Barney in the American privateer *Rossie* on September 15, 1812, fought the first action of a United States vessel in the war with a British Post Office packet and took the *Princess Amelia,* three days out from St. Thomas with mail for Falmouth, he knew that he had been in a hard fight before the enemy struck her colors. The chase had lasted for many hours, and the broadside guns had barked for seventy-five minutes; Captain Moorsom and Sailing Master Nankivell were both dead and First Lieutenant (or Mate) Ridgard severely wounded, with the mail bags dumped overboard, before the British ensign fluttered down. When the Americans took possession of the British packet, they found "a shambles." This had been an uneven fight as the following comparative figures reveal:

	British Post Office Packet PRINCESS AMELIA	American Privateer ROSSIE
Number and size of guns	Six 6- and 9-pounders	Eleven 12-pounders One long 9-pounder
Estimated total weight of metal	48 lbs.	141 lbs.
Number of crew	28 men	100 men
Casualties	10 (3 killed; 7 wounded)	7 (1 killed; 6 wounded)
Casualties—percentage of total crew	36 per cent	7 per cent

Commodore Barney, in reporting this engagement with the *Princess Amelia,* wrote: "She made an obstinate resistance which lasted within pistol shot for almost an hour. . . . The vessel herself was a perfect wreck. I am sorry to say that we paid dearly. . . . We have been laying by and refitting all night as she is a fine sailer, the fastest I ever met with, although I was chased pretty hard four days ago by a frigate, and she would make an excellent cruiser." The *Princess Amelia* was sent with a prize crew to a United States port, and she arrived at Savannah on October 2, 1812.

The *Rossie* made no more cruises as a privateer, but Barney reported taking eighteen prizes with her. The schooner was sold at auction and next sailed with cargo as a letter of marque, carrying only 5 guns and 35 men instead of 12 guns and 100 men. Baltimore records credit her with taking twenty prizes (all in 1812), but a British publication says that the *Rossie* was taken in Basque Roads on January 6, 1813, by the frigate *Dryad* of a naval squadron and reached Plymouth as a prize on January 17, 1813, and that this schooner "had been a privateer and had committed depredations on our commerce, having taken no less than twenty-six sail of vessels."

Cranwell and Crane, in MEN OF MARQUE (out of Baltimore), say:

The records of the war [of 1812] show that these vessels [British Post Office packets] were always defended with gallantry and determination, and, though usually attacked by ships of greater speed and power, frequently beat them off. Twenty-two packets were engaged with American vessels during the war, three being taken by American frigates when resistance would have been madness. . . . Eleven packets were captured by privateers while eight beat off their assailants. Of the eleven, six surrendered to vessels out of Baltimore. . . . The crews of packets were paid a bonus when they fought off an opponent. Even when a packet was captured, small gratuities were paid if the resistance had been gallant. The wounded were sure of "smart" money, and the relatives of seamen killed were paid annuities.

The statement that eight American privateers were beaten off when they attacked British Post Office packets needs qualification. Privately owned armed vessels did not risk lives and property in a fight for glory, but were out to take loot from the enemy and prizes in a form that could be sent into port and sold for profit. A British Post Office packet carried a relatively big armament of good large-caliber brass guns and enough trained gunners to use them effectively; they carried mail of doubtful value, which was always thrown overboard before the vessel surrendered, and practically no cargo or express of value to a captor. If specie was on board, the captain of a British Post Office packet would rather see it tossed into the sea than have it fall into the hands of the Americans. The average United States privateer would chase any sail sighted at sea and engage any vessel believed to be a Britisher that was not a king's ship or a decidedly superior heavy armed vessel and that was believed to be of value as a prize. However, it was universally decreed to be bad policy for the captain of a privateer of any nation to engage unnecessarily in a fight with an armed enemy ship (either government or privately owned) and risk the lives and property placed under his direction and care unless the chances of winning an economic reward to warrant the gamble taken were extremely good. Many an American privateer owner, captain, and seaman were of the opinion that British Post Office packets were such "slim pickings" that the cost of capture in casualties and damage to their vessel was out of all proportion to the value of the prize; hence many an American privateersman, after coming upon a fast British brig and discovering the nature of his opponent, deliberately withdrew either before or after a real action had commenced, considering "discretion the better part of valor" and preferring not to risk having his vessel's spars, sails, and rigging seriously damaged (when in enemy waters) for the taking of "a paltry prize" that he would gain only after a hard fought action during which some casualties could be expected.

The privateer *Whig* of 226 tons (8 guns; 100 men), under the command of Capt. Joseph Skinner, out of New York, was in a terrific North Atlantic gale in mid-December 1814, during which she was required for the safety of the vessel to jettison four of her guns as well as the sweeps, spare spars, and other portable articles. On January 5, 1815, the *Whig,* then with only 4 guns, attacked a British brig of superior armament off Madeira, but met with such spirited resistance that Captain Skinner, after fighting for two hours and knowing that his opponent was a Post Office packet, hauled off and voluntarily withdrew, with two men wounded but fortunately with his spars intact, as he had no spares aboard. The *Whig* was reported as "beaten off" by the British packet.

Before the War of 1812, the British were convinced that their Post Office packet brigs would "outsail anything of their size, type and power afloat," but the British had cause to change their minds in regard to these early boasts of speed, for American privateers generally, and not only those known as Baltimore schooners, quickly proved their superiority under canvas. Maclay, writing of British packets, says:

So many British vessels of this class were taken by American cruisers and privateers in the early part of the war, and so serious were the losses and inconveniences resulting from these captures, that extraordinary precautions were taken to protect the packet ships. Their time of sailing was purposely made irregular, and, so far as possible, the exact date was kept secret. In some cases warships accompanied the packet, while, finally, ships of the line and heavy frigates were called upon to perform this service. But even these extreme measures did not prevent our enterprising privateers from continuing their mischievous work of capturing this class of craft.

One American privateer had the temerity to engage two British Post Office packets at the same time. This audacious vessel was the Chesapeake schooner *Globe* of 180 tons, built in 1809 by the Matthews Company, of Virginia, and, at the time, under the command of Capt. Richard Moon. She mounted 8 12-pounder carronades and 1 long 9-pounder and had some 90 men aboard when she sailed from Boston October 5, 1813. Off Madeira on November 1, the *Globe* exchanged shots with a brig whose powerful long guns and good marksmanship convinced Moon that she was a heavy man-of-war, so he hauled off, having received a 9-pound shot near the water line that caused a dangerous leak. Some historians say that the British brig was in fact the Post Office packet *Montague,* with which the *Globe* was destined shortly to become intimately acquainted. Captain Moon, after plugging the shot hole in the side of his vessel, headed for Funchal and, lying off that port, saw two large British brigs backing and filling as if about to leave the roads. Moon made a feint at sailing southward so as to encourage the brigs to venture out and then, retracing his course, again came in sight of them soon after they had cleared land. At daylight on November 3, the *Globe* sighted the two brigs about seven miles distant, each carrying a press of canvas, and Moon gave chase. At 11:30 a.m., after a chase of five and a half hours, the privateer got within range of the nearer and bigger brig. The Britisher opened fire with her stern chasers, and both she and her companion made preparations to fight, took in sail, and set boarding nettings from the bulwarks to the lower yards. Moon ran in close to board the big brig and take her first. The jib boom of the *Globe* tore through the boarding nettings, but as soon as First Lieutenant Harrison, Second Lieutenant Smith, and three men had jumped aboard the Britisher, a huge sea drove the vessels apart, the *Globe* fell away, and the five Americans were battered down by almost the whole of the British crew. A second attempt to board was repulsed by the Britisher while the carnage from the guns continued; but, nothing daunted, Moon made a third attempt to carry the fight to the enemy's deck. As the vessels drew together, the brig revealed her identity as a Post Office packet by dumping her mail bags overboard, and at 3:30 p.m. (four hours after the action had started) the Britisher struck his colors.

The *Globe* then proceeded to turn her undivided attention to the second brig, which had been firing upon her with impunity from the commencement of the engagement and doing great damage. The *Globe* ran close to the enemy's quarter and poured a destructive fire into her for an hour. At 4:30 p.m., Captain Moon, finding his schooner making water badly because of seven shots that had taken effect between wind and water, decided—inasmuch as the second brig seemed to have had enough fight, at least for a good while—to return to his prize, which had drifted, nearly dismasted, two miles alee, take formal possession, and possibly transfer many of the men from the *Globe* to her until his schooner could be put in a more seaworthy condition. As Moon came up to the captured brig, he was amazed to see her flag run up again, and the British, sensing the condition of the *Globe,* delivered a broadside into her. With the second brig signaling and making efforts to join forces with the larger brig and with his own vessel in danger of sinking unless the holes in her were immediately plugged, Moon could not renew action simultaneously with two vessels, even though they were severely injured, so he backed away to make essential repairs to his vessel's hull, rigging, and sails. The British brigs, joining forces for mutual defense, had no aggressive fight left in them and were content "to lick their wounds" when the American privateer hauled off for repairs. The larger brig was virtually a wreck, but the smaller one was in much better shape, and together they got busy making repairs and during the night sailed out of reach of the *Globe,* which was in no physical condition to pursue and fight further until she had made her hull tight, got the water out of her, repaired the rigging, replaced canvas, etc.

The *Globe,* in this engagement, had six killed—three of the five who boarded the enemy perishing—and seventeen others wounded (including Captain Moon; also the two lieutenants, Harrison and Smith, who got on the deck of the Britisher and whose "escape from death is next to a miracle"). The total casualties were stated as twenty-three killed, wounded, or missing, and this includes the five men who actually boarded the enemy, all of whom were casualties. The losses in manpower, representing 25½ per cent of the total complement, were very heavy for a privately owned armed ship which was supposed to choose her opponents and fight for loot and profit and not for glory.

When the requisite repairs had been made to the *Globe* and she was deemed once more seaworthy, the schooner proceeded slowly to the Grand Canary Islands for permanent repairs. Captain Moon learned later that two British Post Office packet brigs had put into Santa Cruz, Teneriffe, "one mounting 18 guns and the other 14," and reported having had "a severe engagement with an American privateer," which they "succeeded in beating off," but only "after great losses to themselves, having 27 men killed or wounded, besides suffering serious injuries in their hulls and rigging." Subsequently, the identity of the two British Post Office packets was revealed. They were the *Montague* (Capt. John A. Norway, R.N.) and the *Lady Mary Pelham* (Captain Perring). English historians say that it was the *Montague* (and not a British brig of war as Captain Moon asserted) that had exchanged shots with the American privateer as the British packet approached Funchal. However, all agree that in the battle which followed the *Montague* "suffered terribly," although the British later stated that this brig "never did actually strike her colors" (an assertion made with more regard to national pride than to truth). It was but natural for the *Montague* to haul down her flag and surrender, for the British admitted that Captain Norway, R.N., "had been cut in half by a chain shot," that the surgeon, Dr. Ure, had "his head shattered by a shot," that all the senior officers were badly wounded and incapacitated, that the command of the brig devolved on Herbert, the master's mate, who himself was wounded, and that it was Hensell, the gunner, who, "seeing the Americans about to attempt to board again, ordered the mails sunk, as he did not have a sufficient force to defend the vessel."

It would seem that when John Watkins, the master, was wounded and incapacitated in repelling the second attempt of the *Globe* to board, his mate, Herbert, struck the British colors and surrendered as the Americans were about to lay alongside and make their third venture to carry the fight to the deck of the *Montague*. After Herbert was wounded and the *Globe* withdrew to fight the *Lady Mary Pelham,* Hensell, the gunner, then in command of the *Montague,* seeing that the American privateer was injured and having her hands full with the other British brig, refused to honor his ship's act of surrender, but reorganized his surviving crew, got what guns he still had left in fighting condition, and, upon the *Globe's* approach, gave the vessel that had captured his ship "a warm gunner's reception." The British say that the *Montague's* loss was "five killed and twelve wounded out of a complement of 30 men"; that "the vessel was almost a total wreck, being badly shattered in her hull and bulwarks, all her rigging cut up and her sails torn to rags." The admitted casualties of 57 per cent are high, and the Americans who engaged in the fight said that the *Montague* had many more than the stated men aboard. The *Lady Mary Pelham,* which fought cautiously, fared much better than her colleague, although she was badly punished by the *Globe* in the hour that the American devoted to her. Captain Perring, it is known, was badly wounded, but no report was made public in regard to his brig's casualties or even of her physical condition after the fight.

The British Post Office packet brig *Lady Mary Pelham,* which had helped the *Montague* to escape from the clutches of the privateer *Globe* after the British packet had struck her colors to the American schooner, was captured on February 8, 1815, by the Baltimore privateer *Kemp* of 228 tons (6 guns) commanded by Capt. Joseph Almeda. At this time, the *Lady Mary Pelham* was commanded by Captain Graham, and she mounted 10 guns and had forty-two men on board (thirty-seven crew and five male passengers). In this encounter, the Britisher had a great advantage in armament over her opponent, but she hauled down her flag after a vigorous action of forty minutes and before the American made any attempt to board her. The *Kemp* had severely damaged the British packet in the hull, on deck, and aloft, "her rigging was cut to pieces by langrage, and round shot had ripped her bulwarks." A bullet from the *Kemp's* tops killed the helmsman of the *"Pelham,"* and when the brig "fell off," Almeda poured in a raking broadside before another steersman took the wheel.

The *Tom* was the first vessel built in Baltimore in 1812 for privateering against British commerce. She was a fine-lined, heavily canvased, square topsail schooner of 286 tons, measured 104 ft. 6 in. long, 25 ft. 10 in. beam, and 11 ft. 10 in. in depth, and on her first cruise carried 140 men and 14 guns. The *Tom* was laid down as a fast merchantman at John Price's shipyard at Fell's Point before the war started, but before she was launched on July 2, 1812, for a syndicate of nineteen new owners, she was being constructed as a privately owned armed vessel. On August 1, 1812, she was commissioned, with Capt. Thomas Wilson in command, to make war on enemy shipping and went promptly to sea. Niles REGISTER (of Baltimore) gave the following notice of her departure:

The pilot-boat built schooner *Tom* sailed on Sunday last [August 2, 1812] on a cruise. Her burthen is two hundred and eighty-seven tons; she carried sixteen guns [actually 2 long nines and 12 12-pounder carronades] and a brave crew of one hundred and forty men, admirably prepared for action. Thus she is able to compete with the smaller national vessels of the enemy, and, we trust, to escape from the larger. The canvas she spreads is truly astonishing.

A few days later, the *Tom* captured her first prize off the Carolina coast after a running fight of fifty-five minutes. This was the British ship *Braganza* of 400 tons, mounting 12 guns and carrying forty men, which, with an American crew aboard, was convoyed to the Chesapeake and then sent up to Baltimore, where the ship and her cargo of coffee and logwood were sold for $70,000, but of this the U. S. Government took $29,000 for import duties and court costs. After cruising in the North Atlantic, the *Tom* put into Newport, R. I., and then headed south. On November 24, off Barbados, with the American privateer *Bona* of 112 tons (5 guns; seventy men) in sight but about ten miles away, the *Tom* engaged the British Post Office packet brig *Townshend* (Capt. James Cock) mounting 9 guns, which was making for Bridgetown under a great spread of canvas. The superior speed of the *Tom* was quickly proven, but the Britisher was well armed with long 9-pounders, operated by experienced gunners. Captain Wilson ran in close and made two attempts to board his adversary, but the American privateer had too much "way." The *Townshend* threw her mail bags overboard in haste, and one of them, not being weighted properly, was later picked up by a boat from the *Bona,* which had come within gunshot and was firing with her long nine. With the mail disposed of and the *Townshend* badly injured (she lost her main yard, bowsprit, fore-topmast, main boom, and gaff as the action continued), the British Post Office packet struck her colors. The *Townshend* was 42 days out from Falmouth, England, and had suffered twelve casualties (one killed and eleven wounded) out of a total of thirty-two men aboard (consisting of twenty-eight crew and four male passengers); other reports say that five Britishers died as a result of this action. The brig's sailing master had been shot through the heart while he was throwing the last mail bag overboard, and Captain Cock was among the list of wounded. The *Tom* had two men wounded, and the *Bona* did not get near enough to the Britisher to suffer any casualties.

The *Townshend,* when boarded by men from both the *Tom* and the *Bona,* was found to be "a perfect wreck and entirely unmanageable"; in addition to the loss of the spars before mentioned, the mainmast was so severely damaged as to be useless, and with four feet of water in the hold the vessel was gradually sinking. Captain Wilson was at first inclined to burn his prize, but because of the number of wounded aboard and the vessel's nearness to Bridgetown, he decided to patch up the hull and let her proceed under a jury rig to that port after Captain Cock had agreed to a scheme of ransoming the vessel for $6,000 by means of "thirty-day bills" drawn up and signed by the British captain and three responsible passengers. The *Townshend* had been stripped by the Americans of everything of value before the ransom agreement had been made, and to make the path of Captain Cock more easy with his compatriots when he stepped ashore, Captain Wilson penned the following signed note of commendation and handed it to the defeated British commander: "I do certify that Captain James Cock of the packet brig *Townshend,* captured this day by the private armed schooners *Tom* and *Bona,* did defend his ship with courage and seamanship, and that he did not strike his colors until his vessel was perfectly unmanageable and in the act of sinking." The *Town-*

shend made Bridgetown safely and was there thoroughly repaired and reconditioned. On her return passage to England with the mails, the packet, with Captain Cock, was again attacked by an American privateer, but this time he succeeded in beating her off. Whereas Captain Wilson, thinking only of Captain Cock's interest and reputation, wrote that the *Townshend* had been captured by the *Tom* and the *Bona,* he considered that as the *Tom* had done all the real fighting, she was, therefore, entitled to the prize. Upon sending to the *Bona* for the British mail bag which that vessel had picked up, Captain Wilson found that Captain Dameron refused to surrender it and, moreover, stated that he and his crew were entitled to share in the prize. The mail bag proved valueless and was apparently all that the *Bona* received, nor was she entitled to any other part of the spoil, to obtain which the *Tom* had done all the real fighting.

The Baltimore privateer *Fox* of 162 tons (8 guns; 120 men), according to records under command of Capt. Nicholas Vial but actually in charge of the lieutenant, John Jacques Bonne, on November 22, 1813, chased the fast British Post Office packet brig *Lapwing* (Captain Furze), armed with 7 guns and with 32 men aboard, as that vessel, with studding sails set, was running for Bridgetown in the Barbados from Falmouth, England. The pursuit was a long one (from the evening of November 21 to 1:00 p.m. on November 22, when the first gun was fired), as the *Lapwing* was "extremely fast and well sailed." After an action of an hour and a half, during which an attempt of the American schooner to board the British brig was beaten off, the *Lapwing* threw her mail bags overboard, and as Bonne prepared to try boarding for the second time, the flag of the brig was hauled down, and she surrendered within sight of the harbor and security of Bridgetown. Captain Furze and the sailing master, William Hodge, were badly wounded and below when the mate reported to the captain that he had "four killed and ten wounded" and asked for orders, at which time, we are told, "Capt. Furze instructed the mate to throw over the mail and strike in order to save further loss of life." The prisoners (one of whom was a British army officer, who was wounded) were taken aboard the *Fox* and about three weeks later placed on board two of the privateer's prizes, which were used as cartels and sent into West Indian ports. The *Lapwing,* in charge of a prize crew, was ordered to the United States, but was retaken by a British cruiser and sent into Jamaica. Upon arrival at New Orleans at the end of the cruise, Captains Bonne and Vial reported casualties of eight men (one killed and seven wounded) in the engagement with the captured British Post Office packet.

On July 3, 1814, when cruising off the Spanish coast, the Baltimore-owned schooner privateer *Harpy* of 347 tons (Capt. Alex. P. Griggs), commissioned and based in New York, mounting 12 guns and carrying a crew of 110 men, sighted a large brig under a heavy spread of canvas. She proved to be the British Post Office packet *Princess Elizabeth,* bound from Madeira to Falmouth (Captain Torresdale), mounting 8 9-pounder guns and carrying a crew of 28 men and 10 passengers, two of whom were British officers (one navy and one army) and another, the Turkish ambassador to Great Britain. After a long chase, during which the American vessel showed her superior speed, a hammer-and-tongs action within pistol shot ensued, and finally—after two attempts to board had been beaten off by strategy and Dame Fortune—the resistance on the British brig ceased as Captain Griggs moved in to administer the *coup de grâcé,* and the *Princess Elizabeth* struck her colors. Captain Torresdale lay below decks seriously wounded, the first lieutenant had been shot in the thigh, and the sailing master hit by two bullets from the muskets of the *Harpy's* marines; two seamen had been killed and three wounded, and the brig's grape and canister had been exhausted when the British commander ordered that the mails be sunk and the packet surrendered. Captain Griggs found the *Princess Elizabeth* so badly damaged in the fight that, after removing $10,000 in specie, several pipes of Madeira wine, and the vessel's 2 long brass 9-pounders and heaving the 6 9-pounder carronades overboard, he agreed to accept $2,000 in bills of exchange as ransom. After accepting the parole of her crew and passengers, he loaded prisoners taken from other prizes aboard and permitted the brig to proceed. The casualties of the *Harpy* were two killed and one wounded, but her bowsprit was gone, her masts injured, the rigging badly damaged, and as the vessel needed a complete refitting before she could do more cruising against the enemy, the privateer sailed westward and on August 10, 1814, limped into Portsmouth, N.H. The *Harpy,* in about ten months of cruising time against the enemy (April 1814-February 1815), is credited with taking seventeen prizes, of which ten were ships, five brigs, and two schooners. She reached Salem, Mass., back from her last cruise on February 5, 1815, about a week before news arrived of the signing of the peace treaty.

The *Burchall,* captured by the American privateer schooner *Highflyer* of 138 tons (5 guns; eighty-five men), was described as a "British packet ship running from Barbadoes to Demerara, with British officials of high rank aboard." This was during the second cruise of the *Highflyer,* commissioned October 6, 1812, with Capt. Jeremiah Grant in command, and at about the same time this American privateer, besides seizing a number of enemy droghers sailing in the West Indies, captured "another commissary and seventy-two men, who were sent into Demerara under a flag of truce." After taking nine prizes on this cruise (in addition to four on an earlier cruise), the *Highflyer* was captured by the British 74-gun ship-of-the-line *Poictiers* and the frigate *Acasta* on December 24, 1812, and converted into a British armed tender carrying a crew of seventy-two men. On September 23, 1813, the *Highflyer,* through a clever stratagem, was recaptured by the U.S. 44-gun frigate *President,* under the command of Capt. John Rodgers.

The Norfolk privateer *Roger,* a schooner mounting 10 guns and carrying 120 men, under the command of Capt. R. Quarles, in 1814 took as the last and seventh prize of her cruise the British packet *Windsor Castle,* bound from Falmouth to Halifax, with mail and passengers. The British packet mounted 10 guns, 2 long 9-pounders and 8 short, and carried a crew of thirty-two men in addition to nine passengers; she put up a stiff fight and, with a prize crew aboard, was sent into Norfolk.

What has been described as "one of the most obstinately contested actions between an American privateer and a British Government packet" occurred in September 1813 between the privateer *Saratoga* of New York (Capt. Charles W. Wooster) and the British packet ship *Morgiana* of 400 tons (18 9-pounder guns and fifty men). The *Saratoga,* when she sailed, had left port mounting 16 guns, but before encountering the British packet had been required to throw 12 of them overboard in escaping from a fast and powerful British frigate. The New York privateer, with only 4 guns, outfought the big *Morgiana,* which surrendered when her captain was seriously wounded; but the casualties on the American vessel were ten (three killed and seven wounded) as against seven (two killed and five wounded) for the Britisher. The *Saratoga,* all told, is credited with taking twenty-two enemy vessels as prizes.

The Amazing Record of the Privateer YANKEE of Rhode Island

In the War of the Revolution, the Massachusetts privateer sloop *Yankee* (9 guns) was one of the first privately owned armed American merchant vessels to put to sea in order to harass enemy shipping. Sailing directly for British waters, this audacious Yankee sloop "bit off more than she could chew." She captured two large and valuable armed British merchant ships, the *Creighton* and *Zachara* (laden with rum and sugar), each of which carried more men than she did, and after placing prize crews aboard, she did not have sufficient men left on her own decks to sail and protect the vessel and work her guns, nor was she able to put enough men as prize crews on her captures to navigate the seized vessels and handle the prisoners (who were belligerent and refused to work). Because of this shortage of men on the

American privateer, the crews of the two British ships rose in revolt and recaptured their vessels; then they made a concerted attack on the undermanned *Yankee,* seized her by superior man and gun power, and took her into Dover, England.

The Yankee-named privateers of the Revolutionary War (*Yankee, Yankee Hero,* and *Yankee Ranger*) were "Bay State" vessels, but in the War of 1812 it was the "Yankees" of Rhode Island that made history as privateers preying upon British shipping. The most successful of the fleet and the first to put to sea was the brig *Yankee* of 168 tons, armed with a long tom amidships, a 12-pounder, and 14 short guns (9- and 6-pounders) on her broadsides and carrying a complement of 120 officers and men. The *Yankee* was owned by James De Wolf and John Smith, of Bristol, R.I. On her first cruise, which commenced in mid-July 1812 under the command of Capt. Oliver Wilson, the privateer sailed to intercept British vessels making for Canadian ports. On August 1, off Halifax, N. S., she took as her first prize, after a spirited engagement, the big 658-ton British privateer *Royal Bounty* (10 guns), which had the misfortune to be undermanned for either attack or defense. Captain Wilson showed an audacious and intrepid spirit in boldly attacking a well-armed vessel that was four times the size of his own brig and that certainly looked formidable until it was found that she was shorthanded. During the action, the *Yankee* suffered some damage to rigging and sails and had three men wounded. The casualties on the *Royal Bounty* were two killed and seven wounded, among the latter being her commander, Captain Gambles. Struck by 150 "heavy shot," the British privateer was badly damaged, her boats and much deck gear shattered, and her spars, sails, and rigging "cut to pieces." Captain Wilson placed a prize crew on the captured privateer and sent her into port. He continued his cruise and took several other British vessels during August, the most important being the *Eliza Ann* of Liverpool, with a valuable and full cargo of British goods, which was sent on August 26 into Boston under a prize crew.

The second cruise of the *Yankee* was made under the command of Captain Wilson to the west coast of Africa. It occupied 150 days, from mid-October 1812 to mid-March 1813, during which time the privateer captured eight British vessels (four brigs, three schooners, and one sloop) mounting 50 guns and carrying 196 men. The property taken (vessels and cargo) was valued at $296,000, and amongst the booty were 406 muskets. The following is a list of the vessels captured on this highly successful five-month cruise:

Name of Vessel	Rig	Number of Guns	Number of Men	Remarks
MARY ANN	Sloop (coppered)	4	11	Cargo of gold dust, ivory, and camwood valued at $28,000, which was taken on board YANKEE with crew as prisoners. Sloop burned.
ALDER	Schooner (coppered)	6 (9-pdrs.)	14	Seven British killed, including captain. Cargo of 400 casks of musket flints, bar lead, iron, and dry goods. Capture was valued at $24,000. Vessel badly mauled in stubborn fight.
FLY	Brig	6	14	Captured from under guns of Fort Appollonia. Cargo of gold dust, ivory, gunpowder, iron, dry goods, etc. Capture valued at $36,000; prize crew put aboard and sent to U. S. A.
THAMES	Brig	8	14	Cargo of "dry goods, camwood and redwood" worth $40,000. Prize crew put aboard and the brig sent to Boston.
HARRIET AND MATILDA	Brig	8	14	A former Portuguese war brig captured by the British in 1808. Cargo of fine clothes, linens, iron, salt, and porter valued at $41,000.
SHANNON (ANDALUSIA)	Brig	10	100	Eighty-one of crew were "free blacks." Vessel with a cargo valued by Captain Wilson at $34,000 sent with prize crew to Savannah, where it sold for $67,521.
GEORGE	Schooner	4	12	Taken when at anchor in Tradetown. Took $2,500 worth of rice from cargo and used vessel to load prisoners on, following which the GEORGE was set free to make for any desired port.
ALFRED	Schooner	4	10	Laden with general cargo. Taken on return transatlantic passage when approaching American coast.

The *Yankee* sailed from Rhode Island on her third privateering cruise on May 20, 1813, under command of Capt. Elisha Snow, who had to elude a British frigate and a 14-gun brig of war to get to sea. On May 22, the British brig *William* was captured, but she was retaken by the British in attempting to run the blockade with a small prize crew aboard. On May 30, a heavily armed (14-gun) cotton-laden British brig (also named the *Thames*) was captured and sent into Portland, Maine, where the prize sold for $110,000. On June 22, the *Yankee* captured the British sloop *Earl Camden* (110 tons) off the Irish coast and, after valuing her at $10,000, sent her to France. During the three days June 30-July 2, 1813, the *Yankee* captured four British vessels—the brig *Elizabeth* of 156 tons, loaded with cotton valued at $80,000; the brig *Watson* (3 guns; fifteen men), with cotton cargo valued at $60,000; the schooner *Ceres*, an Irish produce coaster; and the brig *Mariner*, laden with rum and sugar valued at $70,000. After taking all provisions needed from the *Ceres*, that schooner was released, but the other three vessels, with cargoes valued at $210,000, were ordered to French ports. On July 23, the *Yankee* met a stubborn Spaniard that would not reveal himself as such, but opened up with grape on the American as a reply to a lee gun fired as an indication of friendship. Captain Snow then went into action with his broadsides, and shortly thereafter the Spanish privateer *Nueva Constitucion,* a ship of 300 tons mounting 6 heavy 24-pounders and 2 12-pounders (8 guns and twenty-five men), struck her colors. When the identity of the belligerent Spaniard was clearly established, she was released. (She was twice as large as the *Yankee* and carried guns firing 168 lbs. weight of metal as against 117 lbs. for the American.) Returning to port on August 20, 1813, after a cruise of three months (92 days), the *Yankee* had the proud record of having captured twenty-two British vessels during her first three cruises as a privateer—and this without the loss of a single member of any of her three crews.

The fourth cruise of the *Yankee,* under the command of Capt. Thomas Jones, also proved very lucrative to her owners, officers, and crew. Although only 49 days at sea (sailing September 13 and returning November 1, 1813), she captured nine British vessels, some with valuable cargoes, that successfully ran the blockade and made 180 prisoners. The following is a list of the prizes:

Name and Rig	Remarks
ANN (brig)	Cargo of rum, salt, and dry goods valued at $40,000. Sent into Chatham.
MARY (brig)	Cargo of salt, coal, and crockery valued at $20,000. Sent into Chatham.
DISPATCH (brig)	Cargo of dry goods and cutlery invoiced at $40,000. Sent to U. S. A. port.
TELEMACHUS (brig)	Cargo of rigging, coal, and provisions. Most valuable part transferred to YANKEE. Recaptured by British.
FAVORITE (brig)	Transferred into a cartel.
KATY (schooner)	General cargo. Sent into New Bedford.
PARIS (armed bark; 10 guns)	Valuable cargo transferred to YANKEE. Recaptured by British.
JOHN AND MARY (brig)	Cargo of shot and provisions valued at $49,000. Sent to U. S. A. port.
HOWE (brig)	Of little value. Prisoners placed in her on parole and vessel released.

Of the nine vessels captured, five reached U.S.A. ports with their cargoes, two were released, being laden with prisoners, and two were recaptured by the enemy when, with prize crews aboard, they attempted to elude the British fleet and reach a United States port.

Owing to the rigorous blockade maintained by the Royal Navy off Rhode Island, the *Yankee* did not succeed in getting to sea again for seven months. Watching her chance, she slipped out the end of May 1814, being under the command of Capt. Elisha Snow (her master on Cruise No. 3), and during this her fifth cruise she took at least four British ships in a few weeks' time. These vessels were:

Ship *Sir Hugh Jones,* from Belfast for Guadeloupe, which was divested of her most valuable cargo. Ordered to U.S.A. port.
Ship *Berry Castle* (6 guns); released after vessel divested of her cargo of barilla and wine.
Brig *Maria Wirman* from Havana for Scotland. Ordered to U.S.A. port.
Ship *San José Indiano* from Liverpool for Rio de Janeiro. Taken into Portland, Maine.

The ship *San José Indiano* had a cargo on board of enormous value, and it is believed that this one capture constituted a record for a privateer during the war, as the receipts from the sale of the ship and cargo approximated $600,000. Maclay says:

> The owners of the *Yankee* received as their share of the profits [from the condemnation and sale of this one prize] nearly a quarter of a million dollars, while not a boy in the *Yankee* got less than seven hundred dollars. Captain Snow received for his portion fifteen thousand seven hundred and eighty-nine dollars, while the Negro waiters in the cabin, Cuffee Cockroach and Jack Jibsheet, received one thousand one hundred and twenty-one dollars and eighty-eight cents and seven hundred and thirty-eight dollars and nineteen cents respectively.

The *Yankee* is credited with taking six British vessels during her sixth and last cruise, which commenced on October 1, 1814, and ended when she put into Beaufort, N.C., on January 25, 1815 (116 days later). She sailed from Rhode Island in command of Capt. William C. Jenkes, but following the skipper's loss of a leg, Mate (or Lieutenant) B. K. Churchill assumed command of the privateer. Three of the captured British vessels were brigs—the *Lady Prevost,* the *Courtney,* and the *Speculator;* two were full-rigged ships—the *St. Andrews* and the *General Wellesley;* and one was a schooner in the Bermuda trade laden with flour. The brig *Courtney* was taken into New Bedford and on sale, following condemnation, realized $70,000. The brig *Speculator,* which had a cargo of jerked beef, was given up to the prisoners. The capture of the ship *General Wellesley,* bound from London to Calcutta, was noteworthy, for the British vessel was a big and powerful ship of 600 tons, built of teakwood, coppered, and of the best modern construction and finish. Her armament consisted of 16 carriage guns, and she had a crew of eighty-six men (thirty-six British and fifty Lascars). The *Yankee,* of only 168 tons and 15 guns (14 of which were short), had a running fight with the British ship for several hours before she captured her. The *General Wellesley* had a valuable miscellaneous cargo aboard (including 18,000 bars of iron), and as the prize was valued at "at least $250,000," a strong prize crew was put aboard under command of James M. Blum, with instructions to make for Charleston, N.C. Unfortunately, while entering the harbor, the *General Wellesley* struck on the bar and became a total wreck, all of her original crew as well as two of the Americans aboard being drowned.

Marine historians unite in stating that the privateering record of the *Yankee* in the War of 1812 was an amazing one. Maclay says: "She had taken altogether nine ships, twenty-five brigs, five schooners and one sloop, making in all forty vessels captured from the British. She had seized or destroyed property to the value of five million dollars, and had sent into Bristol alone one million dollars' worth of goods." These figures of "forty vessels" valued at "five million dollars" have been accepted through the years and are generally quoted by marine writers and authorities, but Alden and Westcott, in THE UNITED STATES NAVY, write: "The *Yankee* of Bristol, R.I., took forty prizes, the value of which, with their cargoes, was put at $3,000,000"—a figure of value which seems to check more closely with the known historic facts. On her first three cruises, the *Yankee* "captured twenty-two British vessels without the loss of a man on her part." On her last three cruises, she took "nineteen British vessels," which makes her total for all six cruises forty-one vessels, made up—according to certain available records—of seven ships, one bark, twenty-three brigs, seven schooners, and three sloops. These seizures were made between July 16, 1812, and January 21, 1815, a total of two years, six months and five days, during which she was at sea less than one year and five months and averaged one capture of an enemy vessel about every twelve days.

Capt. Thomas Boyle and the Privateers COMET and CHASSEUR

In the War of the Revolution, there was an American privateer *Comet* commanded by Capt. Stephen Decatur (senior) and another of the same name (a 10-gun sloop; fifty men) commanded by Capt. C. Harris, of Pennsylvania, which on June 12, 1780, fell in with a convoy of British merchantmen off Sandy Hook and by audacious seamanship, with adroit maneuvering, captured eight of them and sent them into Philadelphia. It was in the War of 1812, however, that an American privateer *Comet* achieved fame for consistently brilliant action in her attacks on British shipping, and probably a good part of her fine record of taking twenty-seven British prizes, of outsailing all enemy ships encountered, of outwitting their commands, and of emerging victorious in all of her many naval engagements was due to her commander, Capt. Thomas Boyle.

Before the war, the *Comet* of 187 tons (length 90.6 ft., beam 23.3 ft., depth 10 ft.) was a staunch Baltimore schooner engaged in the merchant service. She was 96 ft. long on deck, had been built for speed rather than carrying capacity (either weight or bulk), and was structurally capable of carrying a heavy armament for a vessel of her size and type. The *Comet* mounted 12 guns on her first cruise and 14 thereafter (12 12-pounder carronades and 2 long 9-pounders) and carried a crew of 110 men (seamen and marines). Because of splendid demonstrated sailing qualities and handiness, when she sailed from the Chesapeake July 11, 1812, on her first cruise against enemy shipping, she was described as representative of an ideal type of United States privateer to harass British commerce, as she could either fight or run according to the judgment of her commander and the power of the enemy encountered. Capt. Thomas Boyle was born in Marblehead, Mass., on June 29, 1775, and he was, therefore, thirty-seven years old when he took the *Comet* to sea to seek out, capture, or destroy British shipping. Possessed of indomitable courage and "consummate seamanship," Boyle was a man of action, but he was strangely quiet and unassuming considering his intrepidity. He was described as "always annoying the enemy wherever he chanced to steer, sometimes on the coasts of Spain and Portugal, and, anon, in the British and Irish channels, carrying dismay and terror to British trade and commerce, in defiance of their fleetest frigates and sloops of war, which strove again and again to capture him, but never were able. He appeared frequently to tantalize and vex them as if for mere sport, and at the same time convince them that he could out-maneuver and outsail them in any trial of seamanship."

Capt. George Coggeshall, himself a privateersman in the War of 1812, in his book HISTORY OF THE AMERICAN PRIVATEERS, expressed a wish that Captain Boyle's name "be honored and cherished in every American heart" and affirmed, "He is entitled to a national monument to perpetuate his memory to the latest generations." Coggeshall continued:

> To say that he was a dashing, brave man, would in his case, be but common-place eulogy, for he was infinitely more than that idea expresses. . . . In him were blended the impetuous bravery of a Murat, with the prudence of a Wellington. He wisely judged when to attack the enemy, and when to retreat, with honor to himself and to the flag under which he sailed. . . . He displayed in all his acts a sound judgement, beautifully blended with patriotic bravery.

Coggeshall further said that if Captain Boyle had been a commander in the United States Navy, "his fame and deeds of valor would have been lauded throughout our great republic," but that as he commanded only a privateer, he never received the public acclaim or the recognition and glory due a truly great man.

Cranwell and Crane, in MEN OF MARQUE (a history of Baltimore privateers), write that Captain Boyle, with the two privateers that he commanded in the War of 1812 (*Comet* and *Chasseur*—both "financially successful" but "more famous than profitable"), won his "greatest renown within the domain of His Majesty, the King of England."

Because of the trail of destruction which Thomas Boyle left behind him as he drove his vessels storming through the North and South Atlantic, and even into the English Channel and the Irish Sea, he became an almost legendary figure. He fought and practically destroyed a British ship of war; he indulged his sense of humor frequently and always to the discomfiture of the enemy. . . . With Boyle in command, a ship's launch would have been formidable. On the deck of a dancing Baltimore clipper-built schooner he was a threat to almost anything afloat.

The "sting of the hornets" to British shipping in the War of 1812 was associated with a very definite and painful "sting" to British pride, for it was audacious and brilliant skippers such as Captain Boyle in command of American privateers who proved to the self-satisfied British that well-designed, built, and equipped ships were only one part—although a vitally important one—of the reason for American marine superiority, ship for ship, and that another great factor contributing to ultimate success at sea was the quality—initiative, courage, resourcefulness, and ability—of command. On numerous occasions, Captain Boyle made the captains of reputedly fast British ships appear foolish and their vessels sluggish, but when he was up against a fast American-built vessel (known to be both very speedy and handy) that had been captured and was commanded by a Britisher, Boyle outsailed and outmaneuvered his opponent.

Maclay, in A HISTORY OF AMERICAN PRIVATEERS, says:

For a privateersman to match his ship successfully against a regular war vessel is sufficient distinction in itself to mark her commander as a man of extraordinary daring. To be twice successful in such an encounter is remarkable even for the commander of an American private armed craft. A number of our privateersmen have won this distinction; but few have equaled, in this particular, the success of Captain Thomas Boyle. He had the enviable honor of twice worsting a cruiser and of several times putting up a good defense against government war craft. Even in the light of the proverbial daring of American privateersmen, Captain Boyle's career in the War of 1812 was extraordinary.

The captures made by the *Comet* on her first privateering cruise of which we have a record were as follows:

Name of Vessel	Tonnage	Type	Date of Capture 1812	On Passage From	On Passage To	Cargo	Value by Sale
HENRY (Captain Dryden)	400	Ship (12 guns; 20 men)	July 25	St. Croix	London	Sugar, old Madeira wine, etc.	$128,641.51 at Baltimore
HOPEWELL (Captain Anderson)	about 400	Ship (14 guns; 25 men)	Aug. 16	Surinam	London	Sugar, molasses, cotton, coffee, and cocoa	Ran aground at Baltimore; brought about $105,000
INDUSTRY	about 300	Brig (8 guns; 18 men)	Sept. 3	Surinam	London	Sugar, molasses, cotton, etc.	Reached Beaufort, N. C.; brought about $75,000
JOHN (Captain Tyrer)	372	Ship (11 guns; 36 men)	Sept. 18	Demerara	Liverpool	Cotton, sugar, rum, coffee, and 50 calves	$109,000 at Baltimore

The ship *Henry* and the brig *Industry* were captured without resistance. The ship *John* put up a brief but spirited fight, and the running engagement with the ship *Hopewell* lasted over an hour, during which the British had one man killed and six wounded and the *Comet* two wounded. Captain Boyle had put 44 of his crew of 110 men aboard the prizes and had transferred 90 of the 99 prisoners to the *Comet.* As the American privateer was overcrowded (with 50 per cent more prisoners than total crew—seamen and marines—aboard) and as stores and water were running low, the *Comet* was headed back for the Chesapeake.

On one of the prizes taken, Captain Boyle found a copy of the following interesting "Recommendations by their Lordships of the Admiralty" made to check the "dreadful ravages" being made by United States privateers and naval vessels on British commerce and to make it increasingly difficult for the Americans to sail the vessels seized into port:

The Lords Commissioners of the Admiralty recommend that all masters of merchant vessels do supply themselves with a quantity of false fires to give the alarm on the approach of an enemy's cruiser in the night, or in the day to make the usual signals for an enemy being chased by or discovering a suspicious vessel; and, in the event of their capture being inevitable either by night or by day, the masters do cause their gears, trusses, and halyards to be cut and unrove, and their vessel to be otherwise so disabled as to prevent their being immediately capable of making sail.

The *Comet* was back in Baltimore October 7, 1812, and found two of her prizes, the *Henry* and *Hopewell* in port ahead of her; the *John* arrived October 10, and the *Industry* reached Beaufort, N.C., without mishap. On this cruise, Captain Boyle had captured four sizable ships and got them all safely as prizes into United States ports, where they had sold for about $417,000. However, this money was not all divided among the owners, officers, and crew of the *Comet,* for it is said that "about half of it went to the government in court costs and duty." In the case of the *Henry,* which was condemned by the Federal Court and sold for $128,641.51, the privateer's owners and crew received but $78,414.12, the balance of $50,227.39 being taken for import duty and court costs. Because of this high "government take," Baltimore merchants presented a memorial to Congress November 12, 1812, asking that the practice of collecting duties on cargoes captured from the enemy be rescinded. This petition was acted upon favorably to encourage privateering and the enlisting of crews on such private armed ships, as members of the crews served without pay, their compensation, or "lay," coming from the prizes captured.

Adding 2 12-pounder carronades to the original battery of 10 guns of this type, the *Comet,* with a crew of 100 men aboard, slipped past the Capes on November 25, 1812, to commence her second privateering cruise. A strong British naval force was attempting "a vigorous blockade of the Chesapeake and Delaware," and it would seem that speed and handiness, with an intrepid, resourceful commander, saved the *Comet* from either capture or destruction. In the dark, she ran very close to a British frigate that she was trying to elude and received a broadside just before daybreak; when the *Comet* got clear (favored by a little thick weather), she had to repair a damaged spar and some of her rigging. On this cruise, Captain Boyle, eschewing his previous successful hunting ground, decided to go to the south. During the night of January 14, 1813, off Pernambuco, the *Comet* fought an engagement with three strongly armed British merchantmen—one ship, the *George* of Liverpool, and two brigs, the *Gambia* of Hull and the *Bowes*—which were being convoyed by a heavy war brig of the Portuguese Navy, the *Libra* (Capt. Vascouselos de Millo) mounting 20 32-pounders and carrying a crew of 165 men (according to the statement made by the first lieutenant of the *Libra* when he boarded the *Comet* before the action commenced). Boyle, in his journal, wrote:

I told him [the Portuguese Navy lieutenant, the second in command on the *Libra*] I was an American cruiser and insisted that he see my authority for capturing English vessels, which he did. I then informed him that I would capture those vessels if I could when we were upon the high seas which was the common highway of all nations, adding that he had no right to protect them. He said that he should be sorry if anything disagreeable took place, that he was ordered to protect them and would do so. I answered that I should feel equal regret if anything disagreeable happened and that if it did, he would be the aggressor as I did not intend to fire on him first, but that if he attempted to oppose me or fire on me while I am trying to take the English vessels we must try our respective strength as I was well prepared for such an event and would not shrink from it.

The Portuguese naval officer insisted that the British merchantmen were under the protection of the *Libra,* that all were well armed, being a force to be reckoned with, and that his heavily armed and manned naval brig would assist the British vessels in fighting off any foe that dared to molest them. Boyle asserted emphatically that the Portuguese brig, being an armed ship of a neutral power, had no right according to international law to interfere in the *Comet's* attempt to capture enemy vessels; that such defense as contemplated would constitute a belligerent act on the part of Portugal against the United States. "The ocean of rights," declared Boyle, "belongs to America as much as to Britain, Portugal or any other power in the world." The Yankee-born skipper was determined to fight if need be any neutral power that sought, through force, to deprive the United States of its just rights on the Seven Seas. The *Comet* opened fire on the British ship and one of the armed merchant brigs at about 8:30 p.m., when all the vessels were carrying "a press of sail"; the Britishers replied, and the Portuguese man-of-war opened fire on the American privateer with round and grape shot, while the *Comet* replied with her long tom and broadside guns. Visibility became bad, and the British vessels separated. The Portuguese naval brig hung on to drive off or destroy the "impudent American," but her gunnery was poor. Around midnight, the British ship *George* (Captain Wilson) struck her colors (her skipper saying that she was badly hulled by shot, was going to sink, and that her rigging was all cut away); but when Boyle was sending a boarding party to his prize, the Portuguese opened fire on the small boat, compelling it to return. A British armed merchant brig, the *Bowes,* surrendered, and Boyle succeeded in putting a prize crew aboard at 1:30 a.m., following which the Portuguese fired upon the captured vessel. The British ship that had struck her colors and the second merchant brig (the *Gambia*) were both apparently in a sinking condition and, with the Portuguese warship, which had been punished, made for the land and with great difficulty reached the harbor of Pernambuco (some thirty-six miles from the scene of the naval action).

The three crippled ships were followed a good part of the way by the *Comet* and her prize (the *Bowes*), which noted the "extraordinary exertions" being constantly made to keep the two armed British merchantmen afloat. Captain Boyle did not press for the final seizure of the badly damaged British vessels, as Captain Wilson of the ship *George,* which had struck her colors, had signaled that his vessel was in a sinking condition. There were many shot holes between wind and water, and above deck was a shambles—the masts and spars splintered, the sails in shreds, and "not a rope but what was cut away." The *George* reached Pernambuco and was beached; her cargo of wheat was ruined, her masts were tottering, and she had to be dismantled. The condition of the brig *Gambia,* also wheat laden, was very much the same. As prizes, the *George* and the *Gambia* had no money value, but the *Comet* had deprived the British mercantile marine, through this action, of a large ship and two sizable trading brigs.

The Portuguese war brig *Libra* received much damage in the fight and suffered many casualties, but the records of how she fared in her action with the *Comet* are both confusing and decidedly contradictory. It is known that the first lieutenant was killed in action, and some records show the casualties as six killed (including the first lieutenant) and a number wounded; another Pernambuco report says that "the first lieutenant had his head shot off and two or three men were wounded." However, it is apparent that this report understates the truth, for the Portuguese took prompt and effective steps to hide their scars and minimized the extent of their losses in the interest of national honor. Some historians say that the commander of the *Libra* had his thigh shattered by a cannon ball and died shortly after reaching Pernambuco. This may be true as far as his being wounded in action and his ultimate death resulting therefrom were concerned, but Captain De Millo was well enough to send an official report to Lisbon from Pernambuco giving his version of the battle; this letter admits the excellent sailing qualities of the *Comet,* the superior strategy of Captain Boyle, and the fact that the British ship *George* was rendered unseaworthy and that two of the three vessels that Captain De Millo was guarding had to put back to port. This Portuguese brig of war was described by South Americans as a powerful vessel that had been well mauled by a United States "cruiser" in an engagement off Pernambuco. When the *Libra* had been repaired and reconditioned, she was later seen in Lisbon and was referred to as "a very large vessel, high bulwarks and very formidable, and to all appearances big enough to hoist the *Comet* on her decks."

In the engagement with four armed vessels off Pernambuco, one of which was a relatively powerful man-of-war, the *Comet* (with 14 guns and 100 men) boldly tackled vessels reported to have been carrying collectively 40 mounted guns and 230 men. Whereas the *Comet* was outgunned 3 to 1 numerically, the weight of metal—if the Portuguese statement of armament is correct—was against the audacious American in the ratio of 5 to 1.

Captain Boyle repaired the captured brig *Bowes* with his own crew and continued for a few days with his prize, scouring the high seas in search of British merchantmen, following which he ordered the *Bowes* to make port while he cruised alone. After chasing and boarding Portuguese vessels and escaping with ease from heavy British men-of-war, the *Comet* soon captured, following a sharp action, the Aberdeen ship *Adelphi,* commanded by Captain Raitt (360 tons; 8 long 12-pounders; twenty-five men), laden with dry goods, salt, etc., bound from Liverpool to Bahia and with a prize crew of twelve men aboard sent her to the United States. In the engagement with the *Adelphi,* the British had one killed and three seriously wounded; whereas the *Comet* had two men wounded. Shortly thereafter, Boyle stopped a Portuguese brig and placed his prisoners (about forty) aboard, but the crew of the American privateer was now reduced to seventy-seven men. Moving to the north of the West Indies, the *Comet* was chased by H.B.M. frigate *Surprise,* reputed to have been "one of the fastest vessels" in those waters, but Captain Boyle, by superior seamanship, eluded the powerful Britisher.

In early March, while in the vicinity of the Virgin Islands, the *Comet* had a lot of excitement. On the 6th, she took the armed 10-gun brig *Alexis* of Greenock (laden with sugar, rum, cotton, and coffee), which fired the first shot in a brief action, and with a prize crew of seven Americans aboard Captain Boyle sent this vessel to the United States. Immediately thereafter, the *Comet* took a second brig from "under the very nose" of the British man-of-war *Swaggerer* (armed with a battery of 18-pounder carronades and several long guns) and then teased the commander of the heavily armed British cruiser, so that his attention was diverted from the second of the captured brigs and permitted that rich prize, the packet *Dominica* of Liverpool, from Demerara bound for St. Thomas (laden with rum, sugar, cotton, and coffee), with a prize crew of eight Americans aboard, to escape his clutches. During the chase of the *Comet* by the *Swaggerer,* Captain Boyle had the effrontery when four miles ahead of the Britisher, after sighting the fast schooner *Jane* heading for St. Thomas (with a cargo of sugar, rum, and coffee), to take her, put a prize crew of seven men aboard, and sail her away from "British influence." Following this, Captain Boyle soon "ran his enraged pursuer out of sight," and then, finding himself overburdened with prisoners and with a crew of only fifty-five men, he leisurely shaped his course for home, successfully ran the severe British blockade, and reached Baltimore on March 17, 1813.

The many islands and the channels between them, with Captain Boyle's (and his officers') knowledge of the waters, helped materially in making the presumptuous American maneuvers effective, but for a privateer to take three prizes in eight and a half hours from under the eyes of a guarding vessel of the British Royal Navy was most unusual and would seem to establish a record in the successful application of American marine insolence. On this 83-day cruise (the *Comet's* second of the war), nine British vessels taken by the *Comet* were divested of the most valuable articles aboard and then sunk, as there was too much risk involved, considering their value and sailing qualities, in attempting to navigate them to an American port. Cranwell and Crane, in MEN OF MARQUE, have written:

> The second cruise of the *Comet* can be taken as a typical example of the hazards of privateering as a business, just as the first cruise of that schooner exemplified the perfect execution of the fundamental principles of privateering. . . . It will be recalled that on his first expedition Boyle captured, with virtually no loss to himself, four enemy vessels; that all reached port safely, were condemned, and sold for an aggregate of $400,000. This was the ideal: it damaged the enemy and enriched the owners and crew. On the second cruise, Boyle was highly successful in capturing enemy merchantmen and in keeping away from enemy warships; he covered himself with glory in his fight with the Portuguese brig-of-war and her convoy; and yet the cruise was a total loss financially, as not a single one of his prizes reached port. All of them were retaken by the ubiquitous English cruisers. . . . It would be improper, however, to say that Boyle's exertions had been without value. In some respects, indeed, they were more effective than the results of the first cruise. The taking of prizes within sight of an English man-of-war, the damage dealt out to the Portuguese brig and to her convoy, and the appearance of the *Comet* in widely separated parts of the West Indies were all, of course, reported to high English naval authority and to the merchants in the Caribbean. The net

result was that English cruisers which might otherwise have been used on blockade duty were retained in the South Atlantic and the Caribbean to guard convoys and single ships.

Captain Boyle and the *Comet* gave British merchants, seamen, and the admiralty itself "a fine case of nerves," and it has been truly said that the *Comet* came to be "the epitome of American privateering in the Caribbean." It would seem that Britishers thereafter mistook many American schooner privateers for "Boyle's vessel," and demands made of the Royal Navy for protection from the *Comet* were legion, although often Captain Boyle was hundreds or thousands of miles away from the reported scene of his actions. Captain Boyle's clash with Captain De Millo of the *Libra* jarred the complacency of both the British and the Portuguese. After an exchange of diplomatic messages and an investigation of an incident that was humiliating to both nations as well as a violation of international law and the operations of neutrals on the part of the Portuguese (with British encouragement), the British Government gave orders to avoid any repetition of the affair "so as not to embroil the Portuguese [or any other non-belligerent or neutral country] in any more embarrassing encounters" with the "chip-on-the-shoulder Yankees."

During the four summer months of 1813, the *Comet,* with the privateers *Revenge, Patapsco,* and *Wasp,* was used by the U. S. Government to protect Chesapeake commerce against depredations of small craft and to keep a lookout on the British blockading fleet. On October 29, 1813, the *Comet,* having been liberated from this service, again put to sea to "sink, burn, and destroy" enemy commerce. Captain Boyle eluded British blockading warships. Off St. Thomas (where the merchants had subscribed a considerable sum as a reward for the capture of the *Comet*), Boyle took the British sloop *Experiment* and burned her under the eyes of an enemy brig of war. After making numerous captures, the *Comet* took the fast armed schooner *Vigilant* (Captain Benson) on January 8, 1814, and this vessel, acting as a tender to Admiral Laforey of the British naval squadron in those waters, was sent into Wilmington, N. C.

Three days later (January 11), the *Comet* had the greatest fight of her career when she engaged and fought for most of the evening and night the big powerfully armed and well-manned British ship *Hibernia* (Captain Lennon), which was a high-sided vessel of 800 tons armed with at least 22 guns, for the officers on the *Comet* counted 14 ports to the side and saw guns in most of them in addition to bow guns and stern chasers. The "tremendous height" of the sides of the *Hibernia,* which towered above the low hull of the 187-ton *Comet* when the American ran in close to board her, with "boarding nettings running from the high bulwarks to the lower yards," prevented Captain Boyle from taking the big ship, and the guns of the Britisher did much damage to the spars and rigging of the American schooner, which was required to withdraw at times for repairs. The action had to be discontinued, with the islands of St. Croix, St. Thomas, San Juan, and Tortola in sight, as there was a large British naval squadron in those waters, and the spars, rigging, and sails of the *Comet* needed repairs before she could cope with fast heavily armed British men-of-war. The casualties on the *Hibernia* were known to be not less than twenty-one (eight killed; thirteen wounded), while those on the *Comet,* reported by Captain Boyle, were "three men killed and sixteen wounded, myself among the number, although slightly"; of the nineteen casualties, ten were reported as only "slightly wounded." The British vessel was very badly mauled, and it was reported in the press, "Not a sail of the ship escaped, and the spars and rigging were much damaged."

Within two days, Boyle was aggressively in evidence again, as he cut out two small vessels under fire from land batteries off Virgin Gorda. The *Comet* proceeded to San Juan, Puerto Rico, for refitting, supplies, provisions and water, sailing thence January 23, 1814. After taking other prizes and dodging more powerful British warships, Boyle again visited San Juan on February 19 with a sprung foremast, sailing after repairs on February 24. After taking two schooners off Curacao (ransoming the *Saint John* and burning the *Enterprise*) and dodging vessels of the Royal Navy, the *Comet* reached Beaufort, N. C., on March 19, 1814, and completed a cruise of 141 days. Writing of this his third and last cruise in the *Comet,* Captain Boyle said:

On the 19th arrived at this port [Beaufort] after a cruise of five months. I was chased during that time by thirty-four frigates and brigs-of-war and always outsailed them with ease. The admiral on the Leeward Island station offered considerable reward for the *Comet* as being the greatest plague to him of any vessel ever on those seas, but directed his smallest class of gun vessels and schooners to run away from her. I have made twenty captures [one per week], ransomed four, destroyed nine and sent the remainder into the United States.

Of the seven prizes ordered to an American port, four arrived safely, one foundered, and two were retaken by the British. The value of the *Comet's* cruise to the American cause once more could not be judged by the monetary return alone and the benefits to the owners, officers, and crew in prize money. As Cranwell and Crane say, "Boyle had held the attention of a number of British war vessels for several months, weakening the British forces available in other areas." He had also done much to weaken British morale and make British merchants panicky. Once again his cruise had diplomatic repercussions. Britain protested to Spain regarding the governor of Puerto Rico's permitting the *Comet* to make repairs at San Juan, so orders were sent from Madrid instructing the Spanish governor of that island that he "must not again violate the declared neutrality of Spain by permitting the *Comet* or other privateers to enter his harbors, repair and resupply." It was evidently correct and proper for any armed British ship to make a courtesy call at a Spanish possession, but an American privateer was to be henceforth considered taboo. Maclay says that the authorities at Puerto Rico seized the *Comet* when she was lying at San Juan "and gave her to the British," but this is incorrect. The statement that "In all, the *Comet* is credited with twenty-seven prizes" may be truthful, if qualified as to what was considered as "a prize." It is known that, at the very least, thirty-one British vessels struck their colors to the *Comet* and that many more merchantmen, privateers, and vessels of war were severely mauled and suffered from her guns. If the *Comet* had been a naval schooner, her record would have been deemed superb; but after her first privateering cruise against British shipping and the commerce of the enemy, the vessel's achievements were primarily naval and patriotically nationalistic rather than economic with respect to a financial return on private invested capital and remuneration for the services of officers and crew.

Captain Boyle was ordered by the *Comet's* owners to take the vessel to Wilmington and return to Baltimore. The British blockade of the Chesapeake had become a real one when even Boyle would not attempt (unless ordered to do so) to take his undermanned schooner back to Baltimore. British Admiralty orders were to "take or destroy the *Comet,*" for that schooner had been "outrageously tantalizing" and punishing to British tonnage, merchants, and national (or imperial) pride. Rumors of the capture of the *Comet* had been flying around since the ship's engagement with the *Hibernia* near the lair of the British naval fleet, and American newspapers had twice announced her capture. Three days before Boyle got his ship safely to Beaufort, N. C., a New York paper which told of the taking of the *Comet* reached Baltimore. On March 17, the Baltimore AMERICAN, learning from the owners that on March 8 they had heard from Boyle that the schooner at the time of writing was safely at Puerto Rico and that all was well, announced: "The report of the capture of the *Comet* is unfounded; this is the second time the New York printers have captured the vessel."

The Baltimore owners of the *Comet* evidently were getting dissatisfied with their investment in that vessel. From the first cruise, she had earned some $417,000, but after the government had taken its big share and court costs, etc., had been deducted, they had received only about $120,000 (and the crew a similar amount). Cruise No. 2, whereas glorious if the *Comet* had been a nationally owned vessel with all expenses paid and risks assumed by the government, was a failure as far as private investors (and the crew) were concerned. Although the prizes of the *Comet* reaching the United States as a result of her third privateering cruise realized some hundred thousand dollars, of which the owners received half, both the expenses and risks were high; so with the Chesapeake blockaded "as tight as a drum," Baltimore capitalists decided to quit taking more risks with their investment and put the eminently successful schooner on the market.

The *Comet* was shortly thereafter sold at auction and taken by Capt. Clement Cathell (her former chief officer) to New York in December 1814. On this passage, the historic privateer, by her speed, eluded capture by strong British naval forces, being chased by a ship of the line off the Delaware, three frigates off Barnegat, and pursued by another frigate almost into New York Harbor.

The *Comet* (Captain Boyle), in Baltimore records, is credited with taking thirty-five prizes, of which eight were sent into U. S. A. ports and one to Puerto Rico; thirteen were destroyed by fire or sunk, three were ransomed, one was used as a cartel, seven were retaken by the enemy, one foundered, and one was "given up." Outside of nine vessels carrying no description reported as "burnt," the remaining twenty-six vessels taken by the *Comet* as a Baltimore privateer are described as follows:

Name of Vessel	Type	Disposition	Name of Vessel	Type	Disposition
ADELPHI	Ship	Retaken	INDUSTRY	Schooner	Taken to U.S.A.
ALEXIS	Brig	Retaken	INDUSTRY	Ship	Taken to Wilmington
BOWES	Brig	Retaken	INDUSTRY	Sloop	Burned
DOMINICA	Packet brig	Retaken	JACKMAN	Schooner	Cartel
ENDEAVOR	Sloop	Destroyed	JANE	Schooner	Retaken
ENTERPRISE	Brig	Ransomed	JOHN	Ship	Taken to Baltimore
ENTERPRISE	Schooner	Sunk	LITTLE CHERUB	Sloop	Given up
EXPERIMENT	Sloop	Destroyed	MARY	Sloop	Foundered
GENERAL SPOONER	Sloop	Retaken	MESSENGER	Schooner	Taken to Wilmington
GENERAL WALE	Sloop	Retaken	ST. JOHN	Schooner	Ransomed
HANNAH	Brig	Ransomed	VENUS	Schooner	Taken to U.S.A.
HENRY	Ship	Taken to Baltimore	VIGILANT	Schooner tender	Taken to Wilmington
HOPEWELL	Ship	Taken to Baltimore	Unnamed	Vessel	Puerto Rico

Three months after returning to Baltimore, Captain Boyle was given command of the relatively new privateer schooner *Chasseur,* then lying at New York after completing a successful cruise under Capt. William Wade, formerly second officer on the *Comet* under Captain Boyle. The *Chasseur,* popularly known as "the pride of Baltimore," when launched from the yard of her builder, Thomas Kemp, on December 12, 1813, was the largest craft of her type built up to that time on the Chesapeake. She was originally described as "the finest clipper schooner ever built at Baltimore" and later as "the most celebrated commerce raider that ever sailed from the Chesapeake as well as one of the most renowned privateers in history." The *Chasseur* was of 356 tons (almost twice as large as the saucy, historic *Comet*) and measured 115 ft. 6 in. long on the deck, 26 ft. 8 in. beam, and 12 ft. 9 in. depth of hold. Her first owner, the merchant firm of Hollins & McBlair, placed Capt. Pearl Durkee in command and endeavored to send her as a letter of marque with freight to France. On February 24, 1813, the *Chasseur* sailed with a cargo, an armament of 10 guns (2 long 12-pounders and 8 12-pounder carronades), and a crew of fifty-two men; but she got but little farther than Annapolis, where Durkee found a large number of American vessels waiting to get past the hostile fleet that had bottled up the bay. After several abortive attempts to run the blockade, the *Chasseur* returned to Baltimore. On September 24, 1813, Durkee again cleared for Bordeaux, but got no farther than Annapolis, and after lying there for three weeks, the crew mutinied and refused either to stay on the schooner or take her to sea.

The *Chasseur* was sold by auction on November 10, 1813, and a syndicate of seventeen men bought her for privateering. An additional 4 long 12-pounders were added to her armament, making her a 14-gun vessel (6 longs and 8 carronades—all 12-pounders). Capt. William Wade (a pupil of Captain Boyle) was given the command, and with a crew of 148 men, the *Chasseur* sailed on December 26 on her first of three privateering cruises. Wade was held at the mouth of the Potomac until January 19, 1814, when he sailed in thick weather for the open sea thirteen months and seven days after the vessel had been launched and about a year after her builders and original owner had declared her ready for service. The *Chasseur* passed close to a 74-gun British ship of the line, two frigates, and two brigs of war and at times dangerously skirted the shore before she reached the open ocean, but thick weather and a fortuitous snowstorm helped her to run the blockade. The *Chasseur* went to the Caribbean, then over to the coast of Portugal, and returned to New York June 1 after a cruise of 133 days, during which she captured at least twelve vessels (two were Americans, which were caught trading with the enemy and burned). Her first prize was the British ship *Galatea,* with a valuable cargo, which was taken off the Florida coast and sent into Beaufort. Her last prizes of note were the British ship *London Packet* and the schooner *Melpomene* (both armed, but taken the same day in late April in European waters, without firing a shot) and the 6-gun Maltese polacre *Joanna,* laden with wheat worth $80,000. After an adventurous crossing, the *London Packet* reached Hyannis, and the *Melpomene* got safely into Newport, R. I., with prize crews. The *Joanna* was burned after her 40 men had been placed in small boats and sent ashore. On this cruise, the *Chasseur* had many speed contests with reputedly fast British frigates and beat them all decisively. She made New York by outsailing the British razee H.B.M.S. *Saturn,* which was one of the vessels of the Royal Navy blockading the port.

The *Chasseur* was sold at auction in Baltimore on June 13, 1814, delivered in New York, and Capt. Thomas Boyle (who had saved his prize money and returns from his investment in the *Comet*) was one of the syndicate of new owners. Boyle arranged the complement of the *Chasseur* as 150 men, consisting, besides himself, of 3 lieutenants, 8 prizemasters, 2 master's mates, a captain of marines, a boatswain with 2 mates, a gunner with mate, an armorer, a carpenter with mate, and 3 quartermasters; a ship steward, a cabin steward, and a cook; a drummer and a fifer; 50 able seamen, 29 ordinary seamen, 24 marines (or landsmen), and 16 boys. Boyle also changed the schooner's armament, substituting long guns for carronades and equipping the ship with 16 of these long 12-pounders. The waters of the West Indies and the western Atlantic were swarming with British cruisers, and Captain Boyle was determined to cross the Atlantic, carry war into enemy home territory, and cruise in British waters. He felt that in the *Chasseur* he had the speed and mobility needed for his purpose of choosing with whom and at what range he would fight. The carronade was a good weapon for close action, as it threw a heavy shot or a big charge of grape a short distance, but it was more easily upset than a long gun and could not be used to advantage in chasing or at long shot. The range of a long 12-pounder was equivalent to that of a 32-pounder carronade, and Boyle figured that at the distance that he would often choose to fight, the *Chasseur,* with her long guns, would have a weight of metal of her effective armament fully equal to that of much larger and theoretically more powerful vessels armed—as most vessels were—primarily with carronades. Whereas Boyle well knew that armed British vessels would be plentiful in home waters, he was aware of the tremendous number of units in the British mercantile marine, the large number of home ports, and the established practice of assembling and dispersing convoys in British waters, and he felt that, with the proper sort of vessel under him, he could inflict more damage to British commerce in the eastern Atlantic and in the vicinity of Britain's shores than he could in any other waters.

The *Chasseur* was built as a double topsail schooner, but Boyle put spars and sails aboard so that he could quickly change her (in an attempt to deceive the enemy) into a full brig, a brigantine, a single topsail schooner, or a straight "fore-and-after." Cranwell and Crane say that Boyle probably deceived but few British mariners by his change of rig. "He was recognized more by his methods than by the appearance of his ship. His sailing and his fighting bore the Boyle hallmark, and with that the English had been familiar ever since July of 1812 when the *Comet* put to sea." Captain Boyle made an attempt to get to sea on July 24, 1814, but was forced by a British ship of the line and three frigates to put back and anchor off Staten Island. After a delay of four days, he cleverly eluded the blockading squadron and by good seamanship, fast sailing, and a favorable wind got to sea. On the passage to British waters, the *Chasseur* captured five enemy merchant vessels (three brigs, a schooner, and a sloop), sent four of them with prize crews to the United States, and made the fifth, the sloop *Christiana* (bound from the Canaries to Scotland laden with cork), taken August 24, into a cartel and sent her to a British port "packed tight with prisoners." At least eighteen merchant vessels (four ships, eleven brigs, two schooners, and one sloop) were captured by the *Chas-*

seur during her first cruise under the command of Captain Boyle, for it is known that the following vessels were taken:

Name of Vessel	Rig	Remarks
ECLIPSE (taken Aug. 16; the first prize)	Brig	Buenos Aires for Liverpool. Laden with hides, furs, and some specie. Put prize crew aboard and sent to U.S.A.
COMMERCE (taken Aug. 19)	Brig	New copper-sheathed vessel. Newfoundland for Spain. Laden with fish. Put prize crew (11 men) aboard and sent to U.S.A.
ANTELOPE (taken Aug. 21)	Brig (9 guns)	From Havana to Britain. Laden with sugar. Put prize crew aboard and sent to U.S.A.
FOX (taken Aug. 22)	Topsail schooner	Newfoundland for Spain. Laden with fish. Put prize crew aboard and sent to U.S.A.
CHRISTIANA (taken Aug. 24)	Sloop	Canaries for Scotland. Laden with cork. Put prisoners aboard and sent to England as a cartel.
REINDEER	Brig	Hailing from Aberdeen, Scotland.
FAVORITE (taken Aug. 26)	Topsail schooner (also reported as a sloop)	A Scottish vessel laden with wine. Most of cargo removed. Vessel burned.
PRUDENCE (taken Aug. 26)	Brig	A Scottish vessel. Both cargo and vessel of little value; after search, were burned.
MARQUIS OF CORNWALLIS (taken Aug. 27)	Brig	Had been previously stopped by American privateers. Used as a cartel for prisoners and blockade announcement.
JAMES (taken Aug. 28)	Brig (armed; also reported as a ship)	South America for England. Put prize crew aboard and sent to U.S.A.
ATLANTIC (taken Aug. 28)	Ship (armed)	South America for England. Put prize crew aboard and sent to U.S.A.
THEODORE	Ship	British general trader.
SPECULATOR (taken about Sept. 15)	Brig	Previously stopped and released by U. S. privateer GRAMPUS. Put prisoners aboard and let her go.
A Portuguese ship recaptured from British prize crew. Taken about Sept. 16.	Ship	Lisbon to Boston with wine and opium. Taken by British for running American blockade. Opium removed and ship released.
HARMONY (taken Sept. 19)	Brig	Canada to Britain. An Aberdeen vessel laden with lumber. Put prisoners aboard and released.
ALERT (taken Sept. 20)	Brig	Canada to Britain. Laden with lumber. Vessel and cargo burned.
CARLBURY (taken Sept. 21)	Ship (armed)	Jamaica for England. Cargo of cotton, cocoa, tobacco, hides, and indigo. Removed part of cargo worth $50,000. Put prize crew aboard and sent to U.S.A.
AMICUS (taken Sept. 29)	Brig	West Indies for Britain. Put prize crew aboard and sent to U.S.A.

Captain Boyle (as did Admiral Farragut half a century later) acted on the principle of "the nearer you get to your enemy, the harder you can strike." His policy of "bearding the lion in his den" tantalized the British "outrageously," but kept Boyle almost persistently in "hot water" and required for its execution sublime heroism, with a constant exhibition of superior seamanship in conjunction with a faster and handier (as well as most reliable) vessel and the smiles of Dame Fortune. On August 25, the *Chasseur* was chased by a British frigate and a man-of-war brig, but "outsailed them with ease" and within twenty-four hours retaliated by capturing and burning two British merchantmen. On August 30, in order to protect two recently taken prizes and give them an opportunity to escape recapture, Boyle feigned an attack on a British frigate, which to engage seriously would have been plain suicide. Nevertheless, Boyle sailed in close, maneuvered, and gave the big heavily armed and fast Britisher each of his broadsides in turn. The frigate's replies, with 24-pound shot, inflicted damage to the relatively light American privateer, injured the foremast and dismounted a gun, and one shot going through the deck wounded three men. The next day, four vessels of the Royal Navy (two frigates and two man-of-war brigs) attempted to capture or destroy the *Chasseur,* but after dodging trap after trap Boyle finally got his vessel (then apparently rigged temporarily as a brig) out of danger.

On September 3, the *Chasseur* again came in contact with British warships; Boyle failed in an attempt to decoy a frigate away from a recaptured merchantman (so he could double back and retake the prize), but "made monkeys" out of two large disguised man-of-war brigs that had been sent out to capture him. Far too shrewd to be taken in by the British ruse, Boyle amused himself and annoyed the enemy "by pretending to take the bait," edging down on the larger of the two brigs, and as the counterfeit merchantmen, acting in concert, removed their disguise to bring their guns into play, Boyle fired at the brig nearest him, "displayed the Yankee flag hauled upon a wind, and outsailed them both with ease." On September 6, Boyle had occasion to display all of his skill in seamanship and the *Chasseur,* all of her sailing qualities. When dawn broke, the American privateer was virtually becalmed and within a triangle formed by three British men-of-war (a frigate and two brigs). Boyle admits in his log, "Narrowly escaped capture, owing to the calmness of the weather"; he anticipated a concerted boat attack, as the British vessels carried large barges and men trained in such warfare. By taking full advantage of every breath of air, Boyle worked his vessel out of danger, only to fall in the next day "with four men-of-war ten leagues west of the Scilly Isles"; on this occasion, there was a breeze, and we read that the *Chasseur* "outsailed the enemy with ease."

On September 10, Boyle encountered the British man-of-war brig *Fly*—one of six vessels of the Royal Navy sent by the admiralty out of Plymouth to seek, capture or destroy "the insolent Yankee pest." The *Fly* was disguised as a peaceful merchantman, but Boyle was not to be deceived by such tactics, and after chasing her and becoming convinced of her nature and power, he outsailed her as much in running away from trouble as he had in overhauling her when considering her as a possible prize. A few days later, two British brigs of war endeavored to capture the *Chasseur,* but it was the same old story. Boyle was too wily and the American privateer far too fast for them, and after teasing them for a while, the *Chasseur* showed "a clean pair of heels" to her would-be captors.

The British blockade of the American coast was quite generally referred to in the United States press and by a good part of the public as a "paper blockade," which implied that the proclaimed blockade was not effective. The British admirals (Warren and Cochrane) on the American stations had been issuing proclamations of blockades, on the strength of which British cruisers were withdrawn at will from the ports declared "blockaded" and transferred to other parts of the coast without, in the estimation of the British Navy, invalidating the proclaimed "paper blockade." Captain Boyle considered British procedure presumptuous and decided to show how ridiculous it was (and at the same time "throw a scare" into British merchants) by acting on the principle that what a British naval commander could do, he—the commander of an armed American vessel—could also do. It has been said that Boyle "had but one vessel, but he had plenty of paper [nerve and a sense of humor], and following the best English usage he drew up his famous proclamation of blockade" of the British Isles. Exhibiting an unequaled "superb audacity," Captain Boyle, while cruising in the English Channel, had his unique "proclamation," most elaborately prepared (it was an artistic and convincing formal document exhibiting splendid workmanship), sent to London by means of a British vessel—used as a cartel—to be posted at Lloyd's Coffee House. (The brig *Marquis of Cornwallis,* captured on August 27, 1814, was evidently the vessel that carried the historic document ashore.) The wording of this famous proclamation, copied from the purported original document, was as follows:

PROCLAMATION
issued by
THOMAS BOYLE, Esq.
Commander of the *Chasseur*

WHEREAS it has been customary with the Admirals of Great Britain commanding the small forces on the Coast of the United States, particularly with Sir John Borlaise Warren and Sir Alexander Cochrane, to declare the coast, of the United States, in a State of Strict and rigorous blockade without possessing the power to justify such a declaration or stationing an adequate force to maintain such blockade.

I do therefore, by virtue of the POWER and AUTHORITY in me vested (possessing sufficient force) declare all the PORTS, HARBOURS, BAYS, CREEKS, RIVERS, INLETS, OUTLETS, ISLANDS and SEA COASTS of the UNITED KINGDOM of GREAT BRITAIN and IRELAND in a state of strict and rigorous BLOCKADE.

And I do further declare, that I consider the force under my command adequate to maintain STRICTLY, RIGOROUSLY, and EFFECTUALLY, the said blockade.

And I do hereby require the respective

officers, whether Captains, Commanders, or Commanding Officers under my command, employed or to be employed on the coasts of ENGLAND, IRELAND and SCOTLAND, to pay strict attention to this my PROCLAMATION.

And I do hereby caution and forbid the SHIPS and VESSELS of all and every NATION in AMITY and PEACE with the United States from entering or attempting to enter, or from coming or attempting to come out of any of the said PORTS, HARBOURS, BAYS, CREEKS, RIVERS, INLETS, OUTLETS, ISLANDS, or SEA COASTS, on or under any pretence whatever.

And that NO PERSON may plead IGNORANCE of this my PROCLAMATION I have ordered the same to be made public in ENGLAND.

Given under my hand on board the *Chasseur.*

THOMAS BOYLE.

By command of the Commanding Officer
J. B. STANSBURY, Sec'ty

After seeing the proclamation of a blockade of the British Isles on its way, Captain Boyle quickly applied himself to carrying out its enforcement by promptly taking two valuable prizes, the armed British merchantmen *Atlantic* (ship) and the *James* (brig) sailing in company from South America to England. On August 30, the *Chasseur* again came in contact with the British sloop *Christiana* (captured on August 24—and the American privateer's first cartel), so Captain Boyle supplied this vessel, on her way to an English port, with provisions and "at the same time informed them [the captain and people aboard the *Christiana*] that England, Scotland and Ireland were by me declared in a state of strict and rigorous blockade, and that my proclamation to that effect had been duly published and forwarded to Lloyd's for the government of all persons interested."

The name of Capt. Thomas Boyle of the American privateer *Comet* had been known to the British Admiralty and the British Lloyd's since the summer of 1812, and in August of 1814 the worthy "Yankee" commander, on his new privately owned armed "hornet," was again being forcibly brought to their attention. After Boyle captured the British letter-of-marque brig *Antelope* (sugar laden) on August 21 and—without so much as firing a musket—on boarding her found that she was armed with 8 18-pounder carronades and a long gun, he was so disgusted with the cowardice of her commander that he felt "such low-spirited conduct merited an official reproach"; therefore, he adopted the seemingly unprecedented course of writing a report of the episode to the lords of the admiralty, which letter, we are told (after being noted), was passed on to the officials of the British Lloyd's. About the same time that the British Admiralty and Lloyd's heard of Boyle's reaction to the ignominious timidity of the officers of the *Antelope,* they had reason to be more shocked than amused by the intrepid Yankee captain's effrontery in having posted in London his outrageous proclamation of a "paper blockade" of the British Isles. While described as "a cynical document of an upstart," nevertheless, it was "disturbing to the public and humiliating to the Royal Navy"; for this "absurd declaration" was accompanied by seizures of "numerous British merchantmen," by persistent "teasing and defiance of the British Navy," and by much painful "twisting of the British Lion's tail." In the meanwhile, Captain Boyle, "tongue in cheek" and with a probable twinkle in his eye, got a great deal of amusement and a measure of patriotic satisfaction out of his joke, which, in fact, operated to bring peace nearer to a war-weary British public.

After the British brig *Amicus* was taken (September 29), the *Chasseur* had been at sea just two months, and her complement, because of the drains made upon her for prize crews, had been reduced to less than sixty men all told. She had a valuable cargo worth some hundred thousand dollars in her hold and about as many prisoners aboard as she had members of the crew, so Captain Boyle headed for home and, after successfully running the blockade off the American coast, anchored in New York Harbor on October 24, 1814.

During November, the *Chasseur* was overhauled and reconditioned; the foremast, damaged by a British frigate, was replaced and this mast fitted with yards so that she would sail on her next cruise as a brigantine. Surprisingly, Boyle had changed his mind in regard to the best armament for his vessel as a result of his experiences on his first cruise in her, and 10 of the long 12-pounders were replaced with carronades. The *Chasseur,* as repainted, carried two wide yellow stripes along her black sides. On the very day that she sailed from New York on her second and last privateering cruise under the command of Captain Boyle (December 24, 1814), the treaty of peace between Great Britain and the United States was being signed at Ghent, Belgium. As has been said: "Fortunately for Boyle and the other owners of the *Chasseur* the treaty stipulated that prizes taken by either side in the West Indies were valid if captured within thirty days of the ratification of the treaty by Congress and the Parliament." Captain Boyle, sailing from New York on Christmas Eve, knew what weather to expect in the North Atlantic in mid-winter, so he logically decided to sail south to the Caribbean. Before he had proceeded far on his way, the *Chasseur* encountered "heavy and severe gales," which damaged spars, sails, and rigging. In early January 1815, Boyle was off the British Isle of Barbados and promptly made contact with vessels of the Royal Navy. Contrary to privateering custom, the Yankee commander (acting in a spirit of deviltry to plague and enrage the British naval officers and affect their morale) seemed deliberately to seek an engagement with a powerful British frigate. Instead of promptly running away after sighting her, the *Chasseur* maneuvered around her and actually worked in close enough to exchange broadsides (with short carronades). A man-of-war brig joined the British frigate, and within plain sight of the harbor of Bridgetown, a naval base where lay a ship of the line flying a British admiral's flag and other vessels of war (as well as much merchant shipping), Boyle gave the British an exhibition of his own impudence and seamanship and of what his brigantine could do in sailing and handiness. Boyle humiliated the British by his teasing tactics, and the admiral sent out another fast frigate either to take "the insolent Yankee" or to drive him off. Boyle retaliated by actually taking the little trader *Elizabeth* from under the noses of three vessels of the Royal Navy, searching her for valuables, and then destroying her by fire, following which Boyle decided to end the Bridgetown show and "made all necessary sail on a wind."

For the next three days, the *Chasseur* played "hare and hounds" with British naval cruisers and outmaneuvered, outguessed, and outsailed them all; but her spars, damaged in the gales encountered in the North Atlantic soon after leaving port, commenced to give trouble (notwithstanding frequent repairs made by the carpenter and crew), so Boyle took her into St. Pierre, Martinique, to try to obtain new spars or have permanent repairs made to the old ones. Prior to reaching St. Pierre, the *Chasseur* was off St. Vincent (arriving January 11), where she "loitered awhile," inflicting some damage on British shipping. The sloop *Eclipse* (laden with candles and linen) was taken, the crew removed, and the vessel sunk; the sloop *Mary* was seized, searched, and scuttled under the guns of the fort, her crew escaping to the shore. A letter from an Englishman resident at Martinique says that the *Chasseur* was at St. Pierre three days (January 13-16), with a sprung mainmast and a split main boom. Repairs were made to the mast and a new boom supplied by the French, which the Englishman correctly said was "not a good one, and will not bear the press of much canvas."

About this time, the British merchants of St. Vincent presented a memorial to Admiral Durham, in which it was said that the United States privateer *Chasseur* had blockaded them for five days, doing much damage, and requested that the admiral send them at least "a heavy sloop of war." The memorial recites how the *Chasseur* was frequently chased "in vain," at one time by three British cruisers. It criticizes Martinique for permitting the American vessel to refit there and for supplying her with a new boom, for treating the commander of the *Chasseur* very politely, and for allowing M. De Bue, the French intendant at the island to invite Captain Boyle to dine with him on Sunday—"a fine companion truly for the governor of such a colony as Martinique." Evidently, the British of St. Vincent considered Captain Boyle a pirate and wanted him treated as such by all "civilized nations"; yet Boyle respected international law— which was something the British often failed to do (particularly with respect to the territorial waters of neutrals) when they deemed it to their interest to violate it. When leaving St. Pierre, the *Chasseur* passed close to a British merchant ship that would have made a valuable and easy prize, but Boyle would not touch her, "as both vessels were in neutral waters." The British merchants' memorial further complained that the *Chasseur* ventured within gunshot of the forts of St. Lucia to cut out the transport *Lord Eldon* and probably would have done it had not the sloop-of-war *Wolverine* arrived on the scene most opportunely; that the *Chasseur* destroyed two sloops "in the face of the island"; that she hoisted the Yankee Stars and Stripes over the British ensign, "played many curious pranks," etc.

During the two weeks after leaving Martinique, the *Chasseur* cruised among the islands, had an engagement with a land battery protecting a ship, chased several vessels into fortified harbors, and had the new boom shipped at St. Pierre carried away in an attempt to jibe. Then on January 30, in heavy weather with high seas running and squalls with winds of gale force, the large and powerful H.B.M.S. *Barrosa* (acknowledged by the British to be "one of the swiftest and most successful frigates in the Royal Navy") came very near to effecting her capture. The relatively huge size and freeboard of the *Barrosa* gave her a tremendous advantage in the heavy seas and wind over the relatively small, low-lying and partially crippled *Chasseur.* Boyle had to keep his brigantine running before the wind; he could not reach or beat, and the British frigate gradually crept up on him and brought her bow guns into action. Boyle was then subjected to the humiliation (often forced upon less speedy and handy privateers) of lightening his vessel in an effort to escape capture by a superior force, and his 10 carronades, spare spars, and all possible movable heavy weights and much of the fresh water had to be sacrificed. Boyle moved 2 long 12-pounders aft, cut down the taffrail, and commenced firing with evident success at the oncoming frigate's spars and rigging. The *Barrosa* ceased to gain, and as the weather moderated, the *Chasseur,* still firing pluckily with all the guns she could bring to bear on the enemy, commenced to pull away from the big and speedy Britisher. The *Barrosa* had been sighted at 3:00 a.m., and by noon it seemed that the capture of the *Chasseur* was inevitable. For twelve hours the American privateer was in grave danger, but at 7:00 p.m., the chase was over and the *Barrosa* practically hull down astern. It is said that Admiral Durham had sent out the fast and powerful British frigate under specific orders "to seek, capture or destroy the American privateer *Chasseur.*"

Captain Boyle, with an armament of only 6 of his original 16 guns left and with his spars in a rather patched-up condition, most assuredly did not lose his nerve; but as soon as the weather permitted, he put about and followed the *Barrosa* back to his former cruising grounds. A few days later, the *Chasseur,* by speed, handiness, and daring, took the large armed British ship *Corunna* (Captain Dempster) after a short fight. This ship had 8 9-pounder carronades and eighteen men aboard, and the guns were promptly mounted on the *Chasseur,* giving her 14 guns (6 long 12-pounders and 8 9-pounder carronades) firing 144 lbs. of metal as against 192 lbs. as she was armed before her flight from the *Barrosa.* The *Corunna* was sent in with a prize crew of twelve men aboard, and the eighteen prisoners were transferred to the *Chasseur.* Boyle shortly thereafter captured the British ship *Adventure* (loaded principally with iron), removed articles of value and most of the crew of fourteen, and ordered her in with a prize crew. The ketch *Martin* was taken and burned, and on February 13 the ship *Mary and Susanna* (bound from London for Jamaica) was taken, part of her cargo removed, and the vessel sent to a U.S.A. port. A week later, a Spanish schooner was stopped, and Boyle removed from her a quantity of indigo, which was British property.

On February 26, 1815, when the *Chasseur* was "about thirty-six miles to windward of Havana and some twelve miles from the Cuban shore," the privateer sighted a schooner to the northeast running before the wind. The capture of this vessel, which proved to be His Britannic Majesty's 15-gun schooner *St. Lawrence* (Lieut. James C. Gordon, R.N.), was destined to add materially to Captain Boyle's historic fame and to his reputation for daring and success on the high seas. The *St. Lawrence* was originally "the formidable American privateer *Atlas*" (Capt. David Maffitt), armed with 10 guns and carrying a crew of 104 men, which, after making successful cruises against the enemy, was captured when at anchor in Ocracoke Inlet, Pamlico Sound, North Carolina, on July 12, 1813, by a powerful British squadron consisting of a 74-gun battleship, three frigates, a war brig, and two tenders carrying 500 British troops and a detachment of artillery. The *Atlas* was taken into the British Navy and refitted as a heavily armed British cruiser. She became, it is said, "a valuable addition to the fleet, taking an active part in many expeditions along the American coast and acting at times as a dispatch boat, in which service her fine sailing qualities and an ability to take care of herself in the presence of the enemy gave her every advantage."

The astute Lieutenant Gordon, in command of the British war schooner *St. Lawrence,* had learned "Yankee tricks." The *St. Lawrence* was disguised as a weakly armed and manned "running vessel"; when she fired her stern chaser and apparently prepared for action, she showed only three gun ports on her side and very few men on deck. The vessel was powerfully armed, however, with 15 guns (14 12-pound carronades and 1 long 9-pounder) firing 177 lbs. weight of metal; whereas the *Chasseur's* guns (if she had had the shot to use) rated 144 lbs. Boyle, reporting after the action, wrote: "The *St. Lawrence* fired double the weight of shot that we did, and from her 12's at close quarters she fired a strand of grape and two bags containing 220 musket balls each, when from the *Chasseur's* 9's were fired 6 four pound shot having no other, except some few grape." The fight lasted fifteen minutes, and the *St. Lawrence* struck her colors when the *Chasseur* was alongside and about to be boarded. The crew of the Britisher was said to be seventy-five men, but she "had on board a number of soldiers, marines and some gentlemen of the navy, passengers bound express to the squadron off New Orleans." Boyle mentioned that "the *St. Lawrence* had on board 89 men besides several boys" when later he and his men counted the prisoners, and whereas the British commander reported six killed and seventeen wounded (most of them badly and several of them mortally), Boyle questioned the truth of these casualty figures and wrote the owners of the *Chasseur:* "From the number of hammocks, bedding, etc., found on board of the enemy, it led us to believe that many more were killed than reported." Of the twenty-three visible casualties on the *St. Lawrence,* nine were killed or died shortly after capture, and many wounded were not designated as such by the British, but Captain Boyle was required to send his own surgeon aboard to relieve their suffering. According to general accounts, the casualties on the British warship were "15 killed and 25 wounded," and Boyle officially reported the result of the fight on the complement of the *Chasseur*: "From the zeal and anxiety of my brave crew to do their duty, and thereby exposing themselves, I have 5 killed and 8 wounded, myself among the latter, although very slight." Because of manning three prizes, the *Chasseur* had only 102 men and boys (including officers) aboard, and it was authoritatively declared that "the vessels were equally manned with fighting men when the action started, but the *St. Lawrence* had a very decided advantage in gunpower, position, and (through her excellent disguise and deception) in the element of surprise, as the *Chasseur* was within pistol shot and unprepared for action with a king's ship, when the true nature and power of her adversary was revealed."

Captain Boyle reported that the *St. Lawrence* "was a perfect wreck, cut to pieces in the hull and scarcely a rope left standing"; whereas "the *Chasseur's* sails and rigging suffered much." In a postscript to a report written to George P. Stephenson, of Baltimore, as "agent for the privateer" and representative of the owners, Boyle said:

> On the night of the 26th the main topmast of the *St. Lawrence* went by the board; such was her wretched condition, that for the solicitation of her commander I made a flag or cartel of her to carry the wounded to Havana for their better comfort and convenience, as I know you would wish that I mitigate the sufferings of the unfortunate wounded. I hope you will not be displeased at what I have done. There was no other alternative but to make a cartel of her, or destroy her. I should not willingly perhaps have sought a contest with a king's vessel knowing it was not our object, but my expectations were at first a valuable vessel and a valuable cargo. When I found myself deceived, the honor of the flag left with me was not to be disgraced by flight.

In this apologetic explanation of his conduct in ridding the seas of a ship of war and a "hornet," or commerce destroyer, of the British Navy, Captain Boyle stated the weakness in a patriotic sense of the privateer, whose owners expected such a vessel to capture merchant ships and their cargoes, but to steer clear of armed vessels that, being without cargo, were not worth fighting for and, being heavily armed and manned, could be expected to cause great damage and losses to the privately owned ship. Even if a privateer should capture an enemy cruiser and remove a pest from the ocean, it was argued that the victory would be a hollow one in terms of dollars; for even if the captured warship escaped recapture and was brought into port, her net realizing value and the cost of repairs to the victorious privateer would bring no profit to her owners but rather a loss of money, of valuable time, and of men. The commander of a privateer was expected to work for profit and not for glory.

Captain Boyle made repairs and put a jury rig on the *St. Lawrence,* heaved her guns into the sea, and sent her into the nearby port of Havana with only a prizemaster aboard (and no American crew) but as the pledged property of the United States. The vessel was ultimately returned to America and sold to the account of her captors.

On March 15, 1815, the *Chasseur,* after making repairs to her rigging and experiencing a spell of bad weather, learned from the American brig *Eliza* (bound from Boston to Richmond) that the war was over and that the treaty of peace had been signed by the president on February 17, 1815. Boyle thereupon headed for home and on March 18 reached Baltimore, where he and his brigantine were welcomed by a large and enthusiastic crowd. It was "a triumphal return." The cruise had occupied 84 days. Eight enemy vessels had been captured, including a king's ship, and British property removed from a Spanish schooner; three British vessels had been sent in with prize crews, and the hold of the *Chasseur* was reported to be "full of valuable prize goods." Baltimore records show that the *Chasseur* took, all told, thirty-six prizes during her career as a privateer. The captures when under each of her two captains and the disposition of the prizes were as follows:

Name of Captain	Sent in	Retaken by Enemy	Destroyed: Burned	Destroyed: Sunk	Cartel	Total Prizes
Wade	5	1	4*	—	1	11
Boyle	9	6	6	1	3	25

*Two of these were American schooners operating with British licenses.

The particulars of the thirty-six prizes taken by the *Chasseur* are as follows:

Name	Type	Disposition	Name	Type	Disposition
ANN MARIA	Schooner	Burned	CHRISTIANA	Sloop	Cartel
(Captain Wade)	(American)		COMMERCE	Brig	Sent to Charleston
BRITANNIA	Brig	Sent to Beaufort	CORRUNA	Ship	Sent to Wilmington
GALATEA	Ship	Sent to New Bern	ECLIPSE	Brig	Sent to New York
HARRIET			ECLIPSE	Sloop	Burned
ELIZABETH	Schooner	Sent in	ELIZABETH	Schooner	Burned
JOANNA	Polacre	Burned	FAVORITE	Sloop	Burned
LARK	Schooner	Retaken	FOX	Schooner	Sent in
LONDON PACKET	Ship	Sent to Hyannis	HARMONY	Brig	Cartel
MARTHA	Sloop	Cartel	JAMES	Ship	Sent in
MELPOMENE	Brig	Sent to Newport	MARQUIS OF		
MIRANDA	Schooner	Burned	CORNWALLIS	Brig	Cartel
WILLIAM	Schooner	Burned	MARTIN	Ketch	Burned
	(American)		MARY	Schooner	Sunk
ADVENTURE	Ship	Retaken	MARY & SUSAN	Ship	Sent to Savannah
(Captain Boyle)			PRUDENCE	Brig	Burned
ALERT	Brig	Burned	REINDEER	Brig	Sent in
AMICUS	Brig	Sent in	SPECULATOR	Brig	Cartel
ANTELOPE	Brig	Retaken	H.B.M.		
ATLANTIC	Brig	Retaken	ST. LAWRENCE	Schooner	Sent in
CARLBURY	Ship	Retaken	THEODORE	Ship	Retaken

The fame of the *Chasseur,* "the pride of Baltimore," was not to rest solely on her achievements as a privateer in the War of 1812. She was primarily a merchant vessel. In 1816, under Capt. Hugh Davey (who had commanded the privateer *Pike* and the letter-of-marque *Perry* during the war), the *Chasseur,* rigged as a brig, was in the China trade and sailed from Canton to the Virginia Capes "in the astonishing time of 94 days, with a record run of 84 days from Java Head."

The Privateer AMERICA *of Salem—Reputed to Have Been the Fastest Sailing Vessel Afloat during the War of 1812*

A privateer *America* (Capt. George Williams), a schooner mounting 8 guns and carrying 80 men, was owned by Salem during the War of the Revolution, and another privately owned armed vessel of this name was commissioned by John Adams in 1802 and made a cruise against the French. The famous *America,* however, was a different sort of vessel from her predecessors and was built at Salem in 1803-1804 by Retire Becket for the merchant service; she was of about 350 tons register (114 ft. long on deck and 31 ft. beam), and her owners were George Crowninshield & Sons. Commanded by Capt. Benjamin Crowninshield, Jr., she sailed from Salem on her maiden voyage in the summer of 1804 to the Dutch East Indies, with 10 guns mounted and a crew of 35 men.

When war was declared in 1812, the Crowninshields decided to fit out their big fast merchantman as a privateer. The upper deck was removed and "her sides filled in solid like those of a frigate"; longer yards, royal masts, and a flying jib boom were supplied, with "an enormous spread of canvas." Her armament consisted of 18 long 9-pounders and 2 18-pound carronades (i.e., 20 guns), although at times she evidently carried an additional 2 6-pounders. For small arms, the record shows "40 muskets, 4 blunderbusses, 55 pistols, 73 cutlasses, 10 top muskets, 36 tomahawks, or boarding axes, and 39 boarding pikes." Her complement is shown to have ranged from 142 to 168 men, in all, when leaving port, the average being about 150 officers and men, of whom 20 were "landsmen," or marines, and 7 prizemasters.

On her first cruise against the enemy, the *America,* commanded by Capt. Joseph Ropes, left Salem on September 7, 1812, and returned January 7, 1813, having taken six prizes valued at $158,000 during a cruise of 122 days. The British vessels captured were as follows:

Name of Vessel	Captured 1812	Rig	Remarks
JAMES AND CHARLOTTE	Sept. 23	Brig	From Liverpool to St. Johns. Cargo of hats, dry goods, and coal. Put prize crew of 7 men aboard, which took her into Salem.
BENJAMIN	Nov. 6	Brig	From Newfoundland to England. Put prize crew of 9 men aboard and ordered into any U.S.A. port north of Nantucket.
RALPH NICKERSON	Nov. 19	Brig (8 guns)	From Quebec to London. Cargo of lumber. Put prize crew of 12 men aboard, which took her into Marblehead.
HOPE	Nov. 24	Ship (12 guns)	From St. Thomas to Glasgow. Cargo of sugar, rum, and cotton. Put prize crew of 13 men aboard and sent her to a U.S. port.
DART	Nov. 25	Brig (8 guns)	From West Indies to England. Cargo of rum, cotton, etc. Put prize crew of 9 men aboard, which took her into Salem.
EUPHEMIA	Dec. 16	Brig (10 guns)	From La Guayra to Gibraltar. Cargo of coffee. Put prize crew of 12 men aboard, which took her into Portland, Maine.

The second cruise of the *America* was under the command of Capt. John Kehew (who had been first lieutenant under Captain Ropes on the first cruise). She sailed from Salem and returned to Bath, Maine, in early July 1813 after an absence reported as "about four months at sea." During this time, she made ten prizes, of which three were made into cartels to get rid of 130 paroled prisoners, three reached American and two French ports under prize crews, and two were recaptured by the British. The *America* landed 30 prisoners at Bath. One of the prizes taken on the cruise was the American ship *St. Lawrence* found trading with the enemy, which was sent with a prize crew into Portsmouth, N. H., where both the ship and her cargo of British goods were condemned.

The *America* was under the command of Capt. James Chever, Jr., on the remainder of her cruises during the war. Sailing from Bath, Maine, December 3, 1813, the Salem privateer made her third cruise, which occupied about four and a half months, and she returned to Portsmouth, N. H., in April 1814 after capturing twelve prizes. The log shows that on December 14, 1813, in very heavy weather with high seas running, the *America* overhauled and exchanged broadsides with a 600-ton British transport "mounting 28 or 30 guns"; but Captain Chever wrote, "We concluded if we took him we should not reap any advantage as he could not be of much value; therefore thought it prudent to leave him." The Britisher was light, evidently with no cargo or valuable stores aboard, but being "full of men," she could not be handled safely by a prize crew from a privateer; neither could the *America* accommodate the soldiers as prisoners of war. On January 18, 1814, Chever took the "English schooner *Martha,* Wm. Williams, master, from Waterford, bound for Cadiz; cargo dry goods, butter, bacon, beef, etc.; put on board Wm. C. Hooper as prizemaster with six men and ordered her to America." Ralph D. Paine, writing of the *America's* activities along lines of crippling Britain's commercial strength, says: "The *America* swooped among these deep-laden craft like a hawk in a dove cote, snatching them from convoys, or picking them up in the English Channel almost within sight of their own shores."

The log shows that on January 23, 1814, the British ship *Diana* (Capt. Geo. W. Carlton) was taken. She was bound from London for Madeira loaded with deals. After four hours had been spent in moving the fifteen members of the crew, a passenger, and certain articles of value from the vessel, the *Diana* was burned. On January 26, the *America* made chase, overhauled and captured what "proved to be the British brig *Sovereign* from Cork bound for Liverpool, John Brown, commander." Continuing the log, Captain Chever wrote: "Took on board the prisoners and put on board Mr. Hall prizemaster, with six men, and ordered her to America. Her cargo consisted of coals, crates, butter, etc." The *Sovereign,* which, historians tell us, was a brig of 300 tons and had "an assorted cargo," reached Portsmouth, N. H., and was condemned and sold there. The evening of the day following the capture of the *Sovereign,* the *America* overtook, fired upon, and brought to (according to Chever's log) "the British ship *Falcon,* Atkinson, master, from Liverpool via Lisbon, bound to the Canaries, with a very valuable cargo of merchandise." "At 11 [p.m.] took on board the prisoners. Put on board Mr. Cleaves as prizemaster with 12 hands." To illustrate the varied cargoes revealed in the prizes taken by privateers, the following contemporary newspaper item regarding the *Falcon* is quoted:

> Among the goods of the valuable prize brig *Falcon* sent into Bath [Maine] by the *America* of Salem, were about 900 Bibles in the English and Dutch languages and 500 Testaments forwarded for distribution at the Cape of Good Hope by the British and Foreign Bible Society. The Messrs. Crowninshield to whom the privateer belonged, permitted a purchase of them to be made by the Bible Society of Massachusetts at a price hardly sufficient to legalize the sale—say about 20 cents to the pound sterling.

On January 28 (forty-nine hours after the *Sovereign* was taken), the *America* captured the British brig *Ann* of London (Captain Appleton) bound from Oporto to Bayhei in ballast. Chever wrote: "Not being of much value, permitted him to pass, after putting all our prisoners on board of him, being forty-six in number including the brig's crew, and directed him to land them in Teneriffe and there to report to the proper officer."

Other prizes taken by the *America* on this cruise, as reported by Maclay, were: brig *Margaret* (220 tons; 10 guns), with salt from Cadiz for Newfoundland, taken into Salem; brig *Brothers* sent into Fuentarrabia, Spain, and sold there by the consent of the officials; brig *Apollo* (250 tons) of Poole, laden with salt, "which shared the fate of the *Margaret*"; schooner *Hope* "from St. Andrews for Barbadoes, laden with lumber, beef and oil"; schooner

Sylph "of Liverpool, Nova Scotia, with fish oil, etc." We also read: "Several prizes were destroyed at sea, and a number were released so as to get rid of prisoners."

The *America* sailed on her fourth cruise on October 31, 1814, but was unlucky, as she struck a submerged derelict at sea and was so badly damaged by this collision that she had to return to port before she made any captures. Captain Chever took the privateer into Salem for repairs, and she sailed from there on her fifth and last cruise on November 25, 1814. B. B. Crowninshield, in making an interesting summary of the *America's* log, wrote:

On this cruise the sea seemed to be full of English men-of-war and much of the *America's* time was taken up in dodging and running away from frigates, and the crew no doubt realized that danger of capture to which they were continually exposed; at all events the log on Jan. 8th and on each succeeding Sunday records that "all hands were called to prayers," although prayers were in no way allowed to interfere with the management of the ship or the furtherance of the purpose for which she was fitted out. They attended prayers at intervals before, and had returned thanks for a Merciful Providence Dec. 11.

On January 22, 1815, the *America* captured the schooner *Arrow* from Catalonia for London, with 100 casks of almonds and 1,650 casks of hazelnuts aboard. The prize was sent to Salem. About this time, the brig *Adeona* was taken, laden with 450 bales of broadcloth, and also sent into Salem. On January 23, the *America* is said to have shown a clean pair of heels to a fast and powerful British frigate. Another prize of this period, the British schooner *Thistle,* was of interest, for this vessel, under an American prize crew, was recaptured on March 19, 1815, off Cape Sable by the British sloop-of-war *Cossack* and sent into Halifax, N. S.; later, the *Thistle* was restored to the Salem owners of the *America,* as the British had retaken her after the time limit set by the treaty of peace signed at Ghent on December 24, 1814. The cargo found on board the *Thistle* consisted of a rather comprehensive and curious assortment of linens, chintzes, women's shoes, pickles, teas, beads, medicines, wines, hats, muskets, gunpowder, prunes, nests of trunks, etc.

On February 27, 1815, the *America* fell in with H.B.M. ship packet *Princess Elizabeth* of 188 tons, carrying 8 guns (6 9-pounder carronades and 2 long brass 9-pounders) and a fighting crew of thirty-two men. An action of twenty minutes resulted before Capt. John Forresdale, commander of the royal packet (bound from Rio de Janeiro to Falmouth), struck her colors—and this only after two of her crew were killed and thirteen severely wounded (among whom was the British commander). The *America* received no loss "in men, rigging, sails, or hull, from this engagement, but Captain Chever said in his report:

The packet was very much cut to pieces. She had 8 shot holes between wind and water, 3 nine-pound shot in her mainmast, just above deck, one in her mizzenmast, one in her main-topmast and one in her fore-topmast, with her braces, bowlines and part of her shrouds and stays cut away, and about 700 shot holes thro' her sails besides a large number through her bulwarks. On our approaching them, they thought us to be some cunning ship with 12 or 14 guns and the rest Quakers [wood dummy guns]. But they found their mistake so as to convince them that Quakers were not silent at all times. Took out her guns, muskets, pistols, cutlasses, powder and shot on board the *America,* and gave her up to her original crew, to proceed on to Falmouth, after putting on board 6 prisoners, and a quantity of bread, as they had on board only 15 pounds for 25 men. Sent our doctor on board to dress the wounded.

Some of the other prizes taken by the *America* during this her last cruise as a privateer were the British schooner *Swift* and the brig *Enterprise.* On her passage to the United States, the *Enterprise* ran into severe weather with high seas and winds of gale force; she put into Fayal in distress and was condemned. The *America* destroyed at sea the schooner *Robert,* the sloop *Jubilee,* the cutter *Busy,* and the schooner *Black Joke.* (If not the identical vessel, this schooner at least bore the name of the "first and most successful of all the Canadian privateers"—a small 67-ton schooner—which Snider asserts showed net earnings of £52,800.) The *America* arrived at Salem on April 18, 1815, after a cruise of 144 days. The time of return is generally stated by historians as April 10 and the cruise as of 134 or 136 days, but the log of the *America* reads:

April 18. At 4 p.m. came to with the best bower in seven fathoms and handled all sails and fired a salute of forty guns. People all discharged to go on shore. So ends the ship *America's* last cruise.

The privateer took thirteen prizes on her last cruise. She is credited with capturing forty-one British vessels and of sending twenty-seven of them safely into port. Six of her prizes were recaptured by the British, and the balance were either destroyed at sea or sent into enemy ports, with paroled prisoners aboard, as cartels. Maclay says that the *America* "proved to be a veritable 'gold mine' for her owners" and that the property taken by her from the British that was "brought safely into port realized $1,100,000, while the amount of property she destroyed at sea would be represented by a much larger figure." Another record says that in the course of the war the *America* "netted her owners six hundred thousand dollars." Ralph D. Paine, marine historian of Salem, says that the officers and crew of the *America* "divided more than one-half million dollars in prize money." We also read that the captures of Captain Chever in that famous privateer ran to nearly a million dollars. "The exceptional sailing qualities of this vessel were a great aid to her successes, and it was said that she was never outsailed while testing her speed against the fleetest, often maintaining the rate of 13 knots for hours and frequently averaging more than 10 knots for twelve consecutive hours."

Strange as it may seem, "the peerless *America*," with the war over, never went to sea again. For reasons unknown and inexplicable in these days, the handsome, speedy vessel of a good size for foreign commerce, which had proved herself an excellent merchantman during a period of eight years before the war, was allowed to lie dismantled alongside Crowninshield Wharf in Salem for sixteen years, when she was sold at auction and broken up for the metal in her. *Sic transit gloria mundi.* The Essex REGISTER of June 16, 1831, contains in its advertising columns the following melancholy obituary of this famous ship, then in her twenty-eighth year:

Hull, etc. of ship AMERICA
AT AUCTION
On Thursday next at 10 o'clock
(Necessarily postponed from Thursday)
Will be sold by auction at the Crowninshield Wharf
The Hull of the Privateer Ship AMERICA
Very heavily copper-fastened and worthy attention for breaking up.

Also—about 1,000 pounds of Powder consisting principally of cannon and musket cartridges.
A quantity of old Iron, Rigging, old Canvas, Blocks, Spars—a complete set of Sweeps with a variety of other articles.
The sale will commence with the materials June 16.

GEORGE NICHOLS Auct'r

A good deal of money was spent on the *America* in changing her over from a merchant vessel to a privateer, and it is probable that she was not put back in commerce because of the expense that would have been involved in reconstructing a spar deck, removing a lot of protective heavy oak, and reducing her spar and sail plan so that she could be operated with a crew no larger than used prior to 1812. It has also been suggested that the *America,* in colliding with a submerged derelict in November 1814, injured and strained her hull far more than was admitted at the time and that thorough repairs, coupled with rehabilitation as an economic merchant ship, would have been a costly and long drawn-out job. Historian Paine tells us that long after the war, Captain Chever, then master of an American ship, met Sir James Thompson, captain of the British frigate *Dublin,* at Valparaiso. The *Dublin,* it is said, had been rearmed and fitted out by the admiralty in 1813, "with the special object of capturing the American privateer *America,*" and Sir James Thompson, without knowing of Chever's connection with the *America,* told of his persistent and futile attempts to catch the fast Yankee ship. "I was almost within gun-shot of her once just as night was coming on," he said, "but by daylight she had outsailed the *Dublin* so devilish fast that she was no more than a speck on the horizon."

The Notorious PRINCE DE NEUFCHATEL—*a New York Privateer That Made History under Captain Ordronaux*

The American privateer *Prince de Neufchatel* was described as a schooner, but she had, in fact, a hermaphrodite rig and was a combination of a brigantine and a schooner. The vessel carried on yards four square sails on the foremast and two yards, with one square sail on the main; she had schooner fore-and-aft sails (lower and upper), with gaff and boom on the main, and a large fore-and-aft sail with gaff abaft the fore, with large staysails over and three jibs (or foresail, jib, and flying jib). She was heavily canvased, with lofty spars and an unusually long bowsprit and jib boom, and the spanker boom projected far beyond the stern. She was a flush-decked vessel, with high bulwarks, through which eleven gun ports were cut on each side and two in the stern. However, the records show that the privateer never carried more than 18 carriage guns and at times only 17, and outside of a couple of long-chase guns, her battery evidently consisted of 12-pounder carronades.

The *Prince de Neufchatel* was built at New York in 1812-1813, and the design and construction are attributed to Christian Bergh. The original owner was Madame Flory Charretton, an American citizen resident in New York, whose son-in-law, Capt. J. Ordronaux, was commander of the French privateer *Marengo.* This vessel captured the British brig *Lady Sherlock,* from Halifax bound for Jamaica with a valuable cargo, and took her as a prize into New York on August 10, 1812. The "*Neufchatel*" measured 110 ft. 8 in. long on deck, had an extreme beam of 25 ft. 8 in., and was of 320 tons burthen. She had a "V" midship section, with big deadrise and practically no bilge; she had a wide, square stern, but little sheer, and not much freeboard from the deep load water line to the weather deck. The vessel had fine underwater lines aft, but was inclined to be full forward, with good buoyancy and but little flare. Following completion, the "*Neufchatel*" lay inactive in New York for many months, and it was not until October 28, 1813, that a letter of marque was issued to her and Captain Ordronaux, the names of the sureties on her bond being Madame Charretton, J. Ordronaux, C. G. Fontaine, and Stephen Perpignon (evidently all Franco-Americans). Captain Ordronaux took the vessel to sea virtually unarmed and sailed to Cherbourg, France, where she was fitted out as a privateer. The statement made that the *Prince de Neufchatel* was built as a fast merchantman is evidently untrue, for her design clearly shows that she was built as a speedy ship of war or as an illegitimate trader, such as an opium clipper, where the bulk and weight of cargo were but very little and speed was essential to evade blockade patrols, etc. It is said that the famous opium-smuggler *Red Rover* was built by copying the lines of the privateer *Prince de Neufchatel* as taken off at the Deptford dockyard in England.

The first cruise of the privateer against British shipping and commerce originated at Cherbourg in early March 1814, and in a short period the "*Neufchatel*" took nine prizes in the English Channel. Those of value were sent into French ports, where they arrived safely, and the others were burned. On her second cruise, leaving Cherbourg in June, the "*Neufchatel*" "caused great damage to the enemy shipping," and we read, "Though she was chased by seventeen British men-of-war during her cruises, her speed was so great that she had no difficulty in escaping them." In six consecutive days, six prizes were taken in the English Channel, and all were sent into Havre, where they were sold. In August, a British brig refused to surrender and was sunk by gunfire. Records show that the "*Neufchatel*" destroyed the British brigs *Steady, James, Triton, Apollo, Sibron, Albion, Charlotte,* and *Mary Ann;* the sloops *Jane* and *George;* the cutter *General Doyle*; and the armed transport *Aaron* (bound from Gibraltar for Lisbon). Several captured vessels were used as cartels to get rid of the "*Neufchatel's*" constantly accumulating prisoners; among this class of liberated seizures were the brigs *Nymph* and *Barewick Packet* (running from Cork to Bristol), which had fifty passengers aboard. The British ship *Harmony* (4 guns) and a privateer were captured, but the ship, with a prize crew aboard, was retaken by the British, and before actually taking possession of the privateer, the "*Neufchatel*" was driven from the scene by a superior British naval force.

While the American privateer was on this highly successful and profitable cruise, her owner (Madame Charretton) died in New York, and as both the command and the crew of the "*Neufchatel*" wanted to get back to the United States, the vessel made a westward crossing of the Atlantic and late in September 1814 appeared at Boston, where she was refitted. Sailing on her first privateering cruise from an American port, she left Boston the end of the first week in October and proceeded as if bound for New York, with a very small crew of from thirty-seven to forty officers, men, and boys aboard. We read, "The entire number of men in the privateer fit for duty was thirty-seven." The British merchant ship *Douglass* was captured, and the "*Neufchatel*," when four days out and about a half mile to the south of Nantucket Shoal, with her prize in tow, discovered the British 40-gun frigate *Endymion* coming up on her during a calm. The Britisher had the advantage of a slight breeze, which the American did not enjoy. At seven o'clock in the evening, it was calm, with the "*Neufchatel*," *Douglass,* and *Endymion* in plain sight of each other, but the British could not get alongside of the American privateer because of depth of water and was not within effective gun range. Captain Ordronaux, finding that the current was sweeping him shoreward, cast off his tow as night came on, and the "*Neufchatel*" and her prize anchored about a quarter of a mile from each other. Soon after it was quite dark, five boats (under First Lieut. Abel Hawkins), armed with swivel guns and carrying 120 men, left the *Endymion* to take the American privateer by boarding. The expedition was well planned, and at about the same time Ordronaux found British boats at both his bow and stern, one on one side and two on the other, his ship surrounded, and his extremely small crew compelled to fight a determined force of British tars (well trained in boarding tactics) outnumbering his men three or four to one, who were clambering up his ship's sides at five different points. A desperate and bloody struggle ensued, which lasted for twenty minutes. Few British gained the deck of the "*Neufchatel*," and Captain Ordronaux, who had sworn never to surrender his ship, threatened to blow her up with all on board and around her if his men did not drive back the one group of British who got a deck hold and was organizing to rush the ship. Seizing a lighted match, Ordronaux ran to the companionway directly over the magazine and shouted that he would carry out his threat if his men did not drive the Britishers overboard; this the Americans proceeded to do, fighting with frenzy for their lives, and "the fear of being blown into eternity by a madman" weakened the British attack.

Of the five attacking boats, one was sunk with, it is said, "43 men aboard, of whom only 2 were rescued"; another was captured with 36 men aboard, and when taken 8 were killed, 20 wounded, and only 8 uninjured; the other three boats drifted off from alongside the "*Neufchatel*," "apparently without a living person in them." The casualties of the British were stated as 49 killed and 37 wounded (a total of 86), and 30 other men were taken prisoners—an aggregate loss of 116, which leaves only 4 men unaccounted for. Other British figures of loss (almost invariably understated) give 70 to 93 men "killed, wounded and missing," which would indicate that from 27 to 50 men who were in the five boats got back to the *Endymion,* a claim that Captain Ordronaux branded as "impossible and absurd." Lieutenant Hawkins, the leader of the expedition, was killed; while the second lieutenant and two midshipmen were severely wounded, and a third midshipman, "suffering injuries," was made a prisoner. The American casualties were naturally very severe, for out of a crew of 37 men, 7 were killed and 24 wounded—a total of 31, or 84 per cent.

Captain Ordronaux, with only six physically sound Americans aboard and only a dozen or so capable of performing any duties, could not handle his ship and take care of his prisoners. After disarming them and removing all oars, spars, and sails from a launch, he placed them aboard and secured the boat under the stern of the *"Neufchatel,"* where it could be watched during the night, and next day took them ashore and placed them in charge of the United States marshal. As soon as the wind served, the American privateer, with her prize, evaded the *Endymion* and, setting sail back to Boston, reached there on October 15, 1814. A British historian, in writing of the clash between the *"Neufchatel"* and the *Endymion,* says that the drifting boats were picked up by the British frigate the day after the battle with many of the men aboard, most of them wounded, and we read:

> So determined and effective a resistance did great credit to the American captain and his crew. On the 31st [of October, 1814] the *Endymion* fell in with the 56-gun ship *Saturn,* Captain James Nash, bound for Halifax, and, sending on board, with her surgeon and his servant, twenty-eight wounded officers and men, received from the *Saturn* to replace the severe loss she had sustained, one lieutenant, four midshipmen and thirty-three seamen and marines.

Maclay, in A HISTORY OF AMERICAN PRIVATEERS, says that the extraordinary feature of the *"Neufchatel"-Endymion* affair was "that an American vessel fitted out at private expense actually frustrated the utmost endeavors of a British frigate of vastly superior force in guns and men to capture the privateer." The *Endymion,* rated as a 40-gun frigate, had probably 48 to 50 guns aboard, and most—if not all—were of a much larger caliber than the 17 guns on the American privateer; moreover, the *Endymion* had a crew of 350 men, whereas at the time of the action the *"Neufchatel"* was shorthanded, with practically a mere minimum sailing crew aboard of only 37 men (or but little more than one-tenth of the complement of the British frigate). Maclay writes: "As the commander of the *Endymion* said, he lost as many men in his efforts to seize the *Prince de Neufchatel* as he would have done had his ship engaged a regular man-of-war of equal force, and he generously acknowledged that the people in the privateer conducted their defense in the most heroic and skillful manner." Later, the *Endymion* did have a running fight of two and a half hours' duration with the United States 44-gun frigate *President,* "a regular man-of-war of equal force," during which the Britisher was whipped. She reported her loss as 11 men killed and 14 wounded—or total claimed casualties of 25 men; whereas in her attack on the American privateer the British frigate's killed were four times as many and her total loss "killed, wounded and missing" some four or five more than sustained in a naval action with an American frigate "of equal force."

After returning to Boston, Captain Ordronaux joined with two of Madame Charretton's trustees in acquiring title to the *"Neufchatel,"* the price paid the estate being $21,000. Ordronaux, as an owner, decided to stay ashore, and a new letter-of-marque commission was issued to the *"Neufchatel"* on December 12, 1814, with Nicholas Millin as captain ("a Jew by persuasion, a Frenchman by birth, an American by convenience"). With a crew of 120 men aboard, the privateer got to sea on her last cruise on December 21, 1814, in spite of the vigilance of the British blockading squadron. Five days later, the vessel encountered a very severe gale, and on December 28 (four days after the peace treaty had been signed at Ghent) she sighted a squadron of three British frigates. These enemy war vessels were the big, new and fast frigates *Leander* and *Newcastle* (each designed to take the American forty-fours such as the *Constitution, President,* and *United States*) and the *Acasta.*

We read from the report of one of the *"Neufchatel's"* crew:

> The morning of December 28 broke with no prospect of the gale ceasing and the brig [*"Neufchatel"*] looked more like a wreck than the staunch and proud craft of the week previous. She was stripped to her stumps, all her yards, except her fore and fore-topsail were on deck, her rigging in disorder, and the decks lumbered and in confusion from the effects of the sea which had so often broken over them during the past night.

Much of this confusion was attributed to an incompetent third officer, who had the 4:00 to 8:00 a.m. watch, and among his many errors of omission was not keeping a keen watch aloft. When he was relieved at 8:00 a.m., enemy ships were in sight and the American in a wretched condition for flight. The high seas and gales severely handicapped the relatively small *"Neufchatel"* in sailing, for the British ships had high freeboard and were about four times the tonnage of the privateer. The *Prince de Neufchatel* was put on her best point of sailing, but she took much water aboard and lost a lot of canvas, and in spite of every effort, she was surrounded and captured after a chase which lasted most of the day. It is said that notwithstanding the handicap of relative size and of wind and sea, the *"Neufchatel"* would have escaped her pursuers if they had been sighted earlier and if the privateer "had not lost spars in carrying too much sail." The British frigate *Newcastle* reported that during the chase the ship logged 13 knots for hours and that at this time the American was more than holding her own. It is to be regretted that the little *"Neufchatel,"* "taking a tremendous pounding from the seas" and "pitching frightfully," lost spars and canvas before her pursuers; for only "a few minutes after the surrender, one of the frigates lost her jib boom, fore and main topgallant masts and broke her mizzen-topsail yard in the slings, while another frigate carried away her mizzen-topsail, main topgallant yard and strained her fore-topsail yard so as to endanger it by carrying sail."

If Captain Ordronaux had been aboard the *"Neufchatel,"* she would not have been captured, for that strict disciplinarian would have promptly discovered the approach of the enemy, and his vessel would have been prepared to flee from danger, without any loss of time. The matter of a few hours as daylight waned spelt the difference between safety and capture; moreover, Ordronaux would probably have got as much (or more) speed out of his ship without sacrificing spars, canvas, and rigging. Capt. Thomas Boyle, when he found himself in a somewhat similar predicament in the privateer *Chasseur,* chased in a heavy sea and winds by the big and fast British frigate *Barrosa,* escaped by superb seamanship, but he threw his guns and all portable heavy weights overboard—something that the commander of the *"Neufchatel"* evidently did not do. When the *"Neufchatel"* was attacked by the boats of the British frigate *Endymion,* Ordronaux declared that he would "never surrender his ship to the enemy," but that he "would blow her up first." His actions proved that he was prepared to do it, and his words were no idle threat. Ordronaux's successful fight, his valorous defense, and his attitude of defying death to win glory made the brave and worthy captain a great hero.

It is surprising that some two and a half months later, while a powerful British squadron was overhauling the crippled little *"Neufchatel"* in a heavy sea and gale, one of the seamen on the historic vessel who had sailed with Ordronaux on all her privateering cruises was looked upon as a "crazy fool" when he asserted, as had Ordronaux before him, that "the brig shall never be taken by the enemy" and "will never sail under the British flag." There was a small coterie of old seamen who had known *"The Prince"* in her glory as "the scourge of the British coast" and the victor over the frigate *Endymion,* who had sworn with Ordronaux never to let the British take her, and who well knew that Captain Millin, when given the command by Captain Ordronaux, had at the latter's insistence pledged himself "never to surrender the brig"; these men, as the chase continued, became articulate in their demand to do or die and if need be "go down with the ship, but never give her up." A few others who had been British prisoners declared that they would much prefer to go to the bottom of the ocean rather than be captured again. The first lieutenant, however, was not of the stuff of which heroes are made. He deputized men to watch the patriots as if they were traitors, and at the moment of rounding to—for Captain Millin, against his solemn pledge, had decided to strike her flag—the lieutenant knocked down a man who "seized a brand from the caboose, proceeded toward the magazine," and in true Ordronaux fashion would have blown up the *"Neufchatel"* and all on board rather than have the noble vessel suffer the disgrace of capture by the enemy. The sailor, José, was accused of being guilty of "diabolical intent" and was branded a "dastard" by some of his fellows who preferred life with ignominy to death with glory. Ordronaux was a hero; under a different captain, a common sailor who sought to emulate Ordronaux was branded as a demented villain and a would-be murderer of his fellowmen. There were many on board the *Prince de Neufchatel* who did not take kindly to the striking of her colors, at least without a fight, and that night certain American officers rallied their men and gained the deck with a view of recapturing the vessel, "but a look aloft at the brig's spars and sails soon convinced them that any attempt to escape would be hopeless."

The commodore of the British squadron, Sir George Collier, was so impressed with the speed and quality of design and construction of the "*Neufchatel*" that instead of sending her to Halifax (the usual procedure), he sent her to England and particularly called the attention of the admiralty to her. Upon arrival, "*The Prince*" was taken into the Deptford dockyard, surveyed and measured, and her model lines taken off in dry dock. In taking the vessel out of the dock, the British "stupidly hung her up on the sill of the dock-gates and broke her back." She was thereupon condemned for navy use, but new vessels for the Royal Navy were built from her lines. In the 1830's, there was an English schooner yacht named the *Prince de Neufchatel* that had a reputation for speed, and as her stated dimensions are practically the same as the New York-built vessel of that name, it is possible that the American privateer, after being condemned and sold, was rebuilt. The *Prince de Neufchatel* was generally considered a "lucky vessel," and under Captain Ordronaux her record as a privateer was brilliant. We are told that "usually she carried about 80 men, but at various times her total complement varied from 40 to 120." Maclay says, "The goods captured by her from the enemy and brought safely into port sold for nearly three millions of dollars, besides which a large amount of specie was secured."

The Privateering Cruises of the GRAND TURK *of Salem*

Excluding a relatively modern wood trading schooner (1916-1924), there have been three *Grand Turks,* all Salem-owned and all historic vessels. The first vessel of this name (1781-1788) was a famous privateer during the War of the Revolution and was a big full-rigged ship, which was pierced for 28 guns and carried 120 men; she was sold to the French in 1788. The second *Grand Turk* (1791-1795) was a "tremendous ship" for her day—a three-decker of 560 tons carrying a crew of 30 men. (She was sold as a ship of 700 tons burden for $22,000 in March 1795.) The third *Grand Turk* was built not at Salem, as were her predecessors, but at Wiscasset, Maine, and the enterprising builder of this famous brig inserted the following advertisement in the Salem GAZETTE of September 8, 1812, offering his new vessel, built on speculation, for sale:

PRIVATEER. To be sold at Wiscasset, if application is made immediately, a vessel of about 300 tons, pierced for 18 guns exclusive of bridle and stern ports, every way calculated and proportioned for the present times, and such an one as can be safely recommended to those who may feel disposed to purchase. Said vessel is built after the model of the fast sailing ship *Volante* and by the same master workman. If not sold within 14 days, she will be sent to a southern port. For further particulars, and terms, apply to Brooks's Hotel, Wiscasset, Sept. 5, 1812.

The MARINE NEWS of September 28, 1812, announced the arrival in Boston of "a beautiful new brig pierced with 18 guns from Wiscasset," and after inspection by many Massachusetts shipowners, merchants, and patriots, a group, or syndicate, consisting of twenty-seven Salem individuals (including one firm), a Marblehead and a Boston investor, or adventurer, purchased the vessel, which the papers described as a full-rigged brig (five yards on each mast) of 309 tons register, 102 ft. in length, 28 ft. beam, and 12 ft. 4 in. depth of hold, with "a square stern, one deck, no galleries and a billet figure-head." She was a loftily sparred vessel with a wealth of canvas, including head and staysails and a big spanker, and had very high and heavy protecting bulwarks. It was not until November 5, 1812, that the purchase was consummated and the vessel was taken from Boston to Salem (her new home port) to be fitted out and armed as a privateer. There was an annoying delay in getting guns for the brig, and it was not until January 28, 1813, that a commission was issued by President Madison authorizing the new vessel, which had been named the *Grand Turk* (*III*), and her appointed commander, Capt. Holton J. Breed, to cruise against the enemies of the United States. The brig sailed from Salem on her first voyage on February 16, with 18 guns and 95 men on board, and laid a course for the south.

Little is known of the first privateering cruise of the *Grand Turk* (*III*) other than that she sailed deep into the South Atlantic. In Lat. 26° S. and Long. 40° W., she captured the armed British ship *William* of 208 tons, bound from Liverpool to Buenos Aires with a cargo of coal, iron, dry goods, wine, and hardware; this vessel, with a prize crew aboard, was sent into Boston, where she was condemned and sold for $18,804.80. It is known that the *Grand Turk* also captured the British ship *Apollo,* bound from London to the Argentine, and a schooner loaded with fish and oil; the latter was taken into Portsmouth, N.H., but a British report says that the *Apollo* was recaptured in the North Atlantic and taken by the Royal Navy into Bermuda. Although there is no log in existence of this cruise, it is known that the *Grand Turk* acted patriotically as if she were a government naval vessel and not a privately owned brig when she encountered the unarmed American ship *Talbot* (which knew nothing of the war and was unprepared for it), bound from Sumatra for Salem with a valuable cargo of pepper aboard, and convoyed her until she was clear of Pernambuco and beyond the cruising ground of British warships and armed merchantmen. Returning home, the *Grand Turk* was chased by two British frigates off the Massachusetts coast, so she ran into Portland, Maine, where she arrived May 28, 1813, after a cruise of 101 days (stated as 100 days). Watching her chance, the privateer evaded the British blockaders and slipped into Salem on June 6. Felt's Annals of Salem refers to an incident of significance that occurred on the run down the coast to Salem: "Just before she entered harbor, she was boarded by a person from Cape Ann who supposed her to be an English cruiser. Not being undeceived, he gave full information of our vessels expected and offered supplies of provisions. Captain Breed gave him a heavy dose of tartar emetic and jalop in a glass of grog to cure his disposition for treason." Maclay says that on this first cruise the *Grand Turk* "captured three large vessels carrying heavy armaments and a schooner, all of which were ordered to France," a statement which does not seem to check with known facts, for on this voyage the privateer sailed entirely in the western Atlantic, West Indies, and off the coast of South America, and it would be unreasonable to send prizes taken in these waters to France.

For some unaccountable reason, the *Grand Turk* stayed at Salem for about four and a half months, and it was not until Tuesday, October 19, 1813, that she got to sea to commence her second cruise; this was decidedly late in the year to sail on a privateering adventure against the enemy in the North Atlantic. Captain Breed was still in command, and he had a very big crew (reported as 150 men) aboard when he left Salem. The official log of November 23 (when thirty-five days out), after three vessels had been captured and 34 men put into two of them as prize crews, states that there were then 113 men on board besides 56 prisoners. The *Grand Turk* experienced much heavy weather on this North Atlantic cruise to the coast of Ireland, and she encountered gales soon after leaving port. On November 23, the log reads: "This is the first time these 22 days our deck has been dry." The crew was "a motley bunch of men." On November 6, with strong gales blowing and a high sea, Captain Breed put Richard Smith into irons for "riotous & disorderly conduct & disobedience of officers" and "convicted" Benjamin Stacey "of wantonley & maliciously cutting a large hole in the fore-topsail." On the thirty-fourth day of the voyage (Sunday, November 21), the log shows a prizemaster and seven other men on the invalid list. The following list of captures on this cruise has been compiled from Captain Breed's report, and in closing his log on Thursday, January 20, 1814, the Yankee skipper wrote: "At 6 p.m. anchored in Salem Harbour after a cruise of 94 days and capturing 7 prizes man^{d} 4 burnt 2 [one of them scuttled; not burned] and made a cartel of the 7th."

The *Grand Turk* remained in port less than a month and sailed from Salem on her

Name of Captured Vessel	Rig	On Passage	Date Taken	Remarks
TRYAL (Capt. John Thompson)	Brig (167 tons)	From Prince Edward Island for Liverpool. (Forty-five days out.)	Nov. 14, 1813	Built in 1799; rebuilt in 1806. Crew of ten men. Cargo of 235 tons pine timber invoiced at £358-13-0 sterling. Stripped vessel of all portable things of value and scuttled her.
WOLFES'-COVE (Capt. William Compleman)	Ship (356 tons; 2 guns)	From Quebec for London. (Sailed under convoy with twenty-six British merchantmen.)	Nov. 16, 1813	Built in 1812; a fine new copper-fastened vessel. Crew of twenty men. Cargo of 500 tons of oak and pine timber, spars, staves, etc., invoiced at £3,000 and 38 bales of furs invoiced at £12,000. Put prize crew of nineteen men aboard. Vessel and cargo estimated as worth $60,000. (Too rough to take furs aboard *Grand Turk*.)
GENERAL KEMPT (Capt. William Thompson)	Ship (381 tons)	From Quebec for Liverpool. (Sailed in October.)	Nov. 21, 1813	Built in August 1813; a fine new copper-fastened vessel. Crew of seventeen men. Cargo of "masts, spars, deals, oak & pine—timber, staves, etc." Value of vessel estimated at £7,273-3-9; cargo invoiced at £2,604-11-3. Vessel and cargo valued by Captain Breed at $40,000.
JUNO (Capt. John Horsewill)	Brig (115 tons)	From St. Johns, Newfoundland, for Dartmouth. (Sailed Nov. 23 with a fleet of forty merchantmen convoyed by four warships.)	Dec. 8, 1813	Danish-built; captured by British in 1807. Had thirteen men aboard (crew and passengers). Cargo of 23,461 gallons of fish oil (mostly cod liver oil) and some cured fish and fish products. Vessel and cargo valued in France at $50,000. Put prize crew aboard and sent to "the first port in France." Arrived at Roscoff.
GRACES (Captain Bibbins)	Brig	From Lisbon for Britain. (Taken in Lat. 45½° N., Long. 39° W.)	Dec. 16, 1813	Loaded with 120 tons of salt. Put prize crew on board, but on Dec. 17 took crew off and decided to send the vessel with sixty-five prisoners aboard as a cartel to Fayal.
MINERA (of Greenock)	Brig (209 tons)	From Pictou, N.S., for Greenock, Scotland. (Taken in Lat. 42½° N., Long. 42 2/3° W.)	Dec. 22, 1813	Loaded with "black burch and pine timber." Crew of "10 men & officers." Captain Breed reported: "Took out prisoners and set her on fire. A gale of wind . . . prevented us from getting anything out of the prize having only one small boat between the two vessels."
"An English schooner"	Topsail schooner	From Halifax for Bermuda. (Taken in Lat. 40° N., Long. 62 1/5° W.)	Jan. 12, 1814	Loaded with livestock. Captain Breed reported: "Took out the prisoners and man'd her out for the United States." Hard gales from WNW.

third cruise on February 17, 1814, under the same command (Captain Breed). When four days out, in wintry North Atlantic gales, the brig lost her main-topmast and fore-topgallant mast; one man was drowned, and two were injured by falling spars. Near the Azores, on March 19, the brig was chased all day by a fast 74-gun British man-of-war but cleverly eluded her pursuer. Having taken three prizes on her first and seven on her second cruise, the *Grand Turk* continued her raids against enemy shipping off the coast of Portugal in April 1814. A brief synopsis of the captures made by the *Grand Turk* on this third cruise is as follows:

Prize No.	Name of Vessel	Rig	Remarks
11	INDIAN LASS	Brig	From Liverpool to the Azores with a cargo of dry goods, crockery, and cheese. Some of the cargo and crew (as prisoners) taken on board the *Grand Turk*, and the British vessel sent to the U. S. A. under a prize crew.
12	CATHERINE	Brig	From Lisbon for London. Put prize crew aboard and sent to U. S. A. Was captured by H.M. brig *Bacchus*, which ordered her to England under a British crew. Was retaken by *Grand Turk*, stripped of valuables, and burned.
13	THOMAS & BETSEY	Brig	From Lisbon for London. Sent with a prize crew to a U. S. port.
14	THETIS	Brig	From Patras and Malta for London. Sent with a prize crew to a U. S. port.
15	CAROLINE	Sloop	From London for the Azores. Neither vessel nor cargo deemed of much value, so all prisoners transferred to her from the *Grand Turk* and the *Caroline* used as a cartel.

On May 2, 1814, in Lat. 50½° N., Long. 23° W., the *Grand Turk* fell in with the British Royal West India mail packet armed brig *Hinchinbroke* (Captain James), homeward bound from St. Thomas, West Indies, and fought the most serious battle of her career, which proved indecisive when boarding nets saved the British vessel from capture and heavy shooting from the enemy's 24-pounder carronades had made the American privateer unmanageable. The action commenced at 5:00 p.m., and the log of the *Grand Turk* reads:

> We continued engaging within half musket-shot until half past 6, when all our braces, bowlines, mainstay, both foretopmast stays, jib and topgallant stays, backstays and part of the foretopmast rigging were cut away; sails completely riddled, having at least six hundred shot holes through them; and foretopsail and main-yards partly crippled, which rendered us unmanageable; commenced repairing damage. At 7, having got our masts secured and braces rove and at half past 7 preventer stays and braces up, gave chase to the enemy, who was attempting to escape. At 10 p.m. a heavy sea and fresh squalls and thick squally weather. Close-reefed our topsails, whilst doing which the enemy, we suppose, bore up and we lost sight of him. He was very much cut up in his hull and had from 15 to 20 shot-holes below his bends; whereas we had no shot in our hull except a few grape, the enemy directing his fire at our spars and rigging. In this action we lost two killed, Daniel Fry and Thomas Hatfield. The captains of the tops, stationed there in time of action, reported that the enemy had as many men on his deck as the *Grand Turk*, and mounted ten 24-pound carronades and two long brass 9-pound cannon.

The *Grand Turk*, soon after her engagement with the *Hinchinbroke*, headed for home and reached Portland, Maine, on June 5, 1814, after a cruise of 108 days. In addition to the three prizes sent to the United States, the American privateer had aboard property to the value of $65,000 taken from the five vessels captured. After a few days in the Maine port, the "*Turk*" proceeded to Salem, where she underwent a complete overhauling. She sailed on her fourth privateering cruise on August 6, 1814, under the command of Capt. Nathan Green, the course being to the English Channel, thence into the Bay of Biscay and off the Portuguese coast and to the northeast of the Azores. On this cruise the *Grand Turk* boarded thirty-six vessels, of which twenty-three were permitted to pass and thirteen were captured; of these prizes (Nos. 16 to 28 inclusive), eight were sent to U.S.A. ports, one was used as a cartel on which to load prisoners, and four were burned at sea. The following is a record (taken from the log of the privateer) of the vessels boarded and their disposition during the 103-day cruise from August 6 to November 17, 1814:

Date Boarded 1814	Position Lat. North	Position Long. West	Name of Vessel	Description	On Passage From	On Passage For	Cargo	Remarks
Aug. 8	42-49	62-39	PINK	British schooner	Point of capture	Liverpool, N. S.	Green fish (40 q.)	Burned
Aug. 9	43-33	60-34	BROTHERS	British brig	St. Johns, N. B.	Liverpool, Eng.	Lumber and staves	Burned
Aug. 12	42-43	58-11	WANDERER	British brig	Prize of INVINCIBLE	U. S. A.	Dry fish	Permitted to pass
Aug. 16	45- 4	46-51	CHARLOTTE	British brig	Antigua	Glasgow, Scotland	Rum, sugar, coffee, and molasses	Ordered to U. S. A., but recaptured by British
Aug. 18	46-20	41-45	THEREZA	French brig	St. Maloes	Grand Bank	Fishing vessel in ballast	Permitted to pass
Sept. 1	48-44	9- 4	ATLANTIC	British brig	Prize of CHASSEUR	U. S. A.	Tallow, hides, and Peruvian bark	Permitted to pass
Sept. 1	48-44	9- 4	DE FORZE MARIA	Dutch galliot	Lisbon	Rotterdam	Salt	Permitted to pass
Sept. 2	48- 8	9- 1	CHARLOTTE HELOISE	Bremen ship	Bremen	St. Bartholomew	Some linen; principally ballast	Permitted to pass
Sept. 3	48-40	8-40	OMNIBUS	Dutch sloop	Lisbon	Rotterdam	Salt	Permitted to pass
Sept. 3	48-40	8-40	DE VRIENDCHOP	Dutch galliot	Lisbon	Pappenburg	Salt	Permitted to pass
Sept. 4	41-21	8-27	NAYADE	Prussian brig	Lisbon	Hamburg	Varied cargo	Permitted to pass
Sept. 5	49- 3	7-26	NEPTUNE	French brig	Mediterranean ports	Havre	Sweet oil	Permitted to pass
Sept. 5	49- 3	7-26	JOHANNES	Swedish brig	Lisbon	Plymouth, Eng.	14,037 gallons of rum, 935 sacks of bread, etc., for British Army	Ordered to U. S. A.
Sept. 6	49-40	6-27	LE STANISLAS	French corvette	Marseilles	Havre	Sweet oil and soap	Permitted to pass
Sept. 8	48-43	11-25	SPECULATOR	British brig	Lanzarote	London	Barilla	Permitted to pass
Sept. 13	43- 3	10- 2	NIEU HOFFNUNG	Russian galliot	Lisbon	Hamburg	Salt and lemons	Permitted to pass
Sept. 14	43-18	9-58	SCIALLISVOY	Russian brig	Trieste	St. Petersburg	Oil, brimstone, and cream of tartar	Permitted to pass
Sept. 14	43-18	9-58	MELZIADE	Maltese brig	Malta	Falmouth, Eng.	Vilonia salts and gum tragacanthe	Put prisoners aboard and used as a cartel
Sept. 14	43-18	9-58	VICTORIA	Swedish brig	Alicante	Ferrol	Salt	Permitted to pass
Sept. 18	47- 0	5-29	DE AFRIKAAN	Dutch brig	Amsterdam	African coast	Gin and miscellaneous goods	Permitted to pass
Sept. 19	47- 8	5-32	BETSEY	British brig	Trieste	Hamburg	Currants, sweet oil, licorice, sulphur, tartar, almonds, soap, etc.	Ordered to U. S. A.
Sept. 27	42-26	12-21	L'ESCAUT	French ship	Marseilles	London	Dyestuffs and brimstone	Permitted to pass
Sept. 27	42-26	12-21	L'EUGENIE	French brig	Marseilles	Nantz	Soap and sweet oil	Permitted to pass
Sept. 28	42-27	11-20	BALTIC	British brig	Gallipoli	Bristol	Sweet oil (208 casks; 145 tons)	Ordered to U. S. A.
Sept. 30	41-16	9-43	SYREN	U.S.A. schooner	Baltimore	Cruising	Privateer	Permitted to pass
Oct. 1	41-30	9-23	AURORA	British brig	Lisbon	Cork	Salt; principally ballast	Permitted to pass
Oct. 4	about 40	about 11	LA SOPHIA	French schooner	Dunkirk	Martinico	Provisions	Permitted to pass
Oct. 14	about 39	about 14	ANADALUCIA	Spanish ship	Havana	Cadiz	Sugar, coffee, and indigo	Permitted to pass
Oct. 17	38-15	16-22	COSSACK	British brig	Alicante	St. Johns, Newfoundland	Raisins, brandy, wine, etc.	Ordered to U. S. A.
Oct. 17	38-33	16-24	THREE WILLIAMS	British brig	Newfoundland	Lisbon	Dry fish	Ordered to U. S. A.
Oct. 22	about 40	about 25	FLOR DE TEJO	Portuguese brig	Para, Brazil	Lisbon	Cocoa, coffee, hides, and cotton	Permitted to pass
Oct. 26	about 41-30	about 32	LARETO	Portuguese brig	Brazil	Oporto	Sugar, rice, coffee, tallow, etc.	Permitted to pass
Nov. 7	44-30	50-15	GEORGIANA	British schooner	Martinique	St. Johns, Newfoundland	Sugar and rum	Ordered to U. S. A.
Nov. 8	about 44	about 52	ROBERT	British brig	Prince Edward Island	London	Lumber	Burned
Nov. 14	42-29	63- 0	BIRD	British schooner	Newfoundland	Jamaica	Fish, hoops, and lumber	Ordered to U. S. A.
Nov. 15	43-20	64-46	COMMERCE	British schooner	Liverpool, N. S.	Barbados	Fish, fish oil, and lumber	Burned

The British brig *Charlotte,* captured August 16, had previously been taken by the American privateer brig *Mammoth* and, with a prize crew aboard, ordered to a United States port; shortly afterwards, the vessel was retaken by the British frigate *Canso,* which removed and imprisoned the American crew, substituted a British one, and ordered her to continue her voyage to Glasgow. Sailing eastward, the *Charlotte* was seized by the *Grand Turk* when approaching mid-Atlantic, the second British crew made prisoners, and a detachment of American sailors put aboard with orders to take the brig to a New England port. However, it appears that while on her way, she was captured in the North Atlantic for the fourth time during this one voyage and carried by a British frigate into Halifax.

When about twenty miles off the coast of Cornwall, the *Grand Turk* was enticed to attempt to take a powerfully armed disguised British sloop of war; broadsides were exchanged, and a raking fire from the American privateer caused much damage to the Britisher, which was later run hull down in four hours. The British brig *Cossack,* captured by the *Grand Turk* on October 17, arrived safely at Salem, but she cannot be credited to that privateer. On her way to the United States, the vessel was taken by H.M. 74-gun frigate *Bulwark* and ordered into Halifax. Before she reached the Nova Scotian port, however, she was seized by the privateer *Surprise,* which sent her into Salem. We read: "When Captain Green returned from his cruise, he was delighted to find the *Cossack* safely anchored in Salem Harbor; but his joy was turned to chagrin when he learned that his former prize was now the property of a rival privateer."

The *Grand Turk* terminated her fourth privateering cruise against the enemy when she anchored in the harbor of Portsmouth, N. H., on November 17, 1814 (two days after making her last capture). Upon arrival in the United States, she had 50 prisoners aboard and only 44 of her original crew of 120 men, the remainder having been placed aboard eight prizes. Documents in the Federal Court in Boston show that the British schooner *Georgiana,* after condemnation, was sold for $16,089 and the schooner *Bird* for $3,784.

The fifth and last privateering cruise of the *Grand Turk* commenced on January 1, 1815. The vessel, under Captain Green, sailed from Salem and, because of the mid-winter, shaped her course for southern waters and the coast of Brazil. On February 19, off Pernambuco, a British brig bound from India to Portsmouth, England, but masquerading as a Spanish vessel named the *Joven Francisco,* was captured. The cargo consisted of tea, coffee, rice, dyewoods, and rattans (all products of India). A prize crew was put aboard, and she was ordered to the United States, but unfortunately did not arrive, as she was recaptured by the British and taken into Barbados. On February 21, the British ship *Active Jane* of Liverpool was seized, but her cargo had been discharged at Rio de Janeiro, and she was proceeding up the coast to load at Maranham for home. The vessel was searched for articles of value, and fourteen kegs marked "Nails 1½" were transferred with other things to the *Grand Turk;* this proved to be a lucky find, as each keg of "nails" contained a thousand milreis in coins, making the haul of "nail" kegs worth about $17,000 at the prevailing rate of exchange. The British vessel, after she was dismantled and her crew removed as prisoners, was burned.

During the period March 10-13 inclusive, the *Grand Turk* was pursued by two fast and powerful British frigates. The fluky winds favored the Britishers, and in the frequent intervals of dead calms the privateer used her sweeps and the frigates their boats for towing. At times, the heavily armed men-of-war got within gunshot of the *Grand Turk,* and great ingenuity as well as seamanship on the part of Captain Green was necessary to avoid capture. Given any kind of a breeze, the American vessel proved that she was faster and handier than her opponents, but the chase of some four days, mostly in calms, was very similar to that of the U. S. frigate *Constitution* when she eluded a powerful British squadron off the New Jersey coast by the aid of small-boat towing and kedging. On Monday, March 13, during the pursuit of the *Grand Turk* by the two British frigates, the privateer took down her fore-topmast and replaced it. In the evening she actually boarded a Portuguese brig in sight of the

British warships "and, being greatly encumbered with prisoners, concluded to release them and accordingly paroled five British prisoners and discharged ten Spaniards and put them on board the brig after giving a necessary supply of provisions."

The British frigates continued to trail the *Grand Turk* for some time, and they were joined by a brig of war. These three vessels of the Royal Navy made contact with the American privateer on Sunday, March 19, at which time the *"Turk"* was removing goods from the British brig *Acorn* (bound from Liverpool to Rio de Janeiro), which she had captured the day before. The *Acorn,* mounting 14 guns, was loaded with a valuable cargo and put up a fight of about an hour during the chase and of five minutes when the broadside guns could be brought to bear. The British vessel, although unusually well armed, had a crew of only sixteen men, which was insufficient to work the ship and her guns. The cargo of the *Acorn* was described as "coal, crockery-ware, porter and dry goods," but listed in the ship's manifest were "many cases of cotton stuffs, calicoes, woolens, silk hose, fine hats, dressed leather, pantaloon hosiery, and such goods." It was these valuable items that Captain Green was transferring to the hold of the *Grand Turk* for greater safety when the British naval squadron came in sight and caused him to desist. As the *Acorn* had proved herself to be a good sailer, a prize crew of twelve was placed aboard, and she was ordered to a United States port, while the privateer sought to divert the attention of the British war vessels. Captain Green wrote in his log of March 19:

> As our prize was in a good plight for sailing, we have great reason to think she escaped. One of the frigates pursued us for ¾ of an hour, but finding that she had her old antagonist gave up the pursuit. Having on board one hundred and sixty odd bales, boxes, cases and trunks of goods, which I conceive is very valuable, and the brig's copper and rigging being very much out of repair, and the water scant, concluded to return home with all possible dispatch. As another inducement I have information of a treaty of peace being signed at Ghent between the United States and Great Britain, and only remains to be ratified by the former.

Ten days later (March 29), the *Grand Turk* boarded a Portuguese ship from Africa bound to Maranham with 474 slaves on board, and Captain Green wrote in his log, "Paroled and put on board eleven British prisoners." On Saturday, April 15, he wrote: "Boarded the American schooner *Commit* [*Comet*] of and from Alexandria for Barbadoes with a cargo of flour. They gave us the joyful tidings of peace between America and England, which produced the greatest rejoicing throughout the ship's company." Capt. Nathan Green's log dated Saturday, April 29 [28], 1815, concludes with the words: "At 9:30 [a.m.] came to anchor in Salem harbor, cleared decks, and saluted the town. This ends the cruise of 118 days." It is said that "upon his return Captain Green found the *Acorn* already safely anchored in Salem Harbor," and records show that the sale of that vessel and her cargo netted $56,000. The "nail" kegs from the *Active Jane* brought $17,000 more, and we read: "There was a total of $73,000 to be distributed, one-half among the owners, and the other half, less the running expenses, pro-

Cruise No.	Captain	Departure		Arrival	
		Port	Date	Port	Date
1	Breed	Salem, Mass.	Feb. 16, 1813	Portland, Maine	May 28, 1813
2	Breed	Salem, Mass.	Oct. 19, 1813	Salem, Mass.	Jan. 20, 1814
3	Breed	Salem, Mass.	Feb. 17, 1814	Portsmouth, N. H.	June 5, 1814
4	Green	Salem, Mass.	Aug. 6, 1814	Portsmouth, N. H.	Nov. 17, 1814
5	Green	Salem, Mass.	Jan. 1, 1815	Salem, Mass.	Apr. 28, 1815
Total five cruises	Breed-3 Green-2	Salem, Mass.	Feb. 16, 1813	Salem, Mass.	Apr. 28, 1815

portionally among the one hundred officers and men." From the autobiography of Capt. Nathaniel Griffin, of Salem, we learn that Griffin was a seaman on this cruise of the *Grand Turk* and that his share of the prize money amounted to $214. With about 100 men aboard all told, the total number of shares divided among the officers and crew would have been about 160, making about $34,240 net paid to the men; the captain received probably 10 shares, or $2,140, for somewhat less than four months' services at sea. Griffin had gambled with a Salem speculator before the voyage commenced and sold one-half of his share for $50, so the speculator received a profit of $57 and the return of the principal of his adventurous investment and Griffin $157 instead of $214 for his four months' work. However, the young sailor was much pleased with his remuneration, and he later wrote, "This fitted me out for a voyage to India."

We read from the writings of a contemporary that "the privateer brig *Grand Turk* of Salem, in several voyages, suffered many battles but always emerged either safe or victorious while capturing well over thirty enemy vessels and outsailing every ship she sighted on the high seas." The log of the brig showed that during one of her voyages, while on the lookout for enemy vessels, the *Grand Turk* covered in five successive days the following distances per day in nautical miles: 203, 209, 219, 213, and 216 miles—a total of 1,060 miles and an average of 212 miles per day, "which gave an average speed of 8⅞ knots per hour while cruising [not racing] during this five-day period."

With the war over, the owners of the *Grand Turk* decided to dissolve their partnership, which had been formed for the sole purpose of acquiring and operating a privateer, and dispose of their vessel. The May 19, 1815, issue of the Salem GAZETTE published the following advertisement:

BRIG GRAND TURK

On Tuesday the 30th inst. at 11 o'clock a.m. will be sold at public auction (to close the concern) at India Wharf in Salem

The elegant, fast sailing, copper bottom brig *Grand Turk,* 310 tons, 2-½ years old, built by an approved workman of excellent materials, and completely found for an India voyage. She has performed five cruises during the late war, and is considered one of the best vessels of her class in the U. States.

Immediately after the above, will be sold the armament of the *Grand Turk,* consisting of 15 long 9-pound cannon, with apparatus complete—37 muskets—20 pair pistols—50 cutlasses—30 boarding pikes—1600 pounds of powder—several sails, partly worn—together with a number of small articles. Inventory may be seen by applying to Samuel Cook or William Fettyplace, Salem, or to P. P. F. Degrand, Esq. of Boston.

T. Deland, Auct.

Salem May 17

The editors of the Boston *Patriot, Chronicle, Palladium* and *Gazette* are requested to copy this advertisement.

The sale was held at the appointed time, and the *Grand Turk* was bid in for $8,000 (about $26 per ton) by William Gray, of Boston, the leading and probably the keenest and

Length of Cruise Days	Voyage to	Prizes Taken				
		Ships	Brigs	Schooners	Sloops	Total
101 (reported 100)	South Atlantic, off Brazilian coast	2	0	1	0	3
93 (reported 94)	North Atlantic, off Irish coast	2	4	1	0	7
108	North Atlantic, off Portuguese coast	0	4	0	1	5
103	North Atlantic, Bay of Biscay	0	9	4	0	13
117 (reported 118)	South Atlantic, off Brazilian coast	2	1	0	0	3
Total—2 years 2 months 12 days; at sea, 522 days	3 North Atlantic; 2 South Atlantic	6	18	6	1	31

most able American shipowner of his day. Gray had spent the first part of his life in Salem, was the leader in subscribing funds for the building and presentation to the U. S. Government of the frigate *Essex,* and at one time owned over a quarter of all the vessels registered at Salem. In 1809, Gray had changed his residence and business headquarters to Boston. On June 5, 1815, the *Grand Turk* was at Boston, and she was registered at the customhouse in the name of William Gray as sole owner, with Capt. William Austin as master. On June 29, the brig cleared Boston for Marseilles with a general cargo aboard, and she brought a cargo from France to Boston, reaching that port November 17, 1815. Under the command of Captain Boden, the *Grand Turk* sailed from Boston December 14, 1815, with a cargo for Cuba, and but little is known of her voyages thereafter, as William Gray's records were later destroyed by fire. On March 26, 1816, the vessel's register at the Boston customhouse was canceled, with the endorsement, "Sold to a Spaniard in Havanna 27 January 1816." As historian Robert E. Peabody says: "Thus the famous privateer brig *Grand Turk* passes into oblivion. She may have sailed the seas for many years after under a Spanish name, winning new fortunes for some Havana [or Spanish] merchant; but as the *Grand Turk* she ceased to exist, and her subsequent career remains a mystery."

A synopsis of the *Grand Turk's* five cruises as a privateer is presented herewith and substantiates the statement of well over a century ago that the brig was "fast, handy, well commanded and manned" and "unquestionably one of the most successful private armed vessels of the War of 1812"; a later historian added, "It is no doubt true that her [the *Grand Turk's*] depredations on British commerce, in conjunction with the activities of other American privateers, did much to hasten the cessation of hostilities."

A Trio of Large Mid-War Baltimore Privateering Schooners— MAMMOTH, SABINE, *and* SURPRISE

As the War of 1812 with Britain developed, the need was increasingly felt in the United States for privateers of size and gun power carrying plenty of men to man prizes. Speed and handiness were deemed essential, and vessels were desired of relatively light draft as compared with British frigates and heavy sloops of war and of a size that could be moved in calms by sweeps. Vessels of from 300 to 400 tons, though deemed quite large for their day, were favored by many experienced privateersmen, and the demand for big, strong craft, stout enough to stand the strain of heavy guns and carry large crews (while being modeled and sparred for high speed and handiness), caused new vessels of steadily increasing size to be built for privateering purposes. The British blockade of the American coast caused small privateers that had a limited cruising radius and were restricted in operation to the Western Ocean to be unprofitable, and both long voyages and growing competition among privateers suggested bigger and more powerful vessels, capable of good speed in bad weather (wind and seas) and of accommodating big crews and a large number of prisoners. In 1813, Baltimore shipyards launched three privateering schooners, the *Mammoth, Sabine,* and *Surprise,* which were among the largest of their kind afloat. A record of the performance of these vessels at sea in their depredations on enemy commerce is of special interest, as the trio "had interlocking owners and a series of masters and lieutenants who passed from deck to deck in a dizzy merry-go-round of command." A comparison of the size and privateering record of these three Baltimore 1813-built schooners is set forth herewith:

Name of Schooner	Tonnage	Dimensions in Feet and Inches: Length	Beam	Depth	Captain	Number of Prizes	Disposition of Prizes: Sent in	Retaken	Wrecked or Foundered	Destroyed, Burned, or Sunk	Given up	Cartel
MAMMOTH (privateer)	376	112	28-3	13-4	Samuel Franklin	24	1	5	—	9	4	5
					Jonathan Rowland	—	—	—	—	—	—	—
					Total	24	1	5	—	9	4	5
SABINE (letter of marque; later as privateer)	337	109-6	27-4	12-7	James Barnes	2	1	—	—	1	—	—
					Jonathan Rowland	9	4	4	—	—	1	—
					Total	11	5	4	—	1	1	—
SURPRISE (privateer)	301	110	25-7	11-10	Clement Cathell	12	3	3	—	3	1	2
					James Barnes	21	4	3	1	10	—	3
					Samuel Barstow	10	2	1	—	4	1	2
					Total	43	9	7	1	17	2	7

Other records, while agreeing generally with the number of prizes taken by each of these Baltimore privateers (or letters of marque), divide up the number credited to the *Sabine* differently, stating that Captain Barnes took six prizes with that vessel and Captain Rowland, five; that of the eleven vessels, seven were "sent in," one burned, and one given up, and the end of the other two is not stated.

From the standpoint of profit for the private owners and remuneration to the officers and crew for services, the *Mammoth* was an unfortunate and unsuccessful privateer; yet she captured twenty-four enemy vessels, of which five were retaken, five used as cartels for prisoners, four "given up" as of no value, and nine destroyed. It is said: "Although her prize list included the surprising total of twenty-four vessels, only one reached a port of the United States. On her last cruise, indeed, she made no captures at all." Other Baltimore records, while agreeing with the figures of nine prizes destroyed, five used as cartels, and four given up, state that six vessels were "sent in," and these are set forth as the *Alexander* (brig), *Camelion* (brig), *Charlotte* (brig), *Mary* (bark), *Mentor* (ship-transport), and *Uniza* (brig).

The *Mammoth,* "the largest privateer out of Baltimore," sailed from the Chesapeake on March 22, 1814, with a cargo for Havana and, after disposing of this, sailed from Havana on April 25 on her first cruise as a privateer. She is reported to have carried 100 men and been armed with 10 9-pounders. After a month spent in Caribbean waters, the *Mammoth* headed north, burned a small British schooner off Bermuda, and about the middle of May captured the brig *Camelion* of 160 tons, mounting 3 guns (formerly the letter-of-marque *Leopard* of Portland, Maine), from the West Indies bound for New Brunswick laden with rum and molasses. She was sent into Portsmouth, N. H., and evidently arrived there, for the *Mammoth* herself was in that port from May 27 to June 23 and reported her arrival under Prizemaster Page. Upon leaving the New Hampshire port, the *Mammoth* "played havoc" with the British fishing fleet on the Banks, fought an indecisive action with the heavily armed transport *Sinclair,* and hauled off after the nature of the enemy was revealed, as the privateersmen were after "something that was more valuable to them than mere men." On October 10, Captain Franklin engaged another British transport, the *Champion* (Captain Kirby), which struck her colors, following which the cargo of the British vessel, during the period of forty-one hours that the *Mammoth* lay alongside of her, was transferred to the American privateer, and the Britisher, with empty holds but with a lot of men aboard that Franklin could not handle as prisoners, was given back to her master. Off the Irish coast, the *Mammoth* seized and pillaged the British commissary transport *Mentor* and returned to Portland, Maine, on November 15, 1814, after a cruise in the North Atlantic of 145 days. Cranwell and Crane, in MEN OF MARQUE, write: "Although he [Franklin] had captured a total of twenty-two vessels and sent in six, none of the latter had arrived. Aside from damage to English commerce, the

Mammoth had only the prize goods in her hold to show for her cruise." Maclay, in A HISTORY OF AMERICAN PRIVATEERS, says that in a "cruise of only seven weeks the privateer [*Mammoth*] took sixteen English merchantmen. For seventeen days she hovered off Cape Clear, where most of her captures were made." She "took the brig *Ceres* of Glasgow, laden with brandy, and made a cartel of her." We also read: "In all the *Mammoth* took twenty-one vessels and released on parole three hundred prisoners. She arrived at Portsmouth with a full cargo. In her last cruise [under Captain Rowland], she was not so fortunate, returning to New York in 1815 after a long and fruitless search for British merchantmen."

Upon the return of the *Mammoth* to port in November 1814, the owners of the Baltimore privateer were displeased with the result of Captain Franklin's management of and the return on their investment, so they relieved him of his command and placed Captain Rowland (late of the *Sabine*) in charge. Rowland took the *Mammoth* out of Portland, Maine, on January 6, 1815 (thirteen days after the peace treaty had been signed at Ghent), and during a cruise to Madeira was even less fortunate and productive than his predecessor. On a cruise of 99 days, he evidently took no prizes and had many narrow escapes from being captured by British ships of war. On February 3, off Madeira, the *Mammoth* had to flee from three British frigates, which pursued her for three days. On February 6, two other frigates were sighted ahead, and to escape from five powerful, fast and large British warships, the American privateer threw overboard four of her cannon, spare spars, stores, and other heavy portable weights and in a calm that followed had to beat off an enemy attack made with small boats. Subsequently, Captain Rowland experienced the efficacy of the British merchant convoy system, which had developed in effectiveness as the war continued. The *Mammoth* fell in with a convoy of about 150 merchant sail so well protected by British frigates and brig- or schooner-rigged sloops of war that her numerous efforts to cut off some of the merchantmen proved futile. Later, Rowland "dogged" another British convoy for over a month all the way across the Atlantic and was chased away by protecting warships whenever he endeavored to take a prize. On January 28, 1815, when twenty-two days out, Rowland had been informed by the captain of a neutral vessel which he stopped and examined that a peace treaty had been signed, but he did not believe it and continued on his unproductive cruise against the enemy. On April 2! while still hanging onto the flank of a British convoy and hoping to pick up one or two stragglers, the *Mammoth* sighted the American schooner *Union* bound to Martinique from Portsmouth, N. H., and heard that the war was over; this time a weary and despondent Rowland turned his vessel for New York, where he arrived with nothing to show for his attempts of some three and a third months to harass the enemy, although he and his schooner had won honors in outsailing and outwitting powerful vessels and squadrons of the Royal Navy. The *Mammoth* was sold at auction, and her new owners converted her and rigged her as a brig for the merchant service.

The *Sabine's* first two voyages were as a letter of marque, with Capt. James Barnes in command. She carried forty-four men and was armed with only 4 12-pounder carronades and 2 long 12-pounders. On her maiden voyage, she sailed from the Chesapeake early in February 1813 with a cargo for Bordeaux and captured (and burned) a small British brig off the Portuguese coast. Returning to the United States with a French cargo, the *Sabine* was chased five times by British warships, the last pursuit being by H.B.M. brig *Nymph* off Cape Ann. Although Barnes was heading for Boston, he thought it wise to put into Gloucester, where he dropped anchor, but later proceeded to his destination and arrived September 9, 1813. The round transatlantic voyage, port to port, because of war conditions, had occupied seven months for a fast sailing vessel. The *Sabine* then made another mercantile voyage, taking a cargo from Boston to the West Indies and returning to New York on January 21, 1814. The schooner had a hard time of it in the North Atlantic homeward bound; she lost her bowsprit and head rig in a gale and then ran aground when making New York

Harbor, being forced to jettison her guns and other heavy portable weights to get off the sand bar. Her Baltimore owners were dissatisfied with the earning power of the *Sabine* as a letter of marque and thereupon decided to make a privateer out of her. They made unsuccessful appeals to the Navy Department for some suitable guns to arm her, and despite the government's "marked lack of enthusiasm" and co-operative assistance, the owners of the *Sabine* got hold of 10 guns from somewhere. On April 4, 1814, Capt. Jonathan Rowland, as master, obtained a new commission in New York for the Baltimore-owned privateer and toward the end of the month, with a crew of 100 men aboard, evaded the British blockading squadron off Sandy Hook and put to sea to harass enemy commerce. Rowland made an uneventful crossing of the Atlantic, but in June captured the large British East Indiaman *Cortes,* put a prize crew aboard, and sent her to the United States; unfortunately, this valuable ship was retaken by the enemy. Shortly afterwards, the *Sabine* fell in with and fought another big East Indiaman, the 500-ton *Countess of Harcourt,* mounting 6 large guns and carrying a crew of 90 men. After an hour's bombardment, the vessels pulled apart to repair damages, but the British merchantman could not patch up her sails and rigging enough to escape, and the American privateer hung to her wake until she was in physical shape to move in to "the kill," following which the Britisher struck her colors. Later, the *Countess of Harcourt,* with a prize crew aboard, reached St. Mary's, Ga., where she was condemned and the proceeds of her sale credited to the account of the *Sabine.*

During July, the American privateer captured three more British vessels, the *Hero, Thames,* and *Albion,* but it was reported that this trio was retaken on its way to the United States. Proceeding to the West Indies, Rowland captured the brig *Mary and Matilda,* from which he removed some of her cargo of dry goods. He placed most of his prisoners aboard the prize and permitted her to proceed. (Later, the Baltimore privateer *Globe* seized this same vessel, extracted more of her cargo, and "gave her up.") In the Caribbean, the *Sabine* captured the British brig *Firefly,* which was sent safely into a southern U.S.A. port with a cargo valued at $100,000. The brig *Avon* and the cutter *Flying Fish* were also taken and sent in with prize crews aboard. In mid-September, the *Sabine,* making for Wilmington, ran aground and was wrecked. The crew got off safely and, we are told, "succeeded in salvaging most of her cargo," but the vessel herself became a total loss. Cranwell and Crane write: "The *Sabine's* end was ignominious; but she was a financial success, as two of her prizes alone [*Countess of Harcourt* and *Firefly*] yielded handsome profits to her owners and crew." The *Sabine* is credited with taking eleven prizes, nine of which were captured during her one privateering cruise of 143 days under the command of Capt. Jonathan Rowland.

The last of the big three of Baltimore privateers (of the so-called "1813 crop") to sail and the smallest of the trio was the 301-ton *Surprise.* It has been said that this vessel "lived up to her name," for she made in all "four cruises and captured a total of forty-three prizes, the most valuable of which got safely into the United States." Capt. Clement Cathell, who had been first lieutenant of the Baltimore privateer *Comet* under Capt. Thomas Boyle, was given command of the *Surprise,* and he sailed from the Chesapeake on March 21, 1814, with orders to cruise "in the English and Irish channels and off the Western Isles." The armament of the *Surprise* was stated as "ten medium 18-pounders" and her complement as 120 men (but other records say that whereas on later cruises she had 120 and 130 men aboard, on her maiden voyage she sailed with 110 men). From the first, the *Surprise* proved that she was a very fast and handy vessel, and on her first cruise of 113 days at sea she was called upon to outsail sixteen different reputedly fast and more powerful British men-of-war. When three days out, the Baltimore privateer took the British ship *Hebe,* carrying lumber from Halifax to Bermuda, and sent her under a prize crew into a southern port. On April 24, off the Azores, the *Surprise* had a hard fight with the British brig *Kutusoff,* which mounted 12 guns and had a fighting crew of 30 men; but the Britisher surrendered when the Americans were preparing to board her after a long chase and some close firing, which was so hot that the Americans withdrew for a while to bombard at longer range. The *Kutusoff,* which was estimated to be worth $50,000, was sent into Frankfort, Maine, under a prize crew, where she was condemned and sold to the account of her captors.

After taking the *Kutusoff,* the *Surprise* entered the English Channel and cruised for some time in the Irish Channel. It is said that she took ten prizes in these waters. Four were ordered to the United States, but evidently only one of them (the brig *Fortitude*) got through safely; three were destroyed, one of them being the brig *Fidelity,* which was burned "as a salute" off Baltimore, Ireland. The *Surprise* was driven away from one of her victims (when she was transferring cargo from the Britisher to her own holds) by H.B.M.S. *Beresford.* Two captured vessels were used as cartels to free the privateer of prisoners; one of these was the schooner *Fox* and the other the brig *Eagle.* Some Baltimore records show that five instead of three of the twelve captures made by the *Surprise* on her first cruise reached U.S.A. ports, and these are stated as the ship *Hebe* (a southern port), the brig *Kutusoff* (Frankfort, Maine), the brig *Fortitude* (Union River, Mass.), the ship *Argo* (Portland, Maine), and the schooner *Lively* (Salem, Mass.); the captured vessel "given up" is identified as the brig *James & David,* and the brigs *Margaret* and *Vivid* seized as prizes and sent in are recorded as "retaken." Writing of this first cruise of the *Surprise,* which ended at Newport, R.I., on July 12, 1814, with the vessel's hold "full of valuables," Maclay says that the privateer "had been chased sixteen times and had taken twelve or thirteen British merchantmen."

Captain Cathell left the Baltimore privateer after his one successful voyage in her, and he was replaced by Capt. James Barnes, who took the *Surprise* out of Newport on her second cruise the last of August 1814, with a crew of 130 men aboard. This was a very short voyage against the enemy and apparently lasted for only 30 days, during which the privateer cruised off Halifax and captured twenty-one vessels. However, most of them were fishermen, and ten of her prizes were burned or scuttled. On September 3, the *Surprise* took the British ship *Caledonia* (Captain McFarlane) bound for Quebec from Cork with a cargo of dry goods and rum. Barnes got his vessel alongside, took from the prize the more valuable articles and also the captain and about half the crew, and secured the balance of the crew below decks. Putting a prizemaster, a mate, and several men aboard, Barnes ordered the *Caledonia* to proceed to a U.S. port. Twenty-five days later, as the *Surprise* was entering Massachusetts Bay, she sighted a ship that had been badly battered by gales, and Barnes was compelled to take his erstwhile prize for the second time. The prizemaster told a story of gales that were beyond the physical strength of the prize crew to contend with, and he had liberated the prisoners from below deck so that they could assist in saving the ship and their own lives. The masts were cut away, and later, as the weather moderated, a jury rig was devised. The British crew, watching its chance, got hold of firearms, took possession of the ship, and forced the Americans below deck as prisoners. Captain Barnes removed all the British from the *Caledonia* with, it is said, "$50,000 worth of articles" and sent the prize into Boston, where she was reported sold for $200,000. Upon his arrival at Salem, Barnes reported capturing a total of "3,700 tons of shipping and 197 men, of whom 37 were brought in as prisoners." These 37 prisoners brought $3,700 to the privateer in government bounties over and above the value of the prize goods brought in and of the vessels and their cargoes that arrived at a U.S. port and were condemned and sold. After this short and successful cruise, Captain Barnes left the *Surprise* at Salem, and his first lieutenant, Samuel Barstow, took over the command.

After a few weeks spent in refitting, the *Surprise* sailed from Salem on November 8, 1814, with a crew of 130 men aboard. She cruised off Nova Scotia and Newfoundland for a while, making several captures, and on December 24, 1814, put into Brest, where she received a salute of 11 guns from the French admiral. After reprovisioning, the *Surprise* sailed on January 9, 1815 (sixteen days after the peace treaty had been signed at Ghent). Five days later, she had a hot engagement with a British man-of-war, but outsailed her adversary after inflicting some damage on the more powerful enemy vessel. On January 28, after a sharp fight with the well-armed British ship *Star* (Captain Gilpin) bound from Batavia to London, the Britisher struck his colors. This vessel, which mounted 8 12-pounder carronades and carried a crew of 26 men, had a cargo aboard estimated to be worth $300,000; it consisted of 1,180 bags of sugar, 5,028 bags of coffee, 297 bags of sago, 83 cases of cinnamon, 45 kegs of camphor, 22 bales of nankeens, 43 cases of tortoise shell, and 22,400 lbs. of sapanwood. Captain Barstow lay alongside his prize for a full day, taking out the most valuable articles, and then placed two prizemasters and 18 men aboard the *Star* and ordered them to sail home in company with him. On February 25, when about a hundred miles from New York, the vessels were separated in a gale; but on February 27 the *Surprise* arrived in port, and the day afterwards her prize dropped anchor, both vessels reaching New York about two weeks after news of the peace had been received. Captain Barstow sailed with the *Surprise* from New York for Baltimore on April 3, 1815, with about 150 persons, including several passengers, aboard. On this short run, the schooner was wrecked on the bar off Manasquan Beach, with a loss of fifteen lives—all members of the crew.

Of the seventy-eight British prizes taken by the trio of Baltimore privateers (*Mammoth, Sabine,* and *Surprise*), fourteen were ships, one was a bark, forty were brigs, twenty were schooners, and three were "single-stickers," or sloop-rigged. The combined tonnage of the three schooners was 1,014 tons, and together they mounted 30 guns and carried 330 men.

The Privateer KEMP *Captures a Fleet of Armed Merchantmen from under the Nose of a Protecting British Frigate*

The privateer schooner *Kemp* was built at Baltimore as a merchantman in 1810 and was presumably named after Thomas Kemp, the shipbuilder, who later (in the winter of 1813-1814) built and was part owner of the famous privateer *Chasseur,* known as "the pride of Baltimore." The *Kemp* was of 228 tons, with a length of 100 ft., beam 25 ft. 2 in., and depth 10 ft. 6 in. Prior to the war, the *Kemp* was engaged in the carrying trade with France, and she arrived in Baltimore from that country on July 11, 1812, with a cargo of brandy. The schooner's owners promptly procured letters of marque for their vessel and armed her with 6 9-pounder carronades. Under the command of Capt. William Burton and with a crew of thirty-six men, she cleared for Bordeaux with a cargo on July 20. The outbound passage was uneventful; but, returning, the *Kemp* ran into a terrific mid-winter gale and had a seaman washed overboard. All her guns were jettisoned to keep the schooner afloat. With the British blockading the Chesapeake, Burton ran through the Virginia Capes on a dark night early in February 1813 and passed close enough to British war vessels to hear voices aboard them, but fortunately escaped detection and reached Annapolis on February 9 after a round voyage, port to port, of 6 months and 20 days.

In March 1813, the *Kemp* was sold at auction in Baltimore and bid in by John A. Morton, who sent her to sea again as a letter of marque mounting 2 6-pounder and 4 9-pounder carronades under the command of Capt. Wilson Jacobs, with a crew of forty-one men. Whereas the *Kemp* was armed, manned, and ready to sail in early April, clearing the Chesapeake was a tough proposition in 1813 because of the British blockading squadron, and Jacobs did not get to sea until he was able to elude the British during a heavy snowstorm on the night of December 20, having been blockaded in the Chesapeake for about eight and a half months. The *Kemp* was chased by a British brig of war and later by a schooner-rigged heavily armed cruiser, but she escaped by outsailing both. She put into Charleston on December 30 and remained there until January 26, 1814, when, with an augmented crew, she cleared port for a cruise against enemy commerce in the Caribbean. This cruise was evidently not successful, for the only prize taken seems to have been the British schooner *Louisa,* with a cargo of "oil and fish," which was sent into Elizabeth City.

The *Kemp* returned to Wilmington, where she was loaded for France, and Captain Jacobs was ordered to make delivery of the goods at Nantes and "pick up a cargo from the enemy on the way back." The *Kemp* is credited with taking two prizes on the eastbound passage, which were ordered to French ports. On June 18, 1814, the American schooner sailed out of the Loire River in ballast and, when only two days out, captured the British brig *Betsy & Mary.* Captain Jacobs removed her crew and 105 bales of wool and set the vessel afire. A few days later, the ship *Calypso* was seized. She flew Swedish colors, but carried British papers. Cargo deemed of value was transferred from the *Calypso* to the *Kemp,* following which the prisoners from the *Betsy & Mary* were placed aboard the *Calypso* and that vessel was permitted to proceed. Shortly thereafter, the *Kemp* fell in with and captured another British vessel sailing under Swedish colors that seemingly had recently changed registry to avoid capture by belligerents. The second prize of this type was the brig *Caledonia,* which was undoubtedly British from keel to truck and from master to cabin boy. The cargo was also British. Captain Jacobs found two officers of the British Army aboard the brig, one of whom, Paymaster Dalhunty of the 45th Regiment, was carrying $3,000 of "the king's funds" in specie. This money was confiscated and 30 bales of dry goods removed from the brig's hold, following which the *Caledonia* was turned back to her British captain. The Americans accepted the soldiers' parole not to engage in hostilities against the United States until regularly exchanged. Off Gibraltar, the *Kemp* seized the British brig *New Frederick,* bound to Hull from Smyrna, but let her go unmolested "out of humanity to an Italian lady and her family who were passengers." No further enemy merchantmen were sighted, and after some unproductive cruising off the straits, Captain Jacobs sailed west and brought his schooner into Wilmington on August 2, 1814. Under Jacobs, the *Kemp* is credited with taking five prizes—one ship and four brigs; of these five captures, three were pillaged and freed, one was burned after her cargo and objects of value were removed, and one was sent into a U.S.A. port.

Capt. Joseph Almeda, one of the most able and resourceful of Baltimore privateersmen, was now given command of the *Kemp,* which, incidentally, had again changed owners. Almeda was an uneducated man, but he knew how to sail and fight a ship. It has been said, "He taught British seagoing men that he was a tough opponent, regardless of the odds against him." Almeda enjoyed privateering so much and had such a degree of "natural pirate" in him that, when the War of 1812 was over, he continued in the trade which suited him so well. In the revolt of the South American provinces against their Spanish rulers, he was known as the brave and notorious Don José Almieda. As Capt. Joseph Almeda of Baltimore, this skipper made four privateering cruises, two of which were in the schooner *Caroline* of 129 tons (10 guns; seventy-two men). During these cruises, he is credited with taking twenty-four prizes, of which seven reached a U.S.A. port. The other two were in the *Kemp,* and with this vessel Almeda made what was probably the shortest and most spectacular successful privateering cruise of the war or even of naval history. Cranwell and Crane have said: "With the exception of some of Boyle's achievements and Dooly's successful one-gun attack on a disorganized convoy, this fight of Almeda's was probably the boldest single stroke delivered by a Baltimore privateersman against his country's enemy."

When Captain Almeda took command of the *Kemp,* he refitted the vessel and changed her trim so that, it is said, she drew 12 ft. 4 in. aft and only 5 ft. 3 in. forward. This gave her a drag of 7 ft. 1 in., which was tremendous for any vessel, particularly for one only 100 ft. long. The 6 guns were changed; her original carronades were replaced by 4 long 9-pounders and the 2 old long sixes by "two double-fortified guns of the same calibre." On November 27, 1814, the *Kemp* sailed with a crew of 135 men aboard and, soon after she got to sea, was struck by a heavy gale, which sprung the main yard. It was not until dawn of December 1 that the storm abated and the fished yard was hoisted from the deck, where it had been repaired by the ship's carpenter. Before noon, nine sail were visible, and the *Kemp* made chase. The fleet consisted of two ships, three brigs, and three schooners protected by a British frigate, which tacked to meet the American privateer while the convoy stood to the east. Almeda hauled the *Kemp* on the wind as the frigate approached him and beat to windward in short tacks, drawing the big square-rigger after him and artfully decoying the powerful king's ship away from her convoy. During the dark of the night, Almeda "dodged" the British warship and "made after the fleet, judging how they steered."

At daylight (December 2), the eight merchantmen were sighted, but the frigate was apparently still searching for the privateer. One of the schooners, somewhat separated from the others and closer to the *Kemp,* was taken without resistance and promptly released, as she was a Spanish vessel and, therefore, a neutral. The other seven vessels—all British—grouped themselves for action and commenced firing on the *Kemp.* The shots remained unanswered until Almeda had taken a position in the midst of the group of vessels, when the American opened both broadsides while the marines kept up a continuous fusillade. The heavy fire of the privateersmen, "who could shoot where they liked without endangering anyone but Englishmen," threw the enemy into confusion, and the British were unable to bring any concentration of fire to bear on the *Kemp.* Almeda kept his schooner as near as he could in the midst of the enemy vessels and at close quarters. He ran alongside a brig, and ten American seamen jumped aboard her and quickly gained possession. Shortly afterwards, one of the ships was boarded by sailors leaping from the *Kemp's* bowsprit to the Britisher's deck. Almeda steered for a schooner and was about "to lay her on board" when the British captain "cried for quarter" and began lowering his colors. Later, this captain ignored Almeda's order to "lay by" and when clear of the *Kemp,* in the smoke of battle, rehoisted his colors and commenced firing on the American. Gradually working away from the scene of battle, the schooner ultimately escaped after she had once surrendered to the *Kemp.*

The next Britisher that Almeda tackled was the largest of three brigs in the fleet, and she put up a stiff fight for fifteen minutes assisted by a ship and a schooner; finally, the *Kemp* was "laid alongside," and twenty Americans carried the brig by boarding. The remaining ship surrendered when the American privateer got within pistol shot of her, and the colors immediately thereafter were struck on the nearby schooner. In the melee, one of the brigs had sailed away; thus six of the seven British merchantmen had surrendered to the *Kemp,* although one of them, with a dishonorable and treacherous captain in command, after striking her colors, turned her guns on her captors, from whom she had begged for mercy, and then fled from the scene. Only one of the seven British merchantmen, a brig, got away with honor—if escaping by crowding sail and fleeing in the smoke-laden air and the dusk of evening and by leaving her companions in the hands of the enemy is deemed an honorable getaway.

On the morning of December 3, the convoy of five British merchantmen, each commanded by an American officer and manned by American seamen, was re-formed, rigging and damage of importance affecting seaworthiness were repaired, and the fleet stood for the Carolinas protected now by the guns of the American privateer. The captured vessels setting sail for a United States port were:

Name of Vessel	Captain	Rig	Number of Guns	Number of Men
ROSELLA	Beatson	Ship	16	35
PRINCESS	Dawes	Ship	2	26
PORTSEA	Stokes	Brig	8	26
ONLY SON	McKay	Brig	14	28
COSSACK (or COSSAC)	(formerly U. S. schooner O. H. PERRY)		1	28
Total of five vessels..			41	143

The escaping brig and schooner, which fought the *Kemp* during part of the sea battle, are estimated to have carried at least 9 more guns and 37 men between them; so the American privateer, built as a merchantman, with only 6 guns and 100 men, had outfought seven vessels mounting 50 guns and carrying 180 men, had caused the surrender of six vessels carrying 45 guns and 160 men, and had obtained physical possession of five vessels mounting 41 guns and carrying 143 men. Nothing was seen of the British frigate that had so furiously chased the *Kemp* away from the fleet of merchantmen, but it appears that on December 4 her commander fell in with the brig and schooner, the sole remnant of his convoy, and "learned to his sorrow, that while thundering over the ocean waves in chase of the privateer, the American was helping herself to the merchantmen that he had received orders to protect from the enemy."

Captain Almeda dictated to his clerk to write in his log:

Manned out the prizes and dispatched them for the United States. Like the gallant Perry, we may say "we have met the enemy and they are ours." In this unequal contest every man acted as Americans should do. . . . Number of guns against us, 41; men, 143. We lost 1 killed, John Irving, and three wounded. The loss of those captured was 3 killed and 5 wounded. The loss of those who boomed off we cannot ascertain.

Maclay says that all the vessels in the British fleet of merchantmen would have been secured by the *Kemp* had it not been for the fact that the privateer "could not spare another man for a prize crew" and that when Captain Almeda decided to "call it a day" and organize his prizes, he had as many prisoners as seamen. As the prisoners were scattered among several different vessels, there was danger of their rising and recovering their ships. Almeda took 53 of the prisoners aboard the *Kemp,* which was all the skipper of the privateer "dared take aboard with his reduced crew." The remainder of the British prisoners, 82 in number (excluding the 8 casualties), were "confined below decks on the various prizes." On December 4, the vessels were separated by thick weather and when on the 6th, "eight days after he had left port, Almeda picked up a Charleston pilot, he had taken half a million dollars' worth of English property." When Captain Almeda got into home waters, his troubles commenced. After sending his prisoners ashore in a sloop, he was ordered by the owner's agent to proceed to Wilmington, and twice on the journey between Charleston and Wilmington the pilots ran the *Kemp* and two of her prizes (the *Princess* and *Portsea*) aground; the *Kemp* and the brig, on one occasion, were ashore for twenty-four hours and had to be lightened before they were refloated. The *Rosella,* however, most unfortunately, did not reach Charleston, as she was grounded and bilged on her way to that port. On December 24, 1814 (the day the peace treaty was signed at Ghent), the *Kemp* finally reached Wilmington Harbor and "fired a seventeen-gun salute as she let go her anchor abreast of Walker's Wharf." Alden and Westcott, in THE UNITED STATES NAVY, mention the exploit of the *Kemp* of Baltimore, under Captain Almeda, as one of the three outstanding privateer achievements of the War of 1812. These historians write that the *Kemp,* "decoying the [British] frigate away in the darkness, ran back to the convoy next day, boarded six of the merchant ships and managed to get away with four."

The *Kemp,* having been refitted, put to sea for her second cruise under Captain Almeda on January 31, 1815 (thirty-eight days after the peace treaty had been signed at Ghent).

For a week, the schooner encountered gales and high seas, shipped a lot of water, lost some canvas, and for a while scudded before a gale under bare poles. On February 8, the privateer fought a fierce action for three-quarters of an hour with the British Post Office packet *Lady Mary Pelham* (Captain Graham), which mounted 10 guns (as against 6 on the *Kemp*) and had forty-two men on board, including five passengers. The Britisher struck her colors after suffering ten casualties (two dead; eight wounded), while the Americans had one killed and three wounded. Almeda removed the prisoners to the *Kemp* and put a prize crew on the captured British packet to "take her in" after a gang of men from the American privateer had repaired the prize and made her shipshape and seaworthy once more.

Shortly thereafter, the *Kemp* intercepted the Swedish ship *Drottning Christina,* out four months, with practically no food aboard and only one and a quarter casks of water. Captain Almeda offered to supply the neutral ship with provisions and water if she would take some of the prisoners captured from the *Lady Mary Pelham,* an arrangement that the captain of the Swedish ship gladly agreed to. A British lieutenant, twenty men, and five passengers were placed aboard the *Drottning Christina,* and Almeda was preparing to transfer the promised food and water by small boats when a big armed ship, believed to be a powerfully armed British cruiser flying an American flag, hove in sight. As she was coming up fast, Almeda felt it necessary to run, but was loath to leave the Swede without putting the needed supplies aboard her. Whereupon the American captain dictated the following letter to his secretary, which was written in duplicate, and each of the two copies was placed in a waterproof cask and dropped overboard in the path of the advancing warship, which by this time had revealed her nationality and opened fire:

To the Captain of the strange sail in sight,

Sir: Not knowing who you are (enemy or friend) induces me to take these methods of informing you that we captured a packet the prisoners of which we put on board that ship you passed which has been out four months and is in a state of distress for want of provisions and water. All of these articles it was my intention to have supplied them. Your heaving in sight prevented us from so doing. There must be now on board the ship 60 men, and they say they have but one and a quarter casks of water on board. It is through humanity that I dictated this to you, the ship being bound for Amelia Island and all hands must eventually suffer.

Joseph Almeda

Friday February 10, 1815 *USS Kemp*

P.S.—I am sorry you chased me off. Possibly you may think by my dictating this to you I am afraid of your outsailing us, but I assure you it is not so. You may as well try to catch a bird flying. We have now on board eight prisoners and our shortening sail ought to be sufficient inducement to assure you. We wished to supply the ship if you will not. Your having American colors is nothing for me to judge by—as we can trust to no colors in war times!

The belligerents made it a practice of showing any flag that they pleased, but it was understood that before a vessel commenced an action, she would fly her true national colors. The *Kemp* cruised in West Indian waters for some time, but found "slim pickings." The vessels boarded proved to be neutrals, and on one of them she placed the remainder of her prisoners. On February 20, she captured a British schooner running with cargo between Demerara and Bermuda. This vessel proved to be the *Yankee Lass,* which as a Rhode Island privateer mounting 9 guns and carrying eighty-five men had been captured on May 1, 1814, on her maiden cruise (when only 20 days out) by the British frigate *Severn.* Almeda took some rum and cordage out of the *Yankee Lass,* put a prize crew aboard, and sent her in. The next day the *Kemp* captured the small British schooner *Resolution* (Captain Allen) loaded with sugar and coffee, and a prize crew took her to Beaufort, N. C.

For some ten days, the *Kemp* was kept busy dodging British frigates and trying to get water at the islands and was refused permission to enter San Juan, Puerto Rico. During this time, the British sloop *P. W. Mynes* was taken and ransomed, and the schooner *Indian* was seized and sent in with a prize crew. Water was finally obtained at Aquadilla on March 3, and the prisoners were landed from the last three prizes. On March 10, the large British ship *Ottawa* (Captain Simpson) from Liverpool to Jamaica, mounting 3 guns and carrying seventeen men, with a large and valuable cargo of dry goods and muskets aboard, was taken off Santo Domingo. The *Kemp* spent three days transferring part of the *Ottawa's* cargo to her own holds, and Captain Almeda then decided to head for home in company with his prize, which had an American crew aboard. On March 26, the *Kemp* chased and brought to the American schooner *Ocean,* bound from Baltimore to Havana, and from her learned of the peace. Captain Almeda now shaped his course for the Chesapeake and, after several stops en route, reached Baltimore on April 3 with a cargo valued at $112,799 aboard. It was reported that a share of the crew's prize money for the two cruises of the *Kemp* under Almeda amounted to $413, that the captain received "nearly $9,000," and that the owners' net return represented "a modest little fortune." These cruises occupied 127 days (a little over four months) in all, including 50 days spent in the waters between Charleston and Wilmington. During this time, the *Kemp* had captured twelve British vessels and actually taken possession of eleven as prizes; these consisted of the three ships *Rosella, Princess,* and *Ottawa,* the three brigs *Portsea, Only Son,* and *Lady Mary Pelham,* the four schooners *Cossack, Resolution, Indian,* and *Yankee Lass,* and the sloop *P. W. Mynes.*

The American Privateer DECATUR *Captures the* DOMINICA *of the Royal Navy*

The third and last American privateer named *Decatur* that took part in the War of 1812 was a schooner hailing from Charleston, S.C. She was commanded by Captain Diron, favorably known for his heroic defense of the French privateer *Superbe* when, in September 1806, he was attacked by the British cruisers *Drake* and *Pitt.* After a plucky fight, which lasted two days and three nights, Diron and his men escaped the clutches of the enemy by running the *Superbe* ashore. In 1812, Captain Diron was appointed master of the *Decatur,* which was armed with 6 12-pounders and 1 long 18-pounder mounted on a pivot amidships. Among his first prizes was the British ship *Nelson,* bound for Jamaica, which was captured and sent into New Orleans; this vessel was described as "a monstrous three-decked vessel of six hundred tons, with an immensely valuable cargo."

On August 5, 1813, the *Decatur* was cruising in the track of British West India traders homeward bound (about Lat. 23° N., Long. 67° W.) when she sighted a ship and a schooner and approached them with caution, as Captain Diron was inclined to the opinion that they might be two enemy sloops of war sailing in pairs in harmony with recently issued admiralty orders. The vessels proved to be the schooner *Dominica* of the Royal Navy (mounting 12 short 12-pounders, 2 long 6-pounders, 1 brass 4-pounder, and a short 32-pounder on a pivot) and the British Government's well-armed and manned packet ship *Princess Charlotte,* which was carrying mails, passengers, and express freight from St. Thomas to England. A second vessel being convoyed by the *Dominica,* but not at the moment in sight, was the armed British merchant ship *London Trader.* Whereas the *Princess Charlotte* was described as having "a formidable armament, a big well-trained crew and only a few passengers aboard," she, being a British mail packet, was operating only to fight defensively and to seek with her speed and guns to avoid capture and make good time between ports. Upon sighting the American schooner, both the *Dominica* and the *Princess Charlotte* changed their courses, and Captain Diron on the *Decatur* had to make up his mind either to fight or run. Deciding to combat a superior force and hoping that the schooner flying the royal ensign from her gaff would not prove "too tough" and that the ship-rigged *Princess Charlotte* would be a prize worth taking, Captain Diron approached the *Dominica,* which separated from the ship, and at 1:30 p.m.

the British war schooner opened fire. The British naval vessel could fire 192 lbs. weight of metal from her armament against only 90 lbs. for the American privateer, but the *Decatur* had 1 long 18-pounder that she used to good advantage, and all the guns on the *Dominica* were short except the 2 long 6-pounders and the 1 brass 4-pounder. Captain Diron, feeling that he had a bigger crew than the Britisher (actually 103 to 88 men), maneuvered to keep away from close contact with the *Dominica's* broadside, rake her fore and aft with his long 18-pounder, and board her from the bow of the *Decatur* without bringing the two vessels alongside. It would seem that Diron, knowing full well that he was of his own volition entering a fight with the odds overwhelmingly against him and that he was deliberately starting an engagement such as privateers were expected (and ordered by their owners) to avoid, was not so sure of the willingness of his men to fight for glory against a heavier ship of the Royal Navy supported by a fast well-manned packet that was probably of herself alone a most formidable foe and as heavily armed as he was. As he cleared for action and sent his men to quarters and after getting all the required ammunition, water, sand, etc., on deck, he closed all deck hatches securely so that none of his men could leave their posts and go below.

Captain Diron made several unsuccessful attempts to get in the position that he desired for boarding. At 3:30 p.m. (two and a half hours after the first gun had been fired), the *Decatur* ran her bowsprit over the *Dominica's* stern, and her jib boom pierced the enemy's mainsail. Quickly the Americans swarmed onto the deck of the Britisher, being protected in boarding by the smoke of battle. In the confined space of the *Dominica's* weather deck, about a hundred and fifty men were soon engaged in mortal combat. A terrible scene of slaughter and bloodshed ensued, and as the crews of the two vessels were intermingled in an inextricable mass, the sharpshooters were useless and joined in the fray with cutlasses and pistols. Lieutenant Barretté, the British commander, was one of the first to fall. He had held the American privateer "too cheap" and, instead of hulling her when he had a chance, had deliberately ordered his gunners to aim high and seek to destroy the "damned Yankee's" spars, rigging and sails so that she could not run away. Severely wounded, he regained his feet, rallied his men, and fought with conspicuous gallantry (while expressing contempt for the "Yankee sailer") until he was killed with a saber cut. All the officers of the *Dominica* were either killed or seriously wounded except one young midshipman and the surgeon (who was attending to his duties below), and no Britisher struck the vessel's colors. They were hauled down by an American after 60 of the *Dominica's* crew of 88 were killed and wounded and the 12 to 15 of the survivors on deck capable of fighting had been either disarmed or driven into positions where it was evident that further resistance was hopeless and "plain suicide."

In so far as the percentage of casualties to the total number of crew on the defeated vessel is concerned, this engagement between an American privateer and a vessel of the British Navy was one of the bloodiest in naval history, and a comparison (made from figures compiled by Maclay) with the losses during regular naval actions between British and American sloops of war fought in the War of 1812 is of interest. The casualties on the British warship *Dominica* were 68.2 per cent of her crew; whereas the bloodiest of all the eight engagements between naval sloops of war resulted in the British *Reindeer's* suffering casualties of 56.8 per cent, and the losses in the other seven actions between British and American sloops had casualties that averaged 29.8 per cent of their total complement. The *Decatur,* which decisively defeated and captured the *Dominica,* suffered casualties of 19.5 per cent of her crew —an index of the severity of the fighting. The greatest loss sustained by any victorious vessel in the eight naval engagements set forth was 15 per cent of the crew of the *Wasp* when this American warship sank the *Reindeer* of the British Navy, and the average number of casualties on board the victorious vessel in these eight naval actions between sloops of war was a scant seven per cent of the crew. The total casualties on both vessels in the *Decatur-Dominica* fight represented 41.9 per cent of the combined crews. The bloodiest engagement between the naval sloops—the *Wasp-Reindeer* action—resulted in casualties of slightly less than thirty-two per cent of the men participating in the fight.

Names of Vessels		Number of					Percentage of Crew		
				Casualties					Total
American	British	Guns	Crew	Killed	Wounded	Total	Killed	Wounded	Casualties
DECATUR		7	103	5	15	20	4.9	14.6	19.5
	DOMINICA	16	88	18	42	60	20.5	47.7	68.2
WASP		22	173	11	15	26	6.3	8.7	15.0
	REINDEER	19	118	25	42	67	21.2	35.6	56.8
WASP		18	138	5	5	10	3.6	3.6	7.2
	FROLIC	22	110	15	47	62	13.7	42.7	56.4
WASP		22	163	2	1	3	1.2	0.6	1.8
	AVON	18	117	10	32	42	8.6	27.3	35.9
HORNET		20	132	1	11	12	0.7	8.4	9.1
	PENGUIN	19	128	10	28	38	7.8	21.9	29.7
HORNET		20	142	1	4	5	0.7	2.8	3.5
	PEACOCK	20	130	5	33	38	3.8	25.4	29.2
ENTERPRISE		16	102	2	10	12	2.0	9.8	11.8
	BOXER	14	100	4	17	21	4.0	17.0	21.0
	PELICAN	21	116	2	5	7	1.7	4.3	6.0
ARGUS		20	125	6	17	23	4.8	13.6	18.4
PEACOCK		22	160	0	2	2	0.0	1.2	1.2
	ÉPERVIER	18	128	8	15	23	6.2	11.8	18.0

The well-armed and manned British packet *Princess Charlotte* kept out of gun range, watched the fight between the *Decatur* and *Dominica* for about an hour and a half, and then sailed away. Her commander, it is said, was confident that the British warship, being the more powerful, would capture or sink the American. In any event, upon his arrival in England, the captain of the *Princess Charlotte* reported that when he "parted company with the *Dominica,* she was in hot pursuit of a Yankee privateer." The day after the fierce battle with and capture of the king's ship, Captain Diron sighted and promptly took the British merchant ship *London Trader,* which was being convoyed by the *Dominica.* A prize crew was put aboard, and this vessel was sent to Savannah, where she arrived safely and proved a rich prize, as she had on board a cargo consisting of 209 hogsheads of sugar, 140 tierces of molasses, 55 hogsheads of rum, 700 bags of coffee, and 60 bales of cotton. The *Decatur,* convoying the *Dominica,* which Captain Diron had repaired, headed for Charleston and, dodging British cruisers that "were swarming along the American coast and effectually establishing a complete blockade," made land near Georgetown. She sailed cautiously southwest down the coast some sixty miles and succeeded in safely crossing Charleston bar on August 20 (fifteen days after the fight). The *Decatur* had traveled with her prize some thirteen degrees of longitude (to Charleston) and about ten and a half degrees of latitude (to Georgetown). Capt. George Coggeshall, who wrote a history of American privateers in the War of 1812 and who himself ably commanded the *David Porter* and the *Leo,* was in Charleston when the *Decatur* arrived with her prize. After seeing and talking with many of the prisoners, he wrote that the survivors of the *Dominica* "attributed the loss of their vessel to the superior skill of the *Decatur's* crew" in the use of firearms and "to Captain Diron's adroit manner in maneuvering his schooner during the action, which rendered the Englishman's carriage guns in a manner almost useless." Captain Diron attributed his victory to overconfidence on the part of Lieutenant Barretté, the brave commander of the *Dominica,* and to the British naval officer's underestimation of the damaging power of the *Decatur's* single long 18-pounder (which was superbly handled) and the fighting qualities of the American privateer's crew.

The capture and the sending into port as a prize of the British merchant ship *London Trader* evidently saved Captain Diron from "severe censure" by the owners of the *Decatur;* for "there was no cargo to be looted in a king's ship," and the owners of privateers had no use for captains who, "letting the profits go hang," would expose their commands to the fire of enemy naval vessels or even privateers and fight merely for glory. Private enterprise in war-times could not afford to take such risks; yet historian Ralph D. Paine says that whereas many American privateers were captured by superior enemy forces without putting up very savage resistance, "on the whole it is fair to say that the private armed ships outfought and outsailed the enemy [during the War of 1812] as impressively as did the few frigates [and sloops of war] of the American Navy."

The Impudent Dooly with His Single 12-Pounder

The last privateer to sail from Baltimore in 1812 was the *Rolla,* and under Captain Dooly, with his famous single 12-pounder, this schooner made history off Madeira before the year closed. Built in Baltimore in 1809, the *Rolla* was of 117 tons register and measured 79 ft. long, 20 ft. 2 in. beam, and 8 ft. 2 in. depth of hold. Among her owners were the firm of Hollins & McBlair and Christopher Deshon. James Dooly, who had been lieutenant on the 161-ton privateer *Dolphin* (12 guns; 100 men), was placed in command when the *Rolla* was commissioned as a privateer on October 20, 1812. The *Rolla* was armed with 6 6-pounder carronades and a long 12-pounder. Dooly, after trying in vain to sign up a crew of 80 men for his vessel in Baltimore, sailed with about half that number to New England, where he endeavored, also in vain, to find the men he wanted in Rhode Island. He was able to get a crew at Boston, from which port he sailed on the *Rolla's* first cruise against enemy commerce on November 30, 1812, with half his crew made up of Yankees.

In mid-December, off Madeira, the *Rolla* was hit by a severe gale, which came up so quickly that Dooly did not have time to get his guns from the deck into the hold. Heavy seas came aboard, and the schooner "was in great peril." In order to lighten the vessel and make her more buoyant and less top-heavy, Dooly felt it necessary to throw all the 6 carronades overboard. When the weather moderated, the once well-armed 7-gun privateer was a mere merchantman, with only 1 gun aboard, but she had a good fighting crew that was quite large for a little 117-ton schooner. Captain Dooly announced to his officers and men what they all well knew: that they were "in somewhat of a plight." He told them that there were three courses open to them: (1) to return to the United States with nothing to show for their time, labor, and risk; (2) to go to a French port to refit; (3) to continue their cruise against the enemy with nothing but the one 12-pounder gun, backed up by their muskets and boarding arms and a determination to gain prizes and make the cruise pay. The officers and men voted to continue the cruise, "depending on their single cannon and their small arms."

Shortly after this decision was reached, the *Rolla* sighted seven sail, and the "impudent Dooly" bore away in chase of the nearest one, a full-rigged British merchant ship, the *Mary,* mounting 14 guns. The American privateer showed that she was pierced for 6 guns, which gave no voice in this encounter, but the Britisher did not know of the absence of these guns. The one 12-pounder boomed, the *Mary* fired a broadside, and then, surprisingly, the 14-gun ship surrendered to the audacious American, which had only a single gun aboard. A prize crew was placed aboard the captured vessel, and Dooly then went in chase of the nearest sail, which proved to be the ship *Elisha* of 10 guns; this vessel was captured easily and manned with a prize crew. The third member of the fleet, notwithstanding the psychological effect on her command by the surrender of the *Mary* and *Elisha,* put up a fight. This vessel was the ship *Rio Nuova,* armed with 18 guns, which she did not hesitate to use. The *Rolla* was driven off with heavy broadsides, so Dooly used the speed, handiness, and maneuvering qualities of his schooner to good advantage, kept out of the range of the broadside guns of his antagonist, crossed and recrossed the *Rio Nuova's* bow, and raked the enemy's deck with his long twelve. The destruction of the single gun, well aimed, was great, and the British ship, refusing to take such punishment, struck her colors just before Dooly was planning to board her from the bow. The remaining vessels of the British merchant fleet (all part of a Cork-bound convoy that had become separated from the whole during the gales that had cost the *Rolla* her 6 broadside guns), seeing three ships captured of greater size and more power than themselves, surrendered one by one as the American privateer ran up to them, and Dooly, with a fast schooner under him, was as relentless as he was intrepid and did not permit one of the enemy sail to escape. The seven British vessels captured by one American 12-pounder gun, backed up by 80 determined men in a fast and handy schooner, mounted 65 guns and carried 157 men. These vessels and their disposition can be stated as follows:

Name of Vessel	Rig	Number of Guns	Number of Men	Disposition
MARY	Ship	14	28	Arrived at Newport, R. I.
ELISHA	Ship	10	24	Arrived at New York
RIO NUOVA	Ship	18	35	Arrived at New York
APOLLO	Ship	10	22	Recaptured by H.B.M.S. *Grampus*
BORROSA	Brig	6	18	Arrived at Martha's Vineyard
SWIFT	Schooner	3	14	Pillaged and burned
An Aberdeen schooner	Schooner	4	16	Used as a cartel to carry prisoners to Britain
Total of seven vessels		65	157	4 arrived U. S. A. ports; 1 recaptured; 1 burned; 1 used as cartel

Some records say that Captain Dooly put "most of his 150 prisoners" aboard the Aberdeen schooner that "he ordered to England as a cartel," and we also read that, "with more than half of his crew absent on prizes and a large number of prisoners aboard, Dooly steered for home." It is doubtful as to whether any privateer in the history of sail ever made a haul as great as the little *Rolla* in one day, and the ratio of the gun power of the privateer to that of the captured vessels sets an all-time record. After stopping to provision a Portuguese vessel in distress (83 days out from Philadelphia; bound to Lisbon), the *Rolla* crossed the Atlantic for home and reached Annapolis on January 23, 1813, after a cruise of 54 days out of Boston. It is said that "a share of the prize money of the crew netted $223.50" and that Dooly's share as captain "totaled nearly $4,500.00."

Eluding the British blockade of the Chesapeake, the *Rolla* got to sea again March 30, 1813, with Captain Dooly in command. On April 8, off the eastern end of Cuba, the *Rolla* was hailed by an American ship (*David Green*), and her captain (Farley) requested permission to board the privateer, which was granted. Strange as it may seem, Farley declared that he was waiting for a British man-of-war to convoy him to Jamaica and "protect him against American ships-of-war and privateers," and he possessed a British license granting to the *David Green* permission to go unmolested by British warships, as her owners were "well disposed toward His Majesty's interest." Captain Dooly promptly arrested Captain Farley as a traitor, seized his vessel and took her into Havana, where she was sold as a prize. After being chased by British cruisers, the *Rolla* later took the brig *George Prevost* (Captain Humble), from Halifax, N.S., bound for Jamaica with naval stores, and sent her into New Orleans. Shortly thereafter, a British 74-gun ship of the line and a big, fast frigate of the Royal Navy pursued the *Rolla*. Whereas she easily outran the battleship, she had a hard time showing her heels to the frigate in the wind and seas encountered and did not get free until she lightened herself by throwing overboard heavy portable weights, including her 6 6-pounder carronades. Therefore, on her two completed privateering cruises, the *Rolla* returned to port with only her long twelve aboard. Captain Dooly took his schooner into Beaufort, N.C., on June 4, 1813, after a cruise of 66 days. He had taken three prizes, which, during a period of 120 days at sea, made a total of nine vessels captured from the enemy and one disloyal American taken when engaged in British service. Captain Dooly left the *Rolla* at Beaufort, N.C., and journeyed as a passenger aboard a small coasting schooner bound to Baltimore; on the journey, the coaster was captured by the British, and Captain Dooly was made a prisoner for the duration of the war.

In the fall of 1813, the owners of the *Rolla* sent the schooner under Capt. George Fellows to Newport, R. I., and later to Stonington, Conn., to pick up a crew and make her third cruise against the enemy. The *Rolla* sailed at 4:00 p. m., December 10, 1813, but when 18 hours out was captured by H.B.M.S. *Loire.*

The Last Fight of the New York Privateer GENERAL ARMSTRONG

An historic American privateer was the New York brigantine *General Armstrong,* which came prominently to the attention of the public because of a courageous initial fight against a 24-gun British man-of-war and whose end came in a blaze of glory by her gallant defeat of the British in the harbor of Fayal on September 26-27, 1814. The vessel was named for John Armstrong, the secretary of war, when in early 1813 she was fitted out by the New York shipping firm of Jenkins & Havens. On March 11, 1813, during her first cruise, under the command of Capt. Guy R. Champlin, off the Surinam River (Dutch Guiana), she was deceived by the disguise and antics of a powerful British man-of-war and brought into an action that she would certainly have avoided if the stranger's identity had been known. The Britisher carried heavy guns, 14 on the main deck, 6 on the long quarter-deck, and 4 on the forecastle (making 24 in all), and she was fully three times as powerful as the "*Armstrong*" in weight of metal thrown. Champlin worked so close that for a while he even considered attempting to board his adversary, but the Britisher had too many men, and, moreover, they were well officered and disciplined. The fight between a heavily built, well-protected, and powerfully armed and manned king's ship and a relatively light American privateer that was a merchantman, built for trade and not for war, would have been pathetically one-sided had it not been for the spirit of the Americans and the demonstrated superiority of the "Yankee gunners." Each of the vessels was badly mauled, but when the Britisher's colors were shot away Captain Champlin was below having a wound dressed. When the enemy craft was out of control and her fire had virtually ceased, the Americans, thinking that the enemy had surrendered, lost an opportunity to rake the deck of the British vessel fore and aft with their long tom (loaded with a double charge of round and grape and ready for firing) at a distance of only "half pistol shot of the enemy's cabin windows." Each vessel withdrew from her opponent and gradually got out of gunshot of the other, but whereas the contest was indecisive, the honors, aside from those due to the difference in size, weight, and power(guns and men), lay with the Americans, who had outfought the British against tremendous odds. The *General Armstrong* suffered heavily in casualties, having six men killed and sixteen wounded, but the British losses, believed to have been heavier, are unknown.

After Captain Champlin had made necessary repairs to his rigging and sails and reinforced certain spars, he made for Charleston, S.C., for overhauling and reached that port on April 4, 1813. Ten days later, at a meeting of the stockholders of the *General Armstrong,* held in Tammany Hall, New York, Captain Champlin was not censured for the great risk and damage to private property—and the casualties suffered—because of deliberately seeking an engagement with a vessel that proved to be a heavy king's ship (a procedure that would certainly have occurred in some other parts of the country). He and his officers and men were formally thanked and praised for their gallant and patriotic defense of the American brigantine, and an engraved sword, commemorative of the action, was presented to Captain Champlin.

Maclay, in A HISTORY OF AMERICAN PRIVATEERS, says that the *General Armstrong* was remarkable both for the value of the prizes taken and for the obstinacy of several of her engagements with heavily armed vessels. In addition to mentioning her fight with the British warship off the north (Dutch Guiana) coast of South America, Maclay says:

> She had a desperate battle with an English ship carrying twenty-two guns and an unusually large crew. The battle took place at the mouth of the Demerara River [British Guiana] and lasted thirty-five minutes, at the end of which time she compelled the enemy to run ashore. On another occasion she had a severe engagement with the English ship *Queen,* carrying sixteen guns and a complement of forty men. The *Queen* was from Liverpool bound for Surinam, with a cargo invoiced at about ninety thousand pounds. Her people made a brave resistance, and did not surrender until their commander, the first officer and nine of the crew had been killed. This, perhaps, was as valuable a prize as was made in the war. A prize crew was placed aboard, with instructions to make for the United States, but unfortunately, when nearing the coast, the *Queen* was wrecked off Nantucket. Another prize of the *General Armstrong* was the brig *Lucy and Alida,* with a valuable cargo. She was recaptured by the British privateer *Brenton,* and retaken again by the privateer *Revenge,* of Norfolk.

There are also records of the capture by the *General Armstrong* (Captain Champlin) of at least five British brigs, a schooner, and a sloop. Two brigs were sent in safely; a third, the *Tartar,* loaded with rum, was wrecked on the bar going into Georgetown, S.C., but the crew and cargo were saved. The brig *Harriet,* being short of water, was sent into San Juan, where the Puerto Ricans (Spaniards) seized her and turned the vessel back to the British. The brig *Phoebe* was scuttled. The captured schooner was burned, and the sloop *Resolution,* bound to Lisbon from Jersey with linen, paper, etc., aboard, had her most valuable cargo transferred to the *General Armstrong,* following which the sloop was used as a cartel to carry prisoners ashore.

The *General Armstrong* left New York on her last cruise during the night of September 9, 1814, with a "matchless crew of American merchant sailors" aboard. She was chased by a ship of the line and a big razee of the British blockading squadron, but showed her heels to her powerful pursuers. She sailed and successfully evaded the British fleet under the command of Capt. Samuel Chester Reid (late of the letter-of-marque schooner *Boxer* of 275 tons; 6 guns; 35 men). When a day out, the "*Armstrong*" overhauled, after a chase of nine hours, a fast schooner that had lightened herself to escape. It developed that she was a Baltimore privateer (said to have been the *Perry*), which had to return to port and get a new battery. On September 11, the "*Armstrong*" sighted a large sail, which proved to be a heavy British brig of war. Captain Reid audaciously ventured close to size up the king's ship and wrote in his log: "Fell in with an enemy's gun brig; exchanged a few shots with and left him." This brief statement is merely another oft-recorded item of testimony that shows the superiority in speed and handiness of the vessels of the American merchant marine, whether armed and commissioned as privateers or letters of marque (or going about their business as peaceful traders), in comparison with the fastest vessels of the British Navy and of the British mercantile marine, whether converted into "king's ships" as cruisers, commissioned as privateers, or in service as merchantmen. With this superiority in ships consistently noticeable in the War of 1812, the United States also held a decided edge in quality of command as far as brilliant, resourceful, and intrepid seamanship was concerned.

After boarding and examining the papers of a Spanish brig and schooner and of a Portuguese ship on September 24 and finding them "regular" and the vessels bound for Havana, Captain Reid made for Fayal in the Azores to obtain water and fresh provisions and dropped anchor in the Roads on the afternoon of September 26. Reid, being "anxious to get to sea early on the following morning," immediately went ashore and called on the American consul, John B. Dabney (of Boston), who acted with promptness and then, with a few friends, went on board the *General Armstrong* as the captain returned to his vessel. Captain Reid made inquiries about British warships and was informed that there was no knowledge of any in the proximity of the Azores and that "not one British warship had visited these islands in several weeks." However, upon the approach of dusk, the British war brig *Carnation* (18 guns) suddenly hove in sight and soon hauled close in and let go her anchor within pistol shot of the American privateer. The British vessel was favored with the wind, and upon boarding her the pilot had revealed the identity of the *General Armstrong,* so things looked quite ominous when closely following H.B.M. brig *Carnation* (in command of Capt. George Bentham, R.N.) appeared H.B.M. ship-of-the-line *Plantagenet,* rated at 74 guns and commanded by Capt. Robert Lloyd, R.N., and H.B.M. frigate *Rota,* rated at 38 guns and commanded by Capt. Philip Somerville. (All these vessels, as was common at the time, mounted many more guns than their rating.)

Captain Reid, notwithstanding the inviolability of a ship in a neutral harbor according to international law and the assurance of the people from shore that he would not be molested while at Fayal, was disturbed by the constant signaling between the three enemy vessels and the signs of great and unusual activity aboard. His suspicions being aroused, Captain Reid determined to clear his brigantine for action and to haul her in nearer the shore. This move did not please the British, and the heavy brig *Carnation* cut her cables and made sail to follow and keep contact with the *"Armstrong"*; but the wind was then very light, and the war brig made little or no progress. Impatient at the widening breach of water between the two vessels, the British gave orders to lower four big ship's boats (or fighting barges) and go in pursuit of the American. At about 8:00 p.m., Captain Reid, seeing the four large well-manned and armed enemy boats approaching, dropped anchor with springs on his cables and brought the privateer's broadside to bear upon the advancing foe. Although repeatedly hailed and warned as they drew near, the British boats (under command of Lieut. Robert Faussett) did not deign to reply. Apparently sure of their game, they pulled with increasing vigor and set about making preparations for boarding. The American's protective fire was withheld until the enemy boats were drawing alongside the privateer, when the *"Armstrong's"* guns and small arms came into action. The boats promptly returned the fire, but they were soon driven off in a crippled condition, following which Captain Reid hauled his vessel still closer to the shore and moored her bow and stern "close to the beach and within half pistol shot of the castle." In this first encounter, there was visible evidence that the British "suffered upwards of twenty casualties, killed or badly wounded," and the *"Armstrong"* had a seaman killed and the first lieutenant wounded.

After the first attempt to board the American had been repulsed with vigor, the British commenced to put more big boats overboard and plan a formidable attack in force. News of what had occurred and was about to happen spread over Fayal, and the coming fight was observed by many of the inhabitants, who lined the shore. The governor himself, with many of the first people of the community, witnessed the affair and, on account of the brightness of the moon, had a most favorable view of the scene of action. At midnight, the British moved to the attack and used twelve large boats built for boarding and landing (against the enemy), each carrying a good-sized carronade gun in the bow. About four hundred well-armed and trained men were aboard these boats, and they operated with precision according to orders. When they came within "point-blank range," the *"Armstrong"* opened fire. The discharge of the American's long tom, which was well handled, did great execution and staggered the Britishers for a while, but the attacking force was numerous and spread over twelve units that presented but little targets until they succeeded in pulling alongside. With the privateer unable to use any of her broadside guns or her long tom, the real fighting and carnage commenced, and henceforth it was a battle with small arms and hand-to-hand fighting. As the British, following the command to "board," started to swarm up the sides of the *"Armstrong,"* pikes, cutlasses, battle-axes, pistols, and muskets came into lively play and were used by the Americans with deadly effect as they fought not only to save their lives but also to avenge the wrongs that they, their families, and their fellow countrymen had suffered at the hands of British press gangs and because of a ruthless British marine policy. Repeated attempts to board the privateer (with a low freeboard) were made on the sides, bow, and stern, but were repulsed with great slaughter. The repelled boarders were trained marines and sea soldiers (as well as seamen), and they fought valiantly, but were no match for the infuriated defenders of "the Yankee brig." After a while, the vigilant privateersmen, not content to attack targets in the form of Britishers whose heads appeared above the bulwarks, clambered up on the rail and, by firing into the crowded boats below, caused many casualties. The British did evidently, for a brief period, gain a footing on the forecastle of the "*Armstrong*" and, through superior numbers, threatened for a few minutes to rush the ship. Second Officer Williams was killed by a musket shot, and Third Officer Johnson was incapacitated by a serious wound; but Captain Reid rallied his men, who pushed the Britishers back either into their boats or into the water. After forty minutes of fighting, the British were discouraged, and because of their heavy casualties and the hopelessness of ever taking the American by boarding, orders were given to retire.

Captain Reid, upon the enemy's retreat, cleared decks to prepare for a fresh action. The long tom, the main reliance of the privateer, was dismounted, and several of the broadside guns were disabled. By great exertions, the long tom was mounted again, and investigation showed that notwithstanding the bloody nature of the fight, the Americans had suffered only nine casualties (two killed and seven wounded) in all the fighting with the British boats. In addition to the second officer, a seaman had been killed (both by musket shots), and among the wounded were First Officer Worth, the third officer, the quartermaster, and four seamen. Two of the Britisher's boats, both from the frigate *Rota,* had been captured by adventurous Americans. Of some fifty men originally in these boats, it is said, "only seventeen escaped death, and they by swimming ashore." A third boat was found in bad condition under the stern of the privateer, and this proved to be from the battleship *Plantagenet;* all the men in this boat, we are told, "were killed save four," the lieutenant in command saving himself by jumping overboard. The British naval officer who commanded the boat expedition was First Lieutenant Matterface of the frigate *Rota,* and he was killed as was also Third Lieutenant Norman of the same vessel, while three other high ranking officers of the *Rota* were badly wounded. The slaughter of the British was terrible, and they were driven off with such tremendous losses that one Englishman wrote, "They stagger belief."

An English eyewitness of the British attempt to take the *General Armstrong* by overwhelming boarding forces wrote:

> The Americans fought with great firmness, but more like bloodthirsty savages than anything else. They rushed into the boats sword in hand and put every soul to death as far as came within their power. Some of the boats were left without a single man to row them, others with three or four. The most that any one returned with was about ten. Several boats floated ashore full of dead bodies. . . . For three days after the battle we were employed in burying the dead that washed on shore in the surf.

From information that inquirers in regard to the extent of the British calamity received some days after the event from the British consul at Fayal, from officers of the British fleet, and from others in a position to estimate closely, it was evident that on the second big attack by boats on the *General Armstrong,* the British had 250 casualties, of whom 120 were killed and 130 wounded. Alden and Westcott, in THE UNITED STATES NAVY, say: "When profit or necessity prompted, the privateersmen would fight 'like pirates,' their not too remotely distant kin. The *General Armstrong,* with 90 men, while anchored at Fayal in the Azores in September 1814, repulsed repeated attacks by boat crews from three enemy men-of-war and inflicted a loss of about 210 killed and 140 wounded." This statement of 350 casualties seems excessive. Captain Reid was inclined to the opinion, based on his observation and inquiries, that the British casualties were not less than 270 against an American loss of 9 men (only 2 of whom were killed)—a ratio of 30 to 1—although Reid felt that it was possible that the total British losses in the fight at Fayal exceeded 300. For a week, the British squadron was detained in the harbor burying its dead and attending to the wounded. On September 30, 1814, the British sloops-of-war *Thais* and *Calypso* joined the fleet at Fayal and were immediately detailed by Commodore Lloyd of H.B.M.S. *Plantagenet* to take the severely wounded to England. The *Calypso* sailed full on October 2 and the *Thais* two days later. When the British squadron reached Jamaica on November 5, 1814, the officers admitted a loss at Fayal of 63 killed and 110 seriously wounded, or casualties of 173, which grossly understated the facts—and this even more than was the usual British Navy custom. The British were quite humiliated at the bad defeat to which they had been subjected at the hands of "damned Yankee privateersmen" and did all they could to minimize their loss and decry the importance of the affair; yet even the announced figures of the British show that the total number of admitted casualties (both killed and wounded and the aggregate) exceeded that of the British in any naval action during the war.

Maclay gives the following figures of British naval losses in frigate actions compared with the understated, but admitted, losses that an entire British squadron suffered when it tried and failed to take the relatively small and weak American privateer *General Armstrong* by boarding:

Action		British Casualties		
U. S. Vessel	British Naval Vessel	Killed	Wounded	Total
GENERAL ARMSTRONG (privateer)	H.B.M. ships PLANTAGENET, ROTA, and CARNATION	63	110	173
CONSTITUTION (frigate)	JAVA (frigate)	60	101	161
UNITED STATES (frigate)	MACEDONIAN (frigate)	36	68	104
CHESAPEAKE (frigate)	SHANNON (frigate)	24	59	83
CONSTITUTION (frigate)	GUERRIÈRE (frigate)	15	63	78
CONSTITUTION (frigate)	H.B.M.S. CYANE and LEVANT	35	42	77

Maclay, in giving the understated British figures for casualties suffered at Fayal, compares these admitted losses with those sustained in other engagements with a foreign foe and writes: "On November 3, 1805, Sir Richard Strachan, with four ships of the line and four frigates, fought a French fleet many hours, capturing four ships of the largest rates. His loss was only one hundred and thirty-five killed or wounded." Commodore Lloyd of the British squadron admittedly lost 173, and probably 300 men, in a futile attempt to take by storm a single American privateer lying in the supposed refuge and inviolability of a neutral port.

At 3:00 a.m. on September 27 and in the early morning after the fight and the overwhelming defeat of the British forces, Captain Reid was called ashore by U. S. Consul Dabney and informed that the governor of the Portuguese islands had sent a note to Commodore Lloyd of the British naval squadron beseeching him to respect the neutrality of the port and desist from further hostile acts. The British naval commander, chagrined and indignant at the stain on British "honor," had vehemently replied that he was now determined to take the American privateer if he had to "knock down the whole town in doing it." He was going to punish the "damned Yankee upstarts" if he had to blow them and all of Fayal to "Kingdom come." Upon hearing this, Captain Reid well knew that the big guns of a British battleship, a frigate, and a heavy brig of war would inevitably prevail and that vindictive murder was in the air, so he returned to his brigantine, removed the casualties, and ordered the members of the crew to get all their belongings ashore. At daylight, the H.B.M.B. *Carnation* came in close and commenced a heavy fire on the *General Armstrong,* which responded so vigorously that the heavy brig was made to haul off to repair her fore-topmast, rigging, deck, and hull damage. During this bombardment, the town of Fayal suffered, a number of houses and other buildings were hit, and several inhabitants—men, women, and children—were wounded. The *Carnation,* after reconditioning herself, again moved in to "the kill," with orders "to bombard and take the pestiferous Yankee," supported by the powerful frigate *Rota* and with the big long-range guns of the battleship *Plantagenet* available, if necessary, to administer the coup de grâcé. Captain Reid now ordered his ship to be scuttled to prevent the enemy from cutting her out, and then he abandoned her and, with all his men, went ashore. When the British found that the Americans were not answering their fire, they cautiously reconnoitered, and, with memories of the horrible previous night ever in mind, when they were sure that they would meet no resistance from the Yankee, they manned their small boats, boarded the privateer, and set her afire as she was settling to the bottom.

Unfortunately, the gallant fight—and ultimate loss—of the *General Armstrong* is symbolical of much of the fighting of the War of 1812. American ships fought brilliantly, but when they had no chance to show their speed and superior maneuvering qualities, they were often overcome by sheer force of numbers—ships, men, and guns—and weight of iron.

> "Tell the story to your sons. Of the gallant days of yore.
> When the brig of seven guns, fought the fleet of seven score.
> From the set of sun till morn, through the long September night—
> Ninety men against two thousand; and the ninety won the fight
> In the harbor of Fayal the Azore."

When the *General Armstrong* was destroyed, the British talked of a victory; but it has been well said that "such 'victories' as this marine Bunker Hill proved very disastrous to the 'victors.'" The commodore of the British squadron (Captain Lloyd) was naturally quite perturbed by developments and, it would seem, somewhat "lost his head." When the *Calypso* and *Thais* were sent as hospital ships with the wounded to England, no letters nor information bearing on the fight were permitted to go forward. Lloyd even intensified the infamy of his attack on a vessel in a neutral harbor by adopting a policy of revengeful persecution of the American seamen ashore under the pretext that he was searching for deserters from the British Navy, and as such men were allegedly guilty of "high treason," he demanded the co-operation of the Portuguese authorities in apprehending all American sailors and "producing them" so that he could examine the men. The Portuguese, who had for long years "played with" and been subordinate to the British, acted not as subjects of a neutral sovereign power but as Britain's allies and, notwithstanding their pretensions and occasional protestations, "listened to their master's voice" to their everlasting shame. Captain Reid and some of his men retired to the interior of the island, fortified an old convent, and prepared to defend themselves and fight it out with either British or Portuguese, but after the British squadron had sailed, they returned to Fayal and ultimately to the United States, where they were received with distinction. On the way to New York from Savannah, Captain Reid was the honored guest at a splendid public entertainment in Norfolk, Va. There was a large gathering, which included the governor of the state, the speaker of the House of Delegates, the president and members of the legislature. Some of the toasts were highly characteristic of the feelings of the American people in the winter of 1814-1815 in regard to United States maritime forces. A few are reproduced herewith:

Captain Reid—his valor has shed a blaze of renown upon the character of our seamen, and won for himself a laurel of eternal bloom.

Volunteers—the memory of the *General Armstrong;* she has "graced her fall and made her ruin glorious."

Neutral ports—wherever the tyrants of the ocean dare to invade these sanctuaries may they meet with an *Essex* or an *Armstrong*.

The American seamen—their achievements form an era in the naval annals of the world; may their brother soldiers emulate their deeds of everlasting renown.

Barney, Boyle and their compatriots—who have plowed the seas in search of the enemy and hurled retaliation upon his head.

The private cruisers of the United States—whose intrepidity has pierced the enemy's channels and bearded the lion in his den.

The Navy—whose lightning has struck down the meteor flag of England; they have conquered those who have conquered the world.

The heroic defense of the privateer *General Armstrong* at Fayal and the large casualties inflicted on the British forces had a momentous effect upon the war. Later, it developed that Commodore Lloyd's squadron was an important part of a larger fleet ordered by the admiralty to concentrate at Jamaica under Admiral Cochrane and proceed in an expedition against Louisiana and the capture of New Orleans. The squadrons making this fleet did not arrive at the appointed rendezvous on scheduled time, as the Lloyd squadron "had been delayed ten days on its way to Jamaica" because of the reverse suffered at Fayal at the hands of the *General Armstrong,* whose capture had been deemed important by the British when they found her at anchor in the Azores port for two reasons. They wanted "not only to obtain possession of the vessel, celebrated for her audacity and fast-sailing qualities, but also to use her in the shallow waters of Lake Pontchartrain and the mouth of the Mississippi in the attack on New Orleans." Admiral Cochrane's fleet, with transports carrying troops, artillery, and supplies, sailed from Jamaica on November 26, 1814, and arrived at New Orleans four days after General Jackson's entry with United States troops into the city. It has been said: "If the fleet had appeared on the scene one week sooner, nothing could have prevented the British from marching into New Orleans and taking possession of that city and as high up the Mississippi River as could be held." Therefore, the New York privateer brigantine, by her gallant defensive action in the neutral port of Fayal, evidently saved Louisiana from the hands of the enemy and permitted the war with Britain on the American continent to end with a brilliant and conclusive victory for United States arms.

Thus Captain Reid by courage saved
New Orleans; and by victory paved
The way to noble, endless fame
And won him an immortal name.

(from on old poem entitled,
"Story of Fight at Fayal")

The aftermath of the heroic defense and loss of the *General Armstrong* was staged in international diplomatic circles and the courts and was eventually settled in 1856—forty-two years after the "Battle of Fayal." The claim for indemnity made by the captain and owners of the American privateer was prosecuted intermittently against Portugal by the United States Government during a period of over thirty-eight years. As a result of a treaty entered into on February 26, 1851, it was agreed by the two nations involved to accept Louis Napoleon, the Prince President of France, as final arbiter of this dispute. Napoleon III, just after he had become emperor of the French, actuated primarily by a desire to curry favor with the British and the Portuguese (with but little thought to faraway America, facts, and international law), rendered his decision on December 11, 1852, against the claimants. The matter was then referred to the United States Court of Claims, where it was urged that the case had been improperly submitted to arbitration and badly managed by the secretary of state. On March 17, 1856, Chief Justice John J. Gilchrist delivered the opinion of the court that "where an award is binding against the government, which by its own acts has disregarded and sacrificed the just rights of its citizens, it is bound to make compensation for the neglect of its duty in not affording them protection." The counsel for the claimants before the Court of Claims was Samuel C. Reid, Jr., son of the captain of the *General Armstrong.* An important letter read at the trial was from Charles W. Dabney, the new U. S. consul at Fayal, who as a youth had witnessed and participated in events during that fateful night when his father, John B. Dabney, was the consul for the Azores.

VII.

UNITED STATES SHIPPING AND COMMERCE RISE TO WORLD-WIDE PRE-EMINENCE BEFORE THE CIVIL WAR

Privateering and Piracy Following the War of 1812—the "Black Flag" under Spanish-American Commissions

For years both Britain and Spain tried to weaken United States trade with their respective West Indian colonies and possessions and, by artful regulations, "sought to limit American traders to types of vessels that were unseaworthy and ineffective." This sort of discrimination was doubly harmful in its reaction, for the small and unsuitable craft had to battle North Atlantic gales in the winter and Gulf of Mexico hurricanes of terrific and destructive force that, traveling over the entire length of the course, were likely to be encountered each year from the middle of July to November. According to Marvin, the United States-West Indies traders, moreover, had "enemies crueler than the tempests, greedier than the most avaricious of colonial officers of custom," and unfortunately, unlike the vessels of the British, French, Spanish, and Dutch, they had no national navy to protect them. Continuing, Marvin says:

> For two centuries, the Caribbean archipelago had been an infamous nest of piracy. England, Spain, and France either could not or would not punish these sea thieves and destroy their accursed calling. The Spanish flag gave them especially hospitable shelter, and time and time again Spanish colonial authorities were accused of being in league with the pirates and sharers of their blood-bought wealth. Most of the pirates were of the Latin races, but there were among them desperate outlaws of all nations, even sometimes English and Americans. After the War of 1812-1815, the pirates of the Spanish main became particularly bold and numerous. They had been reinforced by many of the so-called privateers fitted out by the Spanish American republics in their wars for freedom.

The United States, having gained its freedom from Britain as a result of the War of the Revolution of 1775-1783 and having made its liberty secure and complete for all time by the War of 1812-1815, was ardently sympathetic toward the various South American peoples who were in rebellion against the arbitrary, dominating, and suppressing rule of Spain and striving by force of arms to win their independence as had the thirteen North American British colonies. This strong moral support of the people of the United States to South Americans battling for their liberty resulted in many Americans' openly encouraging and actively backing the cause of the revolutionists. Although the United States was at peace with Spain and the American Government sought to be neutral, popular opinion in the country favored the South Americans' fight for freedom, and following the close of the War of 1812, many fast armed United States-owned merchantmen continued their adventurous and profitable careers as privateers flying the flag and supplied with a commission of one of the South American countries then in revolt against Spain. In the fight against Britain, the privateers of the United States had operated in full conformity with the law and in strict harmony with the terms of their commissions, but when they flew a South American flag, supervision was lax or nonexistent, and several American privateers degenerated into piracy and became a menace on the seas not only to Spain but also to legitimate ocean commerce flying neutral flags.

It has been said, with a measure of truth, that one of the injuries inflicted upon the United States by the War of 1812 (conducted primarily by privateers)—and one of the major evils resulting therefrom—was the support it gave to the practice of piracy on the high seas. The prevailing greed in 1812-1815 for a "subject of safe and uncontested capture" developed the spirit of piracy among the owners, commands, and crews of several American privateers, and when the war with Britain ended, some of these craft, actuated solely by avarice, became pirates. The Spanish colonists in America had revolted in 1810. The insurgent armies were scattered in small bands in a vast territory running from Texas in the north to the River Plate and Valparaiso in the south. In every province in revolt, there was some *junta* that was recognized by foreign powers as enough of a government to be entitled to belligerent rights, and one of its acts was to commission armed vessels as privateers to prey upon Spanish commerce. In the struggle of the Latin American peoples for independence, the revolutionary governments sought to harass Spanish shipping, and as they had practically no marine tonnage or seamen of their own, they "showed a shameless readiness to grant privateering commissions" to any adventurous foreign vessels, without regard to the nationality of ownership, command, officers, and seamen. This policy, whereas it operated to help the anti-Spanish revolutionary cause, ultimately encouraged lawlessness and piracy not only in South American and West Indian waters but also on many ocean trade routes.

French privateers sailed under the South American revolutionary flags as did some Baltimore schooners (which were better adapted for illegitimate trade than for normal peace-time commerce), and we are told that "Latin-American privateers took on more and more of an international aspect." The privateer *Heroine,* when captured by a Portuguese frigate, had a crew of 126 men composed of 42 British, 26 South Americans, 19 North Americans, 10 Frenchmen, 7 Italians, 6 Spaniards, 4 East Indians, 3 Swedes, 2 Prussians, 2 Hollanders, and an Austrian, a Russian, a Greek, a Portuguese, and an African. At first, the revolutionary commissioned Latin American privateers made their depredations upon and captures of the shipping, complements, and commerce of only the hostile mother countries, but gradually they became less particular and more lawless. A New York editorial of 1817 says that the privateer buccaneers "board and overhaul everything they meet and the character of the vessel is generally determined by the number of Spanish dollars that may be found on board." It is said that in 1817 a Chesapeake schooner of questionable status, under the command of Capt. James Chaytor, of Baltimore, brought to home ports half a million dollars worth of Spanish property and that one of Chaytor's prizes was a Spanish galleon from the Philippines, which he captured off Cadiz. In the fall of 1818, a Baltimorean wrote: "Privateers continue coming and going to this port as to their home. Two arrived this week, one of which landed at midnight eight dray loads of gold and silver." In March 1817, Captain Chaytor and another Chesapeake-owned "privateer pirate" brought corn and cochineal valued at $290,000 to Norfolk, Va. Capt. Joseph Almeda, of Baltimore, in the privateer *Congress,* operated about this time off the shore of Havana, Cuba, for weeks at a stretch, blockading the harbor and taking prizes—British as well as Spanish ships—almost within range of the guns of Morro Castle. To a few adventurous Americans, apparently, the War of 1812 with Britain did not end in the early part of 1815.

At first, the American public applauded the work of American privateers in the cause of freedom of the South American peoples and firmly believed that these scorpions of the sea were aiding the Spanish revolutionists who, as struggling patriots, were fighting for liberty. It was not long, however, before the public was disillusioned and the so-called South American-commissioned privateer stood revealed in her true colors. In 1818 the ship *Robert,* bound from Liverpool to New York, had a broadside poured into her in mid-ocean by a "patriot picaroon cruiser," who looted the vessel and her crew and passengers, did a great deal of damage to the ship, sails, and rigging, and abused and ill treated the persons aboard.

One publicized episode that operated to bring the truth and real nature of South American privateers home to the American people was that affecting the Spanish brig *Corrunes,* captured on March 21, 1818, by the Baltimore privateer *Puerrydon* (Capt. James Barnes). Ignoring the intricacies of the case (i.e., the putting of the prize crew on the captured brig, the separation of the brig from the privateer in a storm, the recapture of the brig by her own crew with the placing of the prize crew officers on a passing vessel, the grounding of the brig on Block Island, and the sale of the vessel's cargo by the crew), we find that the trial of the crew and of some of the traders before the United States court brought out some interesting facts and led to a memorable court decision. The owners and command of the privateer and both the owners and crew of the *Corrunes* were represented by consul at the trial. Captain Barnes said that he, as a citizen of Buenos Aires and commander of a lawful Buenos Aires cruiser, had captured the *Corrunes.* The crew members of the captured brig libeled the vessel on the ground that they had rescued her from Barnes, whom they denounced as a pirate. In a court of last resort, it was held, in spite of much perjury, that the naturalization of Barnes in Buenos Aires was "altogether in fraud of the laws of his own country" and that the owners of the privateer pirate were asking for the possession of a vessel that they had captured "in violation of the most solemn stipulation of a treaty and provision of a law of their own country and of which they had been dispossessed by their own associates in guilt." The court continued, "It is a melancholy truth, too well known to this court, that the instruments used in these predatory voyages carried on under the colors of the South American states are among the most abandoned and profligate of men."

Under the treaty referred to, the American privateers were pirates. How many vessels of this class were in operation, it is impossible to say. Aside from the European-owned vessels in this "black flag," buccaneering, lawless business, an incomplete list of American ships printed in the annals of the Fifteenth Congress gives the identity of twenty-eight vessels, most of them owned in Baltimore. As late as 1823, the newspaper TELESCOPE of Columbia, S. C., denounced that city as the "home port of a fleet of Spanish American pirates." These renegade American privateer buccaneers were at times lawless robbers and highwaymen of the seas who captured the ships of any nation when they could do so with safety.

American pirates established bases for their predatory operations in Texas (where Galveston now stands) and in Florida when these territories were under the Spanish Crown. The Texas pirate community was founded in 1816 by Jean Lafitte, a Louisiana smuggler, privateer, slaver, and pirate prior to and during the War of 1812; he used a site selected as a nautical "fence" by another pirate, Luis de Aury, who had moved, asserting that the location was too far from the United States. Lafitte advertised his established base for pirates as "an asylum to the armed vessels of the party of independence," i. e., for those who flouted all law. When Gen. James Long, the Texas filibusterer, visited Lafitte's settlement, he found that "doubloons were as plentiful as biscuit" and that the harbor was strewn with the wrecks of prizes. Lafitte went so far as to organize the "Republic of Texas" and to elect a governor, who appointed a justice to preside over an admiralty court provided for in the constitution of the republic. Privateers were commissioned by the new republic, and prizes were condemned; but when Lafitte was emboldened to send the condemned prizes to New Orleans, they were seized by the United States authorities, and some of the pirate crews were hanged. Lafitte was not driven out of his republican pirate settlement until 1821 and not until after he had operated for about five years in "unmolested prosperity"; moreover, when he moved, he was permitted to carry away without any interference all of his portable plunder.

While Florida was under weak Spanish rule, it furnished plenty of bases from which "privateers" and pirates could operate with but little danger of molestation. In 1817 a Scotch adventurer, who styled himself "Sir Gregor MacGregor," raised some money in southern ports, procured some Latin American privateering commissions, and got together a batch of unscrupulous followers. After seizing Amelia Island, he founded a pirate town where Fernandina now stands and sought to organize the "Republic of the Two Floridas." Shortly afterwards, Luis de Aury, a notorious Gulf pirate, landed and took possession, and MacGregor sailed away.

A trade to which many American and Spanish privateers (and later other types of fast vessels) degenerated was that of slavery, and for a while it was hard to differentiate between pirate and slave ships, for pirates captured slaves and sold them in slave markets as booty. If the pirate Luis de Aury in Florida had been content to leave slaves alone or merely to sell them to Georgia planters at a "fair price," he probably would not have been molested when he was, but Aury made two mistakes in handling slaves. He sold them cheaply to the owners of plantations and, by doing so, won the good will of Georgia planters and the enmity of Georgia slave dealers. However, when he encouraged Georgia slaves to run away from their masters and join him, the planters organized against him, and both slave owners and slave dealers took steps to drive him away from his Florida site, which was so near the southern border of the United States. Aury came to a swift end. In Texas, he had felt that he was too far from the United States; in Florida, he soon found that he was too near. The Georgians persuaded the Washington authorities to invade Spanish Florida, and Aury was driven out on December 23, 1817; but here again, a pirate and unscrupulous lawbreaker was permitted to carry away his plunder.

Congress, by the act of March 2, 1807 (and a vote of 63 to 49), prohibited the importation of slaves into the United States, and the penalties for violation of the law were confiscation of the vessel, fines, and imprisonment. During the four years ending December 31, 1807, 202 ships carrying 39,075 slaves entered the port of Charleston, S. C., alone, and of these vessels over one-third were British. Although most of the balance were reported as owned by South Carolina and Rhode Island interests, the bulk of the capital invested in these American slavers came from the middle and northern maritime states. Notwithstanding the 1807 law abolishing the importation of slaves, "bootlegging" and smuggling of slaves continued at an astonishing rate. In 1818 the law authorized emoluments to informers of the illegal traffic, a year later Congress empowered the president to use naval vessels to intercept slavers, and the act of May 1820 declared all Americans engaged in the trade to be pirates who should be hanged on conviction. Spears writes:

> One would be glad to believe that these laws were enacted because the American people had become sufficiently enlightened to appreciate the effects of the trade upon the human race, and especially upon the white people connected with it, but it is impossible to do so. The laws were enacted because of a passing wave of sentiment that had its origin in the work of the pirates. In a dim way, people saw a connection existed between some of the pirates and the slave trade. The slave trade was held responsible—and properly so—for some of the horrors of the piracies, and while Congress was legislating against the pirates, it was easy to get acts against the trade passed. Moreover, the desire of the slave owners to rid their states of free Negroes was just then giving strength to the movement for sending those Negroes to Africa—Liberia. In short, the prohibitory laws were the result of a sort of hysteria rather than of any real enlightenment of the American people.

Slavery, from early colonial days, caused an economic rather than a social line of demarcation between the North and the South. This feeling was so strong that there was opposition to Maine's being granted statehood in the Union, as Maine was known to have antislavery sentiments, unless another balancing state of opposite convictions (Missouri) was brought into the Union at the same time.

The profits in the slave trade, notwithstanding the wretched shipping arrangements and great losses by death in transportation, were very high. Slaves costing about $16 on the African coast sold for $350 "delivered alive and able to walk" in Cuba, and when smuggled into the United States they would fetch from $700 to $1,000 a head. Fast American ships were in demand as slavers as they were for certain other illegitimate trades. Swift privateers made ideal slavers, as they could avoid capture by patrolling government vessels. Later, ships were designed and built as slavers in Chesapeake and New York yards. It is said, "Builders always knew what trade the vessels were to enter and charged accordingly, and no builder—north or south—ever lost standing in society because he turned out ships for this purpose." Spears writes:

> The slave traders were well known, and they lived among the wealthiest society people of New York—at the Astor House, for instance, where they were in the habit of meeting to arrange the details of their voyages. Public documents show that the most respected merchants of the city were ready to go on the bonds of these slavers when bonds were required. A New Bedford whale ship owner who was convicted of fitting out one of his vessels for the trade was afterwards elected mayor of his city. Even after the Civil War was begun, a United States district attorney—a man appointed by Lincoln—was seen dining at the leading New York restaurant with a slaver whom he should have been prosecuting at that moment; for while the two ate together, the slaver talked about a slave voyage that he intended to make.

For some time, the Stars and Stripes was the only flag that could protect a slaver from inspection off the African coast, and when United States warships were compelled to capture American ships engaged in the slave trade, the guilty officers—if American citizens—seemed to find it easy to escape. It is surprising but true that these generally known conditions "roused not a tremor of indignation in the breasts of the American people," except in a few branded as "fanatics."

Piracy and the slave trade were often allied and badly mixed up during the first decades of the nineteenth century as were privateering and piracy following the close of the War of 1812. The legitimate Spanish traders in the West Indies became so incensed over the depredations of "American buccaneers" that, in some sections, they sought to organize a "boycott" against the purchase of American goods and products brought to the islands in ships of the United States. That this Spanish resentment against America was real and the boycott effective to a pronounced degree is proven by the fact that, during a period of a generally increasing trade, the volume of export business handled by United States ships in the Spanish West Indian trade dropped from $7,084,000 in the fiscal year 1816-1817 to $5,985,000 in 1819-1820—a reduction of $1,099,000 per year during the three-year period. But the actions of American privateer pirates encouraged a naturally piratical element in the Spanish-owned islands in the Caribbean to acts of lawlessness and led to extensive and devilish reprisals, fostered and supported by the island governments and by popular opinion. The Spanish and particularly the Cuban merchants found good profit in handling pirate loot, so they encouraged piracy in the Caribbean and justified their practice as reprisal for the participation of Baltimore privateersmen in the raids on Spanish shipping. J. R. Spears says:

> Within a short time after the American-owned cruisers under the Spanish American flags began ravaging Spanish commerce, the Spanish retaliated by making reprisals after the fashion common in the sixteenth century. Encouraged by the island authorities, the shipowners of Cuba fitted out armed vessels to prey upon American commerce. The Cuban pirates were in no case commissioned, but the Porto Rico authorities gave commissions to half a dozen or more. The Cuban pirates, however, worked openly. Regla, a village on the east side of Havana Bay, was the chief pirate port. In November 1821, eleven Spanish pirate vessels were cruising between Cape Maisi and Santiago, five were working as a squadron at Cape San Antonio, and at least five more were cruising on the north coast east of Mantanzas. Between Havana and Mantanzas was a flotilla of small boats, the crews of which kept constant watch for vessels becalmed in the offing. All such vessels were attacked as soon as night came. Another gang of small-boat pirates operated at Cape Cruz, where they lived in the caves for which the region is noted. . . . The markets of Cuba were frequently flooded with merchandise taken by the pirates, and a number of schooners plied between Cape San Antonio and Regla to carry supplies to the pirate flotilla at work there and bring back captured goods.

Piratical seizures and visitations in the Caribbean and its bottleneck entrances began to be common about 1818 and 1819, which followed the "fag end of privateering" and saw outright and devilish piracy in the ascendancy. Henceforth the Spanish Caribbean pirates were cruel and lustful, and not infrequently they tortured and killed captured ships' officers and sailors. At this time, a great amount of American shipping attracted by sugar was making its way to Cuban ports and down past the Florida coast to New Orleans and Gulf of Mexico ports. As Albion and Pope say, "While these cargoes may not have equaled in value the textiles and hardware reaching New York from Liverpool, the southern trade was carried on in little brigs and schooners; consequently the number of vessels and sailors exposed to the pirate menace was greater than on any other run"—and the little vessels were very vulnerable to attack. The Spanish Caribbean pirates were primarily after money, and the many known cases of torture arose from their efforts to learn if and where such treasure was hidden aboard. Valuable cargoes of relatively low bulk that they could handle and dispose of through "fences" in Cuba were welcomed, but such a commodity as lumber was useless as loot and was at times burned in disgust. The search for hard money on a seized vessel led to the maltreatment of crews, and as the risk of piracy and torture increased, the buccaneers around 1822 passed on to deliberate murder, for "dead men tell no tales." The merchants of Portland, Maine, in a memorial of 1824 complaining of the activities of the Spanish Caribbean pirates, asserted: "At first they were content to plunder and maltreat the crews of our vessels, without proceeding to actual murder. Of late, however, they have not stopped short of the most brutal and inhuman outrages. In some instances, whole crews have fallen victims to their barbarous and unrelentless fury."

The brig *Aurilla* of Gloucester, Mass., bound from Baltimore to New Orleans, was boarded by two pirate schooners in the Florida Strait on May 16, 1822. The officers and men of the brig were confined below, brought up on deck one at a time, and slashed, beaten, or murdered. By this procedure, the pirates gained information to give them $50,000 in money and merchandise. A passenger suspected of concealing money was stabbed, hoisted to the yard arm, and dumped into the sea. About a month later, the schooner *Mary,* bound from Philadelphia to New Orleans, was taken by pirates off the southern coast of Florida after her guns had sunk one boat-load. Two of the crew were killed in the assault, and a passenger, who was lashed to the mast when the schooner was scuttled, was the sole survivor. He was saved by a passing ship that sensed the plight of the schooner when a fortuitous squall drove the pirates hurriedly back to their vessel. About this time, many vessels sailed from East Coast U.S.A. ports for Caribbean and Gulf ports and went missing; many of them, with all persons aboard, were most probably victims of cutthroat and brutal Spanish American pirates. It is known that these unscrupulous and inhuman buccaneers were so passionate and desperate for gain, while evading seizure, that they confiscated everything of value on their captures, abused and tortured the men to make them talk, raped the women, and then sank the seized vessels with all hands. Prior to the War of the Revolution, the American colonists and the British severely condemned the French of the Canadian provinces (Acadia—New France) for manning with savages privateers that were virtually pirates. But the Indians who formed the crews of these French-owned craft were Micmacs and Malisites, and such aborigines were far less avaricious and cruel than the vicious, plundering men aboard a Spanish American privateer pirate, who thought less of human life than did the savages of the North. The extent of the depredations of these bloodthirsty and avaricious Caribbean Sea pirates is not completely known, but Niles REGISTER of May 24, 1823, stated that 3,002 piratical assaults had been made upon merchant ships in the West Indies since the end of the War of 1812 (early 1815).

The public sympathy of the United States for the Spanish American insurgents handicapped the Washington administration in coping with the Caribbean Sea pirates—both Spanish and American. In 1819 the United States Government dispatched Capt. Oliver H. Perry to the Caribbean to endeavor to find which were real Spanish American privateers and which were pirates operating in those waters, but the hero of Lake Erie died of fever with his task uncompleted. On May 15, 1820, Congress authorized the building of five swift war schooners to be used for patrol work in pirate-infested waters. Ships of the navy were later ordered to the region, some small Chesapeake Bay schooners were acquired, and several relatively powerful oar- and sail-propelled boats were built to be used to destroy the pirates operating in small boats around western Cuba. In 1821 the fast *Enterprise* of the United States Navy captured three out of four Spanish pirate ships that were caught in the act of plundering American merchantmen off the Cuban coast, and forty of the cutthroat crews of the pirate ships were sent to Charleston, S. C., for trial and execution. In 1822 the United States pirate-chasing squadron was reinforced by the 38-gun frigate *Macedonian,* the 36-gun frigate *Congress,* and several corvettes.

In 1823 the West Indian squadron was further strengthened when Commodore Porter took seventeen naval vessels to the Caribbean, with its bottlenecks and pirate-infested waters, "for the purpose of repressing piracy and affording effectual protection to the citizens and commerce of the United States." Porter's flagship was the *Sea Gull,* the first steam war vessel to enter the naval service (she had been built as a Connecticut River steamboat), and in the squadron were nine handy and speedy well-armed schooners and five 20-oared barges that could follow the pirates in shallow water to their lairs. The Spanish colonial governors, however, sharply resented the "Yankee interference" with the profitable buccaneer business of their friends, the "brethren of the coast." In Puerto Rico, a Spanish fort fired on the U.S.S. *Fox,* killing her commander; but the United States Navy, finally receiving some grudgingly given co-operation from the governments ashore and from the navies of other powers, relentlessly hunted down the pirates and finally succeeded in exterminating them. At all times, it was exceedingly difficult to draw the line between a privateer and a pirate operating in West Indian waters.

It was not until the independence of the Spanish American republics was acknowledged and the privateers of these nations lost their commissions that piracy could be brought to an end in the West Indies. Piracy in the Caribbean was well nigh smothered by the end of 1825, but for years it was necessary to maintain a strong United States fleet of light, fast and handy patrol vessels in those waters. The crushing and exterminating of West Indian pirates was of vast benefit to the United States merchant marine, but in the ultimate proved to be an expensive business both in money and in human lives, for in addition to casualties in action, the yellow fever took a heavy toll of the American forces. Once again, George Washington's maxim, "To an active, external commerce, the protection of a naval force is indispensable," was proved to be correct.

Until the early thirties, the black flag was occasionally encountered flying from Spanish American vessels. One of the last acts of the final chapter of Caribbean piracy was the hanging in New York on April 22, 1831, of a notorious Cuban pirate who proved to be not a Spaniard or a Latin American but Charles Gibbs, originally of a good Rhode Island family. He had drifted into piracy and become the leader of a gang of ruffians that operated a squadron in Cuban waters. Gibbs acknowledged that out of some forty vessels captured between 1818 and 1824, half of them suffered the loss of their crews by murder. We are told: "The public was incredulous at Gibbs' fantastic confessions until they were corroborated by Capt. Kearney, whose naval vessel had interrupted Gibbs' gang in the act of despoiling three vessels at Cape San Antonio in 1821."

It would seem that the last United States vessel to suffer at the hands of the Spanish American buccaneers was the brig *Mexican* of 227 tons, owned by Joseph Peabody, of Salem, Mass., which was under the command of Capt. John G. Butman. The *Mexican,* with a crew of thirteen men, cleared from Salem on August 29, 1832, for Rio de Janeiro with some saltpeter, tea, etc., aboard and $20,000 in specie to purchase a return cargo. On September 20, she was captured by the 150-ton Baltimore schooner *Panda,* a pirate slaver hailing from Havana, under the command of Capt. Pedro Gibert and armed with a long 32-pounder mounted on a swivel amidships and four brass guns on the broadsides. Gibert confiscated the money and all portable valuables aboard the *Mexican,* fastened the American crew in the forecastle of the brig, and set the vessel afire so as to leave no visible trace of her or her complement. Fortunately, the *Panda* rapidly sailed away from the scene; the fire was slow to take hold, and the impressed crew by strenuous, intelligent work got free and was successful in extinguishing the blaze before it became out of control. The *Mexican* returned to Salem and reached port on October 12, 1832. The *Panda,* which had been well described by the Americans, was later caught by the British off the coast of Africa, where she had gone for a cargo of slaves. The men aboard the pirate slaver deserted the schooner, and after a prize crew had been put aboard by the British war brig *Curlew,* the vessel was mysteriously blown up. Four Britishers were killed. Sixteen of the pirates that had been aboard the *Panda* were later apprehended, taken to England, and finally sent to Salem and Boston for trial, where in due course Capt. Pedro Gibert and four others died by hanging for their crime on the high seas.

It is ironical that the United States, which suffered much from the depredations of the Barbary and Algerine pirates of northern Africa and paid tribute to and ultimately warred with them, should have been responsible through a continuation of privateering, following the War of 1812, for the development of piracy in the Caribbean that grew to be as cruel, vicious, and lawless as that of the Mediterranean and of much greater volume and seriousness to the well-being and prosperity of the American merchant marine. Albion and Pope, in SEA LANES IN WARTIME, have said:

> The threat to our trade from the Barbary pirates had been a minor consideration, for less than one-tenth of our shipping used the Mediterranean; but probably more of our vessels were coming and going past Cuban waters than anywhere else. In contrast to the twenty-odd American vessels that fell into Barbary hands in the course of thirty years, it has been estimated that some five hundred vessels, with a property loss of twenty millions, were seized by the West Indian pirates, while many more were stopped and molested.

The Young Republic's Vital Interest in and Dependence upon Deep-Sea Merchant Sail

Following 1789, the underlying policy of the young republic was in effect one calculated to develop American shipbuilding, commerce, and shipping, and excepting for the results of such deplorable and weak administration errors as the Jefferson Long Embargo of December 22, 1807, and the inevitable destructive effect of the War of 1812, the United States merchant marine grew steadily with the years in vigor and both national and international importance. In a world of national and empire protection of deep-sea trade (of taboos, exclusions, restrictions, and discriminations—all of which were inspired by the selfishness of the great powers with a measure of jealousy and fear), it was to the public interest of the United States to urge free trade and free navigation and give strong support to its shipbuilding industry, its shipping and carrying trade, and those export industries in which the young nation possessed a comparative advantage. John G. B. Hutchins, in THE AMERICAN MARITIME INDUSTRIES AND PUBLIC POLICY—1789-1914, says that during the period 1789-1830 the country was primarily a producer of raw materials and foodstuffs, which it was necessary to exchange for the manufactured consumer and capital goods of the world, especially those of Great Britain. Hutchins further states:

> Cheap transportation, frequent service, and flexibility in the conduct of trade were, therefore, of great importance if a maximum advantage from the division of labor was to be secured. That it be secured was essential, for the iron ore of Minnesota, the copper of Montana, Arizona, and Utah and the coal of western Pennsylvania, Ohio, and Kentucky and many other industrial resources still lay in an

undeveloped wilderness, and no adequate transportation system existed by means of which an industrial civilization could be created. American manufacturing was not, therefore, a very lusty infant and in most cases responded badly to protective duties. Furthermore, the country was importing capital and consumer goods from Europe at a rapid rate in order to build up industry, agriculture, and communications; consequently, the promotion of such a major export industry as shipping notably facilitated the importation of needed products and the payment of interest on loans.

The United States was the world's most naturally favored, cheapest, and best shipbuilding nation and continued to be so from the birth of the republic throughout the entire era of wood merchant sail. Moreover, America led the world by a wide margin in the sailing and management of ships in trade on the Seven Seas, and it was generally held that "given a fair field without discrimination and restriction, the United States could become the leading carrier of the world." Again, the young republic had practically no navy, and as the merchant marine was a "major element of American sea power," the state "had every reason to foster the maritime industries." Following the Revolution and the winning of independence for the American colonies, the British Government imposed the restrictive mercantilistic navigation laws with full force on the United States, and American shipping, deprived of participation in British Empire trade throughout the world, was hard hit. France followed with its navigation act of 1793, which gave a monopoly of the French coastwise and colonial carrying trades to French ships and restricted the foreign trade to vessels of France and the country of destination. Navigation monopolies designed to build up the merchant marines of other nations operated against the interest of the United States, caused confusion, practically eliminated competition, and materially added to the costs of transportation. Whereas the young American nation was vigorously opposed to all ocean-shipping restrictions, it was compelled to retaliate and resort to counterattacks by penalizing foreign shipping and favoring American bottoms. This fight resulted in navigation monopolies and restrictions being imposed by rival maritime nations located at opposite ends of what were naturally destined to be the "major sea-borne trade routes."

Jefferson expressed the "fighting, free navigation philosophy" of the United States Government in 1791 as follows:

> Were the ocean, which is the common property of all, open to the industry of all, so that every person and vessel should be free to take employment wherever it could be found, the United States would certainly not set the example of appropriating to themselves exclusively any portion of the common stock of occupation. They would rely on the enterprise and activity of their citizens for a due participation of the benefits of the seafaring business and for keeping the marine class of citizens equal to their object. But if particular nations grasp at undue shares and, more especially, if they seize on the means of the United States to convert them into an aliment of their own strength and withdraw them entirely from the support of those to whom they belong, defensive and protecting measures become necessary on the part of the nation whose marine resources are thus invaded or it will be disarmed of its defense, its productions will be at the mercy of the nation who has possessed itself exclusively of the means of carrying them, and its politics may be influenced by those who command its commerce.

During the European wars, the United States was the leading neutral carrier, and its merchant marine grew in power notwithstanding discriminations, many of which were capitalized in its interest because of the actions and the attitude of belligerents and made to operate in its favor. During the years 1805-1830 inclusive (excluding the embargo year, the period of the War of 1812, and the post-war years of 1815-1819), the percentage of United States tonnage to the total tonnage engaged in foreign trade entering American ports was extremely high. The following statement gives comparatively for each year during the twenty-seven-year period 1789-1815 inclusive such statistics as are available showing the total tonnage of the United States merchant marine and that of vessels registered for foreign trade; the tons of shipping engaged in foreign trade entered at U.S.A. ports, both domestic and foreign owned, with the percentage that the United States tonnage bears to the total; the value of foreign commerce and the percentage of exports, imports, and total foreign commerce carried in American bottoms; and the tonnage of vessels built and documented in the United States:

Year Ending Dec. 31	Merchant Marine Tonnage: Registered Foreign Trade	Merchant Marine Tonnage: Total	Tons of Shipping Entered—Foreign Trade—U.S.A. Ports: U.S.A. Vessels	Tons of Shipping Entered—Foreign Trade—U.S.A. Ports: Foreign Vessels	Tons of Shipping Entered—Foreign Trade—U.S.A. Ports: Total	Percentage U.S.A. Tonnage of Total	Value of Total Foreign Commerce in Dollars	Percentage of Total Foreign Commerce Carried in American Vessels: Exports	Percentage of Total Foreign Commerce Carried in American Vessels: Imports	Percentage of Total Foreign Commerce Carried in American Vessels: Combined Exports and Imports	Tonnage of Vessels Built and Documented in the U.S. during the Year
	Tons	Tons	Tons	Tons	Tons						Tons
1789	123,893	201,562	124,000	110,000	234,000	53.0	—	30.0	17.5	23.6	—
1790	346,254	478,377	355,000	251,000	606,000	58.6	—	40.0	41.0	40.5	—
1791	363,110	502,146	364,000	241,000	605,000	60.2	48,212,041	52.0	58.0	55.9	—
1792	411,438	564,457	415,000	244,000	659,000	63.0	52,253,098	61.0	67.0	64.0	—
1793	367,734	520,764	448,000	164,000	612,000	73.2	57,209,572	77.0	82.0	79.5	—
1794	438,863	628,618	526,000	83,000	609,000	86.4	67,643,725	86.0	91.0	88.5	—
1795	529,471	747,965	580,000	57,000	637,000	91.0	117,746,140	88.0	92.0	90.0	—
1796	576,733	831,900	675,000	47,000	722,000	93.5	140,010,789	90.0	94.0	92.0	—
1797	597,777	876,912	608,000	77,000	685,000	88.8	126,674,116	88.0	92.0	90.0	56,679
1798	603,376	898,328	522,000	86,000	608,000	85.8	129,879,111	87.0	91.0	89.0	49,435
1799	657,142	939,408	626,000	110,000	736,000	85.0	157,734,670	87.0	90.0	88.5	77,921
1800	667,107	972,492	644,000	124,000	768,000	83.8	162,224,548	87.0	91.0	89.0	106,261
1801	630,558	947,576	799,000	158,000	957,000	83.5	204,384,024	87.0	91.0	89.0	124,755
1802	557,760	892,106	799,000	147,000	946,000	84.4	148,290,477	85.0	88.0	86.5	—
1803	585,910	949,172	787,000	147,000	934,000	84.3	120,466,699	83.0	86.0	84.5	88,448
1804	660,514	1,042,404	1,133,000	164,000	1,297,000	87.4	162,699,074	86.0	91.0	88.5	103,753
1805	744,224	1,140,367	922,000	88,000	1,010,000	91.3	216,166,021	89.0	93.0	91.0	128,507
1806	798,507	1,208,737	958,000	91,000	1,049,000	91.3	230,946,963	89.0	93.0	91.0	126,093
1807	840,163	1,268,548	1,020,000	87,000	1,107,000	92.1	246,843,150	90.0	94.0	92.0	99,783
1808	765,252	1,242,595	492,000	48,000	540,000	91.1	79,420,960	88.0	93.0	90.5	81,755
1809	906,855	1,350,282	576,000	99,000	675,000	85.3	111,603,233	84.0	88.0	86.0	91,397
1810	981,019	1,424,783	876,000	80,000	956,000	91.6	152,157,970	90.0	93.0	91.5	127,575
1811	763,607	1,232,502	922,000	33,000	955,000	96.6	114,716,832	86.0	90.0	88.0	146,691
1812	758,636	1,269,997	656,000	47,000	703,000	93.3	115,557,236	80.0	85.0	82.5	85,148
1813	672,700	1,166,628	234,000	112,000	346,000	67.6	49,861,017	65.0	71.0	68.0	32,583
1814	674,633	1,159,209	59,000	48,000	107,000	55.1	19,892,441	51.0	58.0	54.5	29,751
1815	854,295	1,368,128	695,000	216,000	911,000	76.3	165,599,027	71.0	77.0	74.0	155,579

The total tons of shipping entered and cleared in foreign trade at U.S.A. ports, with the percentage that the American-owned tonnage bears to the total, for each of the years 1821-1830 inclusive are herein set forth:

Year	Tons of Shipping Entered and Cleared—Foreign Trade U.S.A. Ports: United States Ships	Foreign Ships	Total	Percentage: United States Tonnage of Total	Percentage: Of Total Value of Exports and Imports Carried in U.S. Ships
1821	1,570,000	165,000	1,735,000	90.5	88.7
1822	1,592,000	207,000	1,799,000	88.4	88.4
1823	1,586,000	239,000	1,825,000	86.9	89.9
1824	1,769,000	205,000	1,974,000	89.6	91.2
1825	1,841,000	188,000	2,029,000	90.7	92.3
1826	1,895,000	205,000	2,100,000	90.2	92.5
1827	1,898,000	269,000	2,167,000	87.6	90.9
1828	1,766,000	301,000	2,067,000	85.4	88.9
1829	1,818,000	264,000	2,082,000	87.3	89.5
1830	1,939,000	265,000	2,204,000	88.0	89.8

The tonnage of shipping entered at U.S.A. ports and the percentage that the domestic-owned tonnage bears to the total are herein set forth for each of the post-war years 1816-1820 inclusive; also the value of exports and imports, with the percentage that the exports bear to total foreign commerce:

Year Ending Dec. 31	Tons of Shipping Entered U.S.A. Ports: U.S.A. Vessels	Foreign Vessels	Total	Percentage U.S.A. of Total	Value of Foreign Commerce: Exports	Imports	Total	Percentage Exports of Total
	Tons	*Tons*	*Tons*					
1816	877,000	259,000	1,136,000	77.2	$81,000,000	$147,000,000	$228,000,000	35.5
1817	780,000	212,000	992,000	78.6	87,000,000	99,000,000	186,000,000	46.8
1818	755,000	161,000	916,000	82.4	93,000,000	121,000,000	214,000,000	43.4
1819	784,000	86,000	870,000	90.1	70,000,000	87,000,000	157,000,000	44.6
1820	801,000	79,000	880,000	91.0	69,000,000	74,000,000	143,000,000	48.2

The War of 1812, so closely following the depressive effects of the Jefferson Long Embargo (and the substitution of the nonintercourse law of March 1, 1809), was disastrous to American shipping. Merchant sail registered for foreign trade, which averaged 943,937 tons at the close of each of the two years 1809 and 1810 before the trade restrictions that preceded the war were heavily felt, was down to an average of only 586,273 tons at the end of the five years 1818-1822 inclusive—following the striking off from the register in 1818 of all vessels supposed by the collectors to have been lost at sea or captured by the enemy. It is surprising that whereas the war closed in early 1815 (following the Peace Treaty of Ghent, signed December 24, 1814), it was over three years later before the government took steps to reflect the result of the war upon the official registry records. The tonnage of American vessels entering United States ports dropped from 921,750 gross tons in 1811 to 58,756 tons in 1814, and the volume of 1811 was not again equaled until the boom year of 1826, when the peak of tonnage entries (942,206 gross tons) was reached. Simultaneously with the declaration of peace between the United States and Britain, the shipping boom of 1815-1817 got under way, and the demand for deep-sea tonnage was great "because of the poor harvests abroad, the revival of commerce, and restocking of markets." The American shipping entering U.S.A. ports in these three boom years averaged 784,000 tons per annum, or 138,000 tons per year below the corresponding tonnage of 1811 and 349,000 tons below that of 1804. Whereas both Britain and the United States lost large numbers of ships to the enemy during the war, the effect of these captures was felt much more in America than in Britain; for aside from Britain's possessing a much larger merchant marine, making the percentage of losses much less than that of the United States, practically all of the American prizes taken by the British were used by them in trade and were additions to their merchant marine. Only a relatively small percentage of the many British vessels seized by Americans reached United States ports and were later operated under the Stars and Stripes.

The Yankees—the First and Most Resourceful Carriers of the World

In 1817, under James Monroe (America's fifth president), the United States closed its coastwise trade to all foreign flags and to all foreign-built vessels regardless of ownership. By 1820, in spite of the repressive influence of the Embargo Act and the War of 1812, the shipping tonnage of the United States had reached 1,280,167 tons, and nearly half of this (45.6 per cent) was engaged in foreign trade. Between 1820 and 1830, about ninety per cent of its ocean-carrying trade was controlled by United States vessels. No other country had ever made such marvelously rapid progress, and American ships were seen and generally admired in every port of the world. The United States was definitely disputing Britain's marine supremacy. George W. Dalzell, in THE FLIGHT FROM THE FLAG, says:

When the United States began to function under the Constitution in 1789, there were no national ships. Eight years later, when Washington delivered his warning against entangling foreign alliances, the nation possessed the largest merchant fleet afloat relative to the volume of its commerce. Twenty years after that, as the result of the Napoleonic Wars, including the War of 1812, American shipping, like that of Great Britain, had been reduced to low estate by privateering; yet it was immediately restored. Notwithstanding the competition of the greatly augmented British fleet after Waterloo, our ships were carrying about 70 per cent of our commerce during the three decades preceding the Civil War.

The figure given of 70 per cent positively understates the facts, for the percentage of combined U.S. exports and imports carried in American bottoms from the year 1827 (before reciprocity) to 1858 (before the conditions that led to the Civil War were noticeable in trade) varied from a high of 90.9 per cent in 1827 to a low of 69.5 per cent in 1853 and stood at 73.7 per cent for the year 1858.

Until the War of the Revolution, American vessels were fundamentally British in design and construction. During the rebellion, Americans felt the need of faster ships, for their only defense against the well-armed British vessels that dotted the ocean lay in speed and handiness to avoid capture or destruction. A great measure of assistance in the design of a faster type of ship than built and used by the British came from the French, and Americans first copied the lines of relatively speedy French craft and then sought to improve upon them in their building of armed merchantmen and privateers.

Jean P. Brissot de Warville, writing in 1794, eleven years after the close of the War of the American Revolution, said:

The nature of things invites the Americans to become the first carriers of the world. They build ships at two-thirds the expense that they are built at in Europe: they navigate with less seamen and at less expense, although they nourish their seamen better: they navigate with more safety, with more cleanliness, and with more intelligence, because the spirit of equality, which reigns at home, attends them likewise at sea. Nothing stimulates men to be good sailors like the hope of becoming captains.

The American Revolution, with its fight for liberty and a democratic republican form of government, gave opportunity and encouragement to the individual and laid the foundation on which a strong merchant marine could be built. Discipline at sea was always deemed the prime essential, but with it went education, co-operation, and humanity coupled with a demand for and a great willingness to work. The French Revolution, with its outstanding political and social upheaval and an undue emphasis placed on "Equality and Fraternity," virtually ruined discipline at sea and so tied the hands and regulated the acts of the "citizen captains" and "citizen officers" that efficiency was impaired, both the naval and merchant marine of France became decadent, and lawless piracy was greatly encouraged. The American Revolution created a powerful maritime rival for Britain, and the new nation successfully challenged England's command of the seas as far as peaceful commerce was concerned. At the end of the eighteenth century, the French Revolution removed from the path of Britain for all time its greatest naval and mercantile rival for domination of the Seven Seas.

Following the close of the War of 1812 with Britain (which finally secured the liberty and independence of the young American republic) and the "jelly-fish peace" signed at Ghent, December 24, 1814 (which settled none of the issues that had resulted in two and a half years of hostilities), the United States was obligated to repeal its tariff laws of 1789 and 1792, and little or nothing that was tangible was obtained in return. Yet ignorant politicians and destructive commissioners, with their lack of marine-mindedness, appreciation of ships and sea trade, and a sense of value and proportion, could not permanently retard the advance of the United States as a sea power, with its aggressive youth, resourceful energy, and indomitable courage on the one hand and its wooden ships and iron men on the other.

From early days, the English, like the Dutch, sailed their ships comfortably and safely. The prime object was to transport cargo without damage and passengers with the minimum amount of physical discomfort. To play safe at all times, take few, if any, risks, and avoid damage to hull, spars, rigging and sails, British captains took in canvas at night and sailed their ships cautiously with but little regard for speed and length of passage. Americans, from early colonial days, developed a different policy in the operation of ships, even when their vessels were of the slow British type. If they traded to the West Indies, most of their ventures were illegitimate in the eyes of foreign powers, and they had to avoid both warships and the pirates that at times infested the seas. They soon learned to carry sail, drive their vessels, take chances, and make speed. During the Revolution, speed and daredevil sailing alone saved them from the British. By the time of the War of 1812, Americans were building relatively fast merchantmen and privateers—as well modeled, sparred, and canvased as the French craft—and had learned a technique in sailing that placed them in a class by themselves, with no rivals to challenge their supremacy.

When the demand for clipper ships developed, the United States was in the enviable position of being able to design and build better, faster, and cheaper wooden ships than any other country, and it had men trained to sail them faster and get more out of a ship than the officers and crews sailing under any foreign flag. The Europeans called American sailors "crazy Yankees," and they were astounded at the audacious and seemingly reckless way in which the Yankees carried sail, made fast passages, delivered cargoes in good condition, demanded and obtained higher freight rates for reduced time of delivery, and made four or even five round voyages bringing in relatively "huge profits" while foreign ships made only three voyages. Not only did British and other foreign ships handle, proportionately, less freight and receive as the years rolled by less and less return per ton carried but also the Americans handled the cream of the trade and left the skim milk for the slower foreigners.

American shirt-sleeve diplomats and pseudo-statesmen have always been a "thorn in the flesh" of the builders, owners, and operators of American ships and the American mercantile marine. In 1828, Congress enacted a law throwing the United States's indirect trade open to the world, and, as usual, what was claimed to be "reciprocity" greatly favored the foreigner—which, in maritime matters, meant Britain. The result was that in two years the deep-water shipping of the United States declined 220,345 tons, or thirty per cent. It was not until 1849 that Britain came forward with a real reciprocal act and permitted American ships to carry cargoes from the British West Indies to the British Isles. However, it has been well said: "Congress could not legislate out of existence the forests that enabled us to build ships more cheaply than the foreigners to whom it had opened our commerce. Nor could shirt-sleeve diplomacy barter away the genius of our seagoing population, of our native ability to operate more economically than our competitors. Though American officers and seamen received higher wages, their skill [coupled with the willingness, ability, and spirit of the sailors] enabled them to sail with smaller crews. It also resulted in American ships making five voyages to the foreigner's three or four. Our speed commanded better freight rates. American ships, being safer risks, enjoyed lower insurance rates."

The shipyards of the northeast coast of the United States built fast ships that were good carriers and of superior construction; they excelled everything else on the Seven Seas. Moreover, these Yankee ships were operated by a type of command new to the marine world. "Where a foreigner spread a running foot of dirty hemp or flaxen canvas, a Yankee spread a square yard of snowy white duck. Where a Britisher mounted nothing higher than topgallant sails on stumpy, loglike masts, an American stabbed at the stars with lances pennoned of skysails and moonsails. Where the Britisher clewed up and furled, we hung on or loosed still another 'kite' and sheeted it home to 'Billy Taylor.' Where each day at sunset they all snugged down to hardly more than a rag, we drove on—the night to us was as the day to them. Powerful navies protected them; speed was our sole armament against attack."

De Tocqueville, as a result of his travels by sea and following a visit to the United States, wrote in DEMOCRACY IN AMERICA (1835):

Nations, as well as men, almost always betray the most prominent features of their future destiny in their earliest years. When I contemplate the ardor with which the Anglo-Americans prosecute commercial enterprise, the advantages which befriend them, and the success of their undertaking, I cannot refrain from believing that they will one day become the first maritime power of the globe. They are born to rule the seas, as the Romans were to conquer the world.

History tells us that during the period from 1830 to 1836 the American merchant marine increased so rapidly in relation to the British merchant fleet that Britain was worried, and parliamentary investigations were the order of the day. W. S. Lindsay, a Britisher and the author of HISTORY OF MERCHANT SHIPPING, wrote:

During the first half of this century [the nineteenth] the masters of American vessels were, as a rule, greatly superior to those who held similar positions in English ships, arising in some measure from the limited education of the latter, which was not sufficient to qualify them for the higher grades of the merchant service. American shipowners required of their masters not merely a knowledge of navigation and seamanship, but of commercial pursuits, the nature of exchange, the art of correspondence and a sufficient knowledge of business to qualify them to represent the interests of their employers to advantage abroad.

On all such matters, it was admitted that the commanders of British ships were at this period "greatly inferior to the commanders of the United States vessels." Before the owners and commands of British ships were jarred out of their complacency by "Yankee upstart" competition, they were more concerned with dry decks, avoiding damage, and "taking no chances" than they were with speed. They claimed that their prime thought was to transport a cargo safely, deliver it in good condition, and give passengers a comfortable voyage; they gave great consideration to the cost of repairs, and speed was deemed of relatively small importance. "London merchants," we are told, "had a comfortable conviction that five knots was fast enough." Yankee skippers generally referred to the habit of British and all foreign ships as "being put to bed at night and tucked in safe," and it used to be said by New England shipmasters, "British ships knock their heads three times against a wave and then fall off to leeward and sail around it." It is no wonder that driving, "devil-may-care" Yankee captains, who operated their ships "to get there as quickly as possible," shocked the super-conservative and thoroughly self-satisfied commands and owners of British vessels.

In 1834 the underwriters at Lloyd's and the more progressive element among British shipowners founded Lloyd's Register of Shipping to provide for the proper survey and classification of the merchant ships of Britain. Three years later, this important step in a much-needed reform was followed by the appointment of a committee by the British Parliament to investigate the general condition of shipping engaged in foreign trade. Part of this committee's report is quoted herewith:

The American ships frequenting ports of England are stated by several witnesses to be superior to those of a similar class amongst the ships of Great Britain, the commanders and officers being generally considered to be more competent as seamen and navigators, and more uniformly persons of education, than the commanders and officers of British ships of a similar size and class trading from England to America, while the seamen of the United States are considered to be more carefully selected, and more efficient. American ships sailing from Liverpool to New York have a preference over English vessels sailing to the same port, both as to freight and the rate of insurance; and, the higher wages being given, their whole equipment is maintained in a higher state of perfection, so that fewer losses occur; and as the American shipping having increased of late years in the proportion to 12¾% per annum, while the British shipping has increased within the same period only 1½% per annum [a ratio of increase of 8½ to 1], the constantly increasing demand for seamen by the rapidly growing maritime commerce of the whole world, the numbers cut off by shipwrecks, and the temptations offered by the superior wages of American vessels, cause a large number of British seamen every year to leave the service of their own country, and to embark in that of the United States; and these comprising chiefly the most skillful and competent of our mariners, produce the double effect of improving the efficiency of the American crews, and in the same ratio diminishing the efficiency of the British merchant service.

British reports in the thirties emphasize the superiority of both officers and men on American ships trading between England and the United States; but whereas outstanding American masters and officers operated transatlantic packets to the end of sail, American sailors shunned the Atlantic "ferry" from the early forties, when the vicious and lawless Liverpool "packet rats" were attracted to that service.

In 1843 a circular was issued from the foreign office to all British consuls requesting information on the conduct and character of British shipmasters, especially with regard to the "incompetence of British shipmasters to manage their vessels and crews, whether arising from deficiency of knowledge in practical navigation and seamanship, or of moral character, particularly want of sobriety." The consular reports revealed a startling condition of affairs that demanded immediate attention and led to the establishment in 1847 of the Marine Department of the Board of Trade, with authority to supervise maritime affairs.

Britain changed its policy and marine laws in the middle of the nineteenth century. Thereafter, it used American ships, copied them, and tried to follow American designers and builders in the construction of ships and American shipmasters in the handling of them; but neither Britain nor any other country succeeded in competing with the United States in the production of wood ships—as to either quality or cost. In most of the forties and fifties, it was "Columbia" and not "Britannia" that "ruled the waves" as far as merchant shipping was concerned. America led in quality and in the total tonnage of sizable units of modern sail; its ships were supreme on all trade routes on the Seven Seas, but its reign was brief. During the years of political turmoil and Civil War in America, with the refusal of the government to grant subsidies so that American owners could operate steamships in competition with the foreigners, Britain regained its command of the seas by the use of iron and steam and through heavy government subsidies. It is apparent that the United States in the late fifties, following the depression of 1855 and the commercial panic of 1857 and with the Civil War about to break, became definitely "land-minded" rather than "ocean-minded" and thereafter considered the development of domestic industries, railroads, public utilities, and the opening of the Great West far more important than the existence of a merchant marine and the ownership of floating bottoms operating in foreign trade.

An Era of So-called "Reciprocity" on the Seas—1815-1830

The period of 1815-1830 in the history of the American merchant marine and associated American shipbuilding is difficult to gauge properly. The United States was fighting through diplomatic channels for free navigation on the Seven Seas and was advocating and entering into reciprocity treaties which in theory promised well; nevertheless, American foreign trade and shipbuilding activities, instead of being stimulated, actually declined during the period. In 1809 the tonnage of the United States merchant marine registered for foreign trade was 906,855 tons, and in 1810 it had increased to 981,019 tons. In 1820 the corresponding tonnage figures were officially given as 583,657 tons; in 1825, 665,409 tons; and in 1830 they were down to only 537,563 tons—a record low since 1795. Prior to the War of 1812 and omitting three years of repression, discouragement, and embargo, the average annual total tonnage built during five years (1804-1806 and 1810-1811 inclusive) was 126,524 tons. Eliminating the artificial year of 1815 with its total tonnage of 155,579 tons (which in part made up for the war years with only 31,167 tons average of new construction in 1813 and 1814), the average building of wood merchant sail for the following years 1816-1819 was 94,965 tons. Excluding the vessels built for the Dutch in this period, the average annual new tonnage was reported as only 78,707 tons, which was a pronounced drop from the output of

American shipyards and the new construction for the American merchant marine prior to the War of 1812. But the bottom of the decline had not been reached, for in 1820 only 47,784 gross tons of shipping (excluding steam) were built in American yards and only twenty-two square-rigged three-masted vessels (ships and barks) were constructed and documented in the entire country. The depression in building was of long duration, for the annual average of new construction for the five-year period 1820-1824 inclusive was only 67,719 gross tons of merchant sail (47,784 tons in 1820, increasing to 86,852 tons in 1824), or an average of 56 per cent of the pre-war tonnage built per year. During the next five-year period (1825-1829 inclusive), building increased to an average of 106,333 tons total construction and 97,242 tons of sail per annum, but this tonnage was still 20,191 tons, or 16 per cent, below the annual average of total construction for the years 1804-1806 and 1810-1811 inclusive.

A comparison of the new construction figures for the years 1815 and 1825 is of interest, for they suggest that the government policy of free navigation was actually operating, not to open up foreign trade for American vessels but to drive them from the deep-sea trade routes of the world.

Sailing Vessels (excluding steam)	1815		1825	
	Tonnage	Percentage of Total	Tonnage	Percentage of Total
Placed under register for foreign carrying trade.........	106,079	68.6	61,492	53.6
Enrolled for the coastwise trade.....................	48,545	31.4	53,102	46.4
Total	154,624	100.0	114,594*	100.0

*The total tonnage of vessels built, excluding steam, is also given as 109,547 tons.

The following statement gives a comparison of the number and the relation of types and rigs of the sailing vessels built in 1815 and during the entire fifteen-year period 1815-1829 inclusive:

Type or Rig	1815		Annual Average 1815-1829 Inclusive	
	Number of Vessels	Percentage of Total	Number of Vessels	Percentage of Total
Three-masted ships and barks........................	136	10.3	60	6.9
Brigs	224	16.9	125	14.4
Total square-riggers	360	27.2	185	21.3
Schooners	680	51.4	454	52.4
Sloops, etc.	284	21.4	228	26.3
Total fore-and-afters	964	72.8	682	78.7
Total all sail................................	1,324	100.0	867	100.0

The year 1815 was an unusual year as far as volume of shipbuilding was concerned, as it directly followed the signing of peace at Ghent on December 24, 1814, which put an end to the War of 1812. A comparison of the types and tonnage of all the vessels built and documented in the United States during each of the years 1815, 1816, and 1817 is of interest:

Year Ending Dec. 31	Sailing Vessels						Steam Vessels		All Vessels	
	Ships and Barks	Brigs	Schooners	Sloops, etc.	Total Sail	Gross Tons	Total Steam	Gross Tons	Total Number	Gross Tons
1815..........	136	224	680	284	1,324	154,624	5	955	1,329	155,579
1816..........	76	133	781	424	1,414	131,667	17	3,519	1,431	135,186
1817..........	34	90	559	394	1,077	86,393	10	1,233	1,087	87,626

The total tonnage built and documented in each of the next two years was about the same as in 1817 (87,346 tons in 1818 and 86,670 tons in 1819), but the tonnage of steam increased to 4,925 tons (25 vessels) in 1818 and to 7,291 tons (28 vessels) in 1819. The tonnage of sail reduced to 82,421 tons in 1818 and to 79,379 tons in 1819; however, in each of these years, 53 three-masted square-riggers were built, the total number of sail being 898 in 1818 and 848 in 1819.

The United States, throughout its life as a nation, has been intrigued with the idea of reciprocity in regard to foreign trade and its dealings with other nations, but—because of persistent and unfortunate experience—no word descriptive of a policy should be treated by this country with as much suspicion as *reciprocity*. After the peace with Britain following the War of 1812, the United States entered into a so-called reciprocity treaty with England, on July 3, 1815, which was unfortunate and detrimental in its operation to the United States as a nation and particularly to its marine interests and foreign commerce. Genuine reciprocity involves mutual and equal concessions. It is a matter of give and take, but America's first reciprocity required (as have all such agreements that the country has entered into during the last century and a quarter) much giving with but little chance for taking as compensation for losses. The American negotiators of the treaty were gullible in their dealings with the representatives of a foreign power—as have other American negotiators continued to be to this day. The result was that the agreement reached was a one-sided arrangement, which soon became manifest in practical operation. The one great advantage to America covered by the reciprocal treaty entered into between the United States and Britain on July 3, 1815, was that which gave American vessels free entry into all British ports in Europe. This opening of the door to free navigation in direct trade permitted, among other things, the establishment of the transatlantic packet service, which operated greatly to the benefit of the nations on both sides of the ocean. It is also significant that because the United States could build cheaper and better wood sailing ships than Britain, America soon gained a monopoly in this valuable and highly important transatlantic trade, and its supremacy in this channel was unchallenged until the days of iron steam.

The United States Navigation Act of 1817 closed the American coastwise trade to foreign ships and prohibited the importation of foreign goods except in American bottoms or in ships of the country of origin, but it provided for the reciprocal removal of this latter restriction. Other laws were enacted during 1817-1830 looking toward the forcing of the British and French into a more liberal foreign trade shipping policy. American ports were closed to ships coming from any British colony whose ports were closed to United States vessels. (Britain had closed its West Indian ports to American ships in 1783.) A reciprocity treaty was forced on France in 1822 (ratified in 1823), which substantially reduced, but did not entirely eliminate, discriminations. The United States reciprocity acts of 1824 and 1828 gradually extended the scope of the American-advocated system of free navigation, and a special act providing for the reciprocal opening of the United States-British West Indies trade was passed May 30, 1830, and presumably became effective by a proclamation of October 5, 1830.

Supporters of the reciprocity foreign trade policy of the United States during the period 1815-1830 have argued to the effect that whereas under the old protective system the American merchant marine developed, was very prosperous, and represented a very large percentage of the total tonnage entering United States ports, yet conditions affecting international trade were fundamentally undesirable because the "rival policies of the nations, added to the costs of navigation and shipment, interfered with the rational employment of tonnage and altered the normal course of trade." Hutchins says: "The injustice done by unfair competition to the mercantile shipping and shipbuilding interests and the injury done by foreign protectionism to the prestige and naval power of the United States clearly required strong counteractions." We are told that the American Government urgently and persistently strove to promote "a more economical, rational and equitable system of international trade" and advocated a policy of "fair competition in shipping" and "free navigation on the Seven Seas." When the United States could build and operate merchant ships much more cheaply and better than any other nation on earth, it was but natural for it to advocate "Freedom of the Seas," and when America lost its economic advantage (held for some two centuries because of an abundance of good, cheap, and accessible timber), Britain supplanted the United States in marine leadership with iron and steam vessels; the country that, for selfish reasons, had combated American ideology regarding unrestricted ocean transport quickly switched, for equally selfish reasons, and became the world's greatest advocate of free trade—a national (or empire) economic and political policy that must by its very nature be associated with low competitive costs of production and operation.

The election of President James Madison, of Virginia, who was Thomas Jefferson's appointee, merely continued in power Jefferson's Democratic-Republican, or anti-Federalist, political party. The administration, through a commercial convention with the British Government framed some months after the Peace Treaty of Ghent, bound the United States to levy no discriminating duty on ships or products in the trade between it and Great Britain; but this reciprocity arrangement was imposed on by the British negotiators, who reserved to themselves the right—after obtaining valuable concessions from the United States—to regulate the trade of the British possessions (West Indies, etc.) and colonies (Canada) in the Western Hemisphere in accordance with their own desires and with no obligation of reciprocity, granting to United States ships the privilege of engaging in direct trade only with Britain's faraway East Indian possessions. To the credit of Congress, be it said that there was violent opposition to the repeal of the discriminating duty on British goods and vessels and to the corresponding withdrawal of protection from the American mercantile marine, but the executive assertion that the honor of the nation was involved and that the terms of the convention committed the United States and really bound Congress prevailed, so the Repeal Bill was reluctantly passed, under protest, by a slender majority. The United States was trapped by British diplomacy, and Britain moved at once to take full advantage of the position in which it found itself.

The old British colonial commercial policy of exclusion was promptly revived. American ships were barred from any participation in the British West Indian trade, and American lumber, fish, cattle, foods, and agricultural products could enter the island ports of the Caribbean that flew the British flag only if they were carried thither in vessels owned by British subjects. This was supposedly "reciprocity," and it was authoritatively said that it resulted in the laying up, in idleness, of an American fleet of eighty thousand tons. The ultimate injurious effect of the "reciprocity" treaty to American shipping was far-reaching and much more disastrous. United States ports were opened to British ships on even terms with American ships, and British vessels straightway commenced to bring into the United States large quantities of manufactured goods (such as woolens, cottons, chinaware, hardware, etc.) that carried a low tariff. They then loaded American goods (lumber and forest products, fish and food products) that our ships had theretofore handled and sailed for British West Indian ports, from which our vessels were barred. From the West Indies, these British ships would carry sugar, molasses, and other island products to Europe or actually return with such cargo to the United States and continue primarily to trade directly between American and West Indian ports. McMaster, referring to the actual working of the British-American "reciprocity" agreement of 1815, says:

> The profits of the triangular voyage (Britain-United States-West Indies-Britain) enabled a British vessel to bring British goods, wares, and merchandise from England to the United States for much less than the actual cost of transportation on an American vessel, which could not make a similar voyage. An English merchant carrier could even afford to bring goods from Liverpool to New York at an actual loss, inasmuch as he could easily recover on the voyages from New York to the West Indies and from the West Indies back to Liverpool, on neither of which could American competition affect him. In the hope of doing to American shipping what false invoices and auction sales had already done to American importers, manufacturers, and retailers, the direct trade between England and America was carried on by Englishmen so much below the cost of the voyage that, during the sum-

mer of 1816, beef and tallow, butter, hams, and potatoes were actually brought from Galway and Newry to New York, where they undersold our home products. Indeed, companies were formed to continue their importation. Thus, the old trade which, by the convention, seemed to be on a basis of equality was considered in reality in a way wholly favorable to England.

Referring to the condition of American shipping following the operation of the 1816 "reciprocity" treaty with Britain, when the reduction in the foreign commerce of the United States reminded some observers and writers of the days of the Jeffersonian 1808 embargo, McMaster writes:

> Half the tonnage owned along the seaboard and engaged in the coasting and foreign trade was said to have been laid up. The number was greatly overestimated; yet there was no seaport where many ships could not be seen dismantled and literally rotting at the wharves, while American sailors sought occupation abroad, and American shipwrights went off to New Brunswick to cut timber and build vessels to carry it to Europe or to the Indies. Once more all branches of trade connected with shipbuilding languished, and thousands of mechanics were thrown out of employment.

The British Canadian provinces were not slow to take selfish advantage of the Yankees and profit by opportunities given them in the fantastic "reciprocity" treaty of 1815. Plaster was a large article of export from Nova Scotia and New Brunswick to the United States, so the provincial government, in the Plaster of Paris Act of 1816, placed a prohibitive export tax of one pound sterling per ton on this material if shipped on an American vessel to any United States port east of Boston. Congress, by this time, clearly saw that the American nation was being buncoed and flimflammed by the British; its patience exhausted, it retaliated by forbidding foreign vessels to bring plaster to the United States from any port which did not permit American vessels to load and carry it. Congress, emerging from the delusion forced upon it by the harmful acts of a gullible administration with an impractical policy actuated by wishful thinking, moved further in the defense of American commerce and forbade admission to the United States of all British ships sailing from ports from which American vessels were excluded. In March 1817, Congress enacted a law following the pattern of the British (Cromwell) Navigation Act of 1660. This law forbade the importation of goods into the United States from any foreign port except in American vessels or vessels of the country in which the goods originated. However, this exclusion law had fundamental reciprocal features incorporated therein. The act would not apply to the vessels of any country that had placed no prohibition against United States shipping, thus confirming a declaration of March 3, 1815, to the effect that the United States, as set forth in the act, was willing to withdraw all discriminating duties in favor of any foreign nation which would do the same thing as far as trading with the United States was concerned. The law of March 1817 was noteworthy, moreover, in another respect. Whereas, from the first, the American coastwise trade had been rigidly protected and foreign craft had been deprived of participation through the levying of heavy tonnage dues, the new act absolutely closed the coasting trade of the country to foreign trade.

The United States negotiated treaties of reciprocity with various maritime nations in harmony with the policy outlined in the act of March 1815, but as long as trade to the British West Indies was denied American shipping, the shipowners of the United States were required to seek new, compensating markets, and they turned to the East Indies, the Orient, India, and the Philippines and began to build larger vessels for this faraway trade. Marvin says:

> Our shipowners sought in other seas for the trade which the inhospitable British policy denied them. Shut out of the West Indies, they turned to the East Indies where Cleveland, Delano, and their comrades had shown long before an example of Yankee sagacity and fortitude. The Stars and Stripes became a familiar sight to the junk-sailors of the China Sea, the fishermen of Formosa, and the Malay coasters of the Philippines. Yankee keels furrowed thickly the Bay of Bengal. Maine yards, especially, began to launch large and powerful ships and barks for this distant commerce. Where the West Indian trade had been conducted in light vessels of from 70 to 200 tons, the East India trade demanded vessels of from 300 to 700 tons. Thus the American merchant marine gathered new dignity and became undeniably more formidable through the steady growth of the direct traffic between the Far East and our seaports.

The three years following the close of the war with Britain (1816-1818 inclusive) showed an average of 804,000 tons of American shipping entering United States ports per year; according to U.S. Government records, the registered tonnage in foreign trade averaged 731,855 tons, while the total foreign trade of the United States averaged $210,325,000 per annum for these three years. At the end of the period known as the era of reciprocity on the seas (1816-1830 inclusive), the tonnage of United States ships in foreign trade was only 537,-500 tons (a drop of 443,456 tons, or 45.2 per cent, from the corresponding tonnage of 1810), and the total foreign commerce had dropped to $134,392,000 per annum—a reduction of $94,-631,000, or 41.3 per cent, from the value reported for 1816.

Between 1822 and 1828, the tonnage of United States shipping in foreign trade increased from 582,701 to 757,998 tons—a gain of 175,297 tons, or 30 per cent. But the American foreign trade fleet tonnage in 1828 was exceeded by the tonnage of each of the seven consecutive years 1806-1812 inclusive and of the three years 1815-1817 inclusive, and it was 223,021 tons, or 22.7 per cent, below the 981,019 tons of 1810. Prof. J. R. Soley, writing of the third decade of the nineteenth century in THE MARITIME INDUSTRIES OF AMERICA, has said:

> In every respect, we may say that this period (1820-1830) represents the most flourishing condition of shipping in American history. Although since that time commerce has increased twelvefold, and although in the year preceding the Civil War our registered tonnage was three times as large, yet we have never since 1830 reached the position in respect to the carrying trade to and from American ports that was maintained during this decade, but, on the contrary have receded from it further and further.

This conclusion should be questioned. The annual volume of total foreign commerce, during the years 1820-1830 inclusive, varied from $109,117,000 in 1821 to $180,927,000 in 1825 and was only $134,523,000 in 1829 and $134,391,000 in 1830. (In only one year of the eleven-year period did it exceed $151,000,000, and in only two years was it in excess of $145,650,-000.) In comparison, it is well to note that, excluding the great embargo years 1808 and 1809, the years of the first decade of the century showed a minimum yearly volume of foreign commerce of $120,467,000 (in 1803) and a maximum of $246,843,000 (in 1807) and that during the three years before the embargo (1805-1807 inclusive) the average value of foreign commerce per annum was $231,320,000 (and back in 1801 was $204,384,000). Throughout the third decade of the nineteenth century, according to Marvin, "we conveyed on the average about ninety per cent of our commerce in our own vessels as compared with seventy-four per cent in 1815 and seventy per cent in 1816, when our merchant tonnage was nominally larger; our control of our ocean carrying in 1820-1830 was fully equal to that of the remarkable period from 1800 to 1810."

Much has been written of the "great gain in American shipping following the War of 1812"; actually the gain was but slight for a rapidly growing nation. The United States made its spectacular gain as an ocean carrier prior to Jefferson's Long Embargo of 1807, and the mercantile marine never really recovered from the setback it received from a timid government appeasement policy with regard to European powers. But the War of 1812 with Britain was equally destructive to the American merchant marine, to foreign trade, and to United States ships handling such trade. Marine historians emphasize the fact that the tonnage of American ships engaged in foreign trade entering and clearing United States ports rose from 1,570,-000 tons in 1821 to 1,939,000 tons in 1830. This increase of 369,000 tons, or 23½ per cent, represents, however, a gain of only 2½ per cent per year for a period of nine years, which is moderate considering the increase of population and the natural expansion of trade. Moreover, the tonnage of U.S. shipping registered for foreign trade, which was 593,825 tons in 1821, was down to 537,563 tons in 1830—a reduction of 56,263 tons, or 9.5 per cent, during the period.

At no time during the third decade was the foreign trade mercantile marine as big, as busy, and as dominant as it was prior to the Jeffersonian big embargo of 1808. During the year 1807, American ships carried 92 per cent of the combined value of imports and exports, or $227,100,000 worth of cargo. In the best year of the third decade (1825), American ships carried 92.3 per cent of combined imports and exports, but the value was only $167,000,000, or $60,100,000 (27 per cent) less than in 1807. Moreover, the tonnage of the ships engaged in foreign trade was 665,400 tons in 1825, but it was 810,200 tons, or 144,800 tons (22 per cent) greater, in 1807. Whereas American ships carried about 90 per cent of the nation's imports and exports during 1820-1830, they carried over 91 per cent of a much larger total foreign trade business during the years 1805-1808 inclusive and averaged over 90 per cent for the seven consecutive years 1804-1810 inclusive.

Notwithstanding the handicaps and losses to American shipping due to the reciprocity period, American ships continued to give Great Britain much concern. The London TIMES in May 1827 had this to say editorially:

> It is not our habit to sound the tocsin on light occasions, but we conceive it to be impossible to view the existing state of things in this country without more than apprehension and alarm. Twelve years of peace, and what is the situation of Great Britain? The shipping interest, the cradle of our navy, is half ruined. Our commercial monopoly exists no longer; and thousands of our manufacturers are starving or seeking redemption in distant lands. We have closed the Western Indies against America from feelings of commercial rivalry. Its active seamen have already engrossed an important branch of our carrying trade to the Eastern Indies. Her starred flag is now conspicuous on every sea and will soon defy our thunder.

In the twenties, agitation developed in the United States to abandon the whole system of discriminating duties and tonnage dues and by example to persuade other countries to do the same. Overconfident political economists affirmed that the United States led the world in the economical building and operation of ships and that, if conditions of equality in the realm of commerce could be attained, America, with its superior skill and experience, would overwhelm all its foreign competitors and dominate the ocean trade of the world. The result was the Reciprocity Act of May 24, 1828. In discussing this bill, Senator Chas. L. Woodbury, of New Hampshire, expressed a feeling quite common among American lawmakers when he said: "By this bill, we now hold out the olive branch to all. If our terms are accepted, we may obtain most of the transportation now enjoyed by foreigners in the eight or ten hundredths of our foreign tonnage; as they are now enabled to compete with us to that extent chiefly by the discrimination they enjoy at home." The New Hampshire senator could not have been conversant with the shipping affairs of his own state; for, whereas Portsmouth, N.H., had in 1818 owned more deep-sea tonnage in proportion to its population than any other American port except Boston, it is said that in 1828, after many years of "reciprocity," the famous Piscataqua port "possessed not a single ship registered for foreign carrying." The town, which with its shipyards, shipowners, and merchants was in the van as an important American marine community at the turn of the century and prior to the embargo and blockade, quickly passed into oblivion as a deep-sea foreign trade port during the War of 1812 and the reciprocity era that followed.

The decline of American ports such as Portsmouth, N.H., and Portland, Maine, was due primarily to the arbitrary attitude of the British in regard to the West Indian trade. On May 29, 1828, Congress made another special overture to Great Britain by authorizing the president to open the direct trade between the United States and British West Indies to British vessels without discriminating duties if Britain would give like terms to American ships. Once again Great Britain played America false and took advantage of United States diplomats and executives. Britain professed to consent to the new reciprocal arrangement, and President Jackson, taking the English at their word, on October 5, 1830, issued a proclamation opening the United States-West Indies trade to British vessels. Prior to making this formal concession, the United States administration was once more guilty of a grievous error of omission, for although claimedly operating in the realm of co-operative and mutual reciprocity, it acted by granting privileges without demanding and receiving compensating concessions and rights in return. Whereas British ships, by the proclamation, were permitted to enter the West Indies-United States trade on an equality with American ships, no privilege of participation in the

West Indies-Great Britain trade was granted to United States vessels; the British Government cleverly retained this trade as a monopoly of the merchants of Liverpool, Bristol, London, and Hull. This was not all, for the United States soon discovered, by bitter experience, that the concessions made by the British in the realm of reciprocity were only superficial and not fundamentally real. Marvin well describes what happened:

All manner of ingenious discriminations were still imposed in the British West India ports against American vessels or the freight which they carried. It is related as an instance of the insincerity of the British "reciprocity" that a firm of American merchants, desiring to test the matter, loaded two brigs, one American, one British provincial, with Maine lumber and sent them out at the same time to the island of Trinidad. One vessel received her cargo in an American port; the other in New Brunswick, whither the lumber had been rafted. Both cargoes sold for the same price, and the earnings of each vessel on the principle of reciprocity ought to have been alike; but an adjustment of accounts proved that the voyage under the British flag produced $893 more than that conducted under the American.

This stated difference was a "tremendous sum" considering the relative value and buying power of the dollar in those days, and the differential in favor of British ships in practical operations naturally led to British vessels' obtaining preference as well as a pronounced advantage, to the corresponding detriment of United States ships and commerce, in the British West Indian trade with the continent of North America and in the rapid development of the shipping interests of the Canadian provinces. While this was happening, British vessels were obtaining the same, identical treatment as American vessels in United States ports in strict and honorable conformity with the provision of the reciprocity law; the United States played fair and suffered, for the British ran true to form and cheated.

The struggle of the United States for fair dealings in West Indian trade was not confined to attempts to obtain truly reciprocal working arrangements with Britain. All of the old, great marine and colonizing powers such as France, Spain, and Holland were either selfish and tricky in a camouflaged way in harmony with the established principles of international diplomacy or openly and ofttimes belligerently hostile. Spain was particularly unfriendly to American shipping—and this openly. It showed its prejudiced animus toward the United States by admitting British and French ships into Puerto Rico with an entry duty of 62½ cents per ton and insisting on charging American ships $1.00 per ton, and for a long period of time, Spain declined to permit United States vessels to enter Havana or any Cuban port unless they paid the exorbitant tonnage rate of $2.50 per ton. As Spanish vessels entered American ports by the payment of a nominal duty, the discrimination of the Spanish finally was deemed so intolerable that Congress was compelled to act in the matter, but only by retaliatory acts was Spain brought to its senses and compelled to abandon its hatred for the United States expressed through discriminatory duties and taxes imposed on American ships.

Professor Soley says that the United States Reciprocity Act of 1828, in its effect upon indirect trade, has done the United States, especially in South America, "a great and lasting injury." When the law became effective, there followed at once an "enormous reduction in our registered tonnage, while the proportion of our own carrying trade, which we had maintained for eight years (viz., 90 per cent), began almost immediately thereafter to fall, and it has been falling ever since, until it has reached almost the point of extinction." Commenting on the theory behind the United States reciprocity legislation and the experience of the country in its operation, Marvin says:

The misnamed "reciprocity" legislation was not the only cause of this melancholy decline, but that it was a real cause and a great one is a hard fact that admits of no denial. The theory was plausible enough. We were to allow British vessels to bring cargoes from Russia, China, or Brazil into our ports on the same terms as American vessels, and in return our ships were to be allowed to bring Russian, Chinese, and Brazilian freights on the same terms as British ships into Liverpool and London. That what we lost in our own trade we should regain and more than regain in the opened trade of other nations, was the persistent argument and honest belief of the champions of maritime reciprocity.

Unfortunately, Britain and other nations did not play the game aboveboard, honestly and fairly as did the United States. These other maritime powers, particularly Britain, were impregnated with prejudices and defensive, subtle, and camouflaged trickery; their acts—as their diplomacy—were not open, direct, and honest. The gullible, childish and innocent, idealistic United States suffered in all of its treaties and dealings with materialistic, selfish, and experienced governments that, having entered into a reciprocity agreement, immediately set to work ingeniously to develop hidden ways and means which would give them pronounced advantages while they, professedly and on the surface, operated in conformity with the terms of the treaty. Prof. Albert S. Bolles, in THE FINANCIAL HISTORY OF THE UNITED STATES, says that Great Britain did not really accept for many years the United States-tendered "olive branch" of reciprocity in indirect commerce and that Britain, notwithstanding its agreements and protestations, kept its West Indian colonies closed as far as possible to American commerce as late as 1849, or for nineteen years after it had professed to consent to reciprocity in trade with the United States and the thorough elimination of all discriminating duties that would operate to benefit the ships of one nation in trade competition with the other.

A comparison of the American shipping tonnage and dollar value of foreign trade for a few years prior to and following the Reciprocity Act of 1828 gives eloquent testimony that this act operated to be harmful to the shipping interests of the United States and not beneficial as predicted by pseudo-economists and the "rainbow prophecies" of American legislators.

Year	Tonnage United States Foreign Trade Shipping	Total Foreign Commerce	Foreign Commerce Carried on American Ships	Percentage of Total Foreign Trade (Exports and Imports) Carried on American Ships
1825	665,400	$180,928,000	$167,000,000	92.3
1826	696,200	150,984,000	139,700,000	92.5
1827	701,500	145,643,000	132,400,000	90.9
1828	758,000	145,042,000	128,900,000	88.9
1829	592,800	$134,523,000	$120,300,000	89.5
1830	537,500	134,392,000	120,600,000	89.8
1831	538,100	168,181,000	145,300,000	86.5
1832	614,100	176,642,000	146,700,000	83.1

These statistics show the depressing effect of the Reciprocity Act of 1828 on both American ships and foreign commerce; they also suggest the resilience of American shipping throughout the era of sail and the natural expansion of foreign trade as the industrial revolution developed. The steady decline from 1826 on, in the percentage of American foreign commerce carried in American ships, is conspicuous, and this reduction continued with the years.

By 1830, American vessels could presumably sail "with substantial freedom and under conditions of fair competition" between ports of the United States and of most of the countries of Europe (excluding Spain, Portugal, Italy, Belgium, Greece, and Turkey), Brazil (treaty of 1828), and the British West Indies (by treaty, but not without discrimination). Many indirect trades were still closed; hence American ships were confined to a great degree to the direct routes radiating from the United States and to the "international tramp ship business" in certain regions such as South American and oriental waters. In the foreign trade routes opened to American shipping, the vessels flying the Stars and Stripes promptly took the lead in quality of tonnage, sailing performance (both speed and reliability), and condition of delivered cargoes. It has been said that "the American policy of free navigation induced traffic to flow more rationally and reduced transportation costs"; but, although the shipping and shipbuilding industries of the United States were expanded and the war-time value of the merchant marine was enhanced, the boom to foreign shipping was very apparent, and the moves made by the United States in harmony with its idealistic policy benefited foreign shipping more than American.

After 1830, the establishment of free navigation in the West Indies, the practical application of the policy of "reciprocity," improvements in shipbuilding and shipping conditions abroad, and rising costs in the United States caused a fall in the percentage of the registered tonnage of American ships to that of the total vessels entering United States ports. Starting with the first record of the young nation with 53 per cent in 1789, the proportion rose to 94 per cent in 1796, dropped to 82 per cent in 1800, reached 92 per cent in 1807, receded to 85 per cent in 1809, rebounded—after the Jefferson Long Embargo—to 96 per cent in 1811, dropped to 55 per cent in 1814 (during the War of 1812), steadily gained after peace was declared to 91 per cent in 1820, experienced a slight recession to 87 per cent in 1823, advanced to 91 per cent in 1825, dropped to 85 per cent in 1828, and rose to 88 per cent in 1830. Following this pivotal year, the proportion of United States shipping to total shipping entering and clearing United States ports declined to 77 per cent in 1831 and to 71 per cent in 1832, and the virtual monopoly of American ships handling foreign trade of the United States was ended for all time. During the period 1855-1859, although America had the world's greatest merchant marine in quantity of superior, modern tonnage, the percentage of this tonnage handling the foreign trade of the nation was down to 67 per cent, in 1863 it was 62 per cent, and then —during the Civil War—came the crash; in 1864 it dropped to 46 per cent, in 1866 to 44 per cent, and in 1870 to 38 per cent. But the depths of humiliation of a naturally endowed and one-time great seafaring nation had not been reached. In 1870 the percentage of the registered tonnage of American ships to that of all vessels engaged in foreign trade was 38, and the United States ships handled somewhat less than 36 per cent of the country's foreign trade measured by value of cargoes carried. These percentages shrunk to 19 and 17.5, respectively, in 1880. In 1890 only 12.8 per cent of the foreign trade of the United States (measured by value of cargoes) was carried in American bottoms, and by 1901 this proportion had dropped to the insignificant and humiliating figure of 8.2 per cent.

Natural Development of United States Shipbuilding Centers and Ports with Expansion of Foreign Trade

Whereas New England was the country's great center in marine interest and activities at the close of the War of 1812, a considerable tonnage was owned in New York and on the Delaware and farther south on the Chesapeake and in the Carolinas. At that time, the merchant fleet was more widely distributed geographically as to ownership than it became as the years advanced through the respective packet ship, clipper ship, and Down Easter eras, with the center of ship construction and ownership steadily moving north and east. In 1818, Seybert made the following computations for the ports of the country that had the greatest marine tonnage in proportion to population:

Port	Tons per Capita	Port	Tons per Capita	Port	Tons per Capita
Boston, Mass.	4.48	Baltimore, Md.	2.90	Philadelphia, Pa.	2.23
Portsmouth, N. H.	4.15	New York, N. Y.	2.78	Charleston, S. C.	2.14

The shipbuilding and shipping industry of the United States, from the early days of the republic, has been located north of the Virginia Capes. Following the War of 1812, the South developed a great export business in cotton, but ships built in northern yards and managed by northern shipping companies handled the marine transport, and the South failed to develop a shipping industry commensurate with its volume of traffic. The record of Charleston, S. C., which, early in the nineteenth century, was a seaport of note and, in 1815, a center of transatlantic shipping, is illustrative of the general lack of progress of southern ports:

Tonnage	1815	1829	Decline in Fourteen Years	
			Tonnage	Percentage
	Tons	*Tons*		
Registered foreign shipping	15,619	3,015	12,604	81
Enrolled coastwise shipping	10,578	3,596	6,982	66
Total	26,197	6,611	19,586	75

From the War of 1812 on, the principal shipping centers of the country were New York, Boston, Philadelphia, and Baltimore. It is said that in 1815 the bulk of the shipping industry was centered between the Hudson River, New York, and Eastport, Maine, where there were thirty-five maritime centers served by customhouses in which 874,575 tons, or 64 per cent of the country's fleet, were documented. The following shows how the total documented tonnage varied at the country's four large primary shipping centers during the period 1815-1829 inclusive:

Port	Tonnage of Total Documented Fleets at the Stated Ports in the Years Set Forth			Tonnage Gain or Loss from 1815 to 1834—a Period of Nineteen Years	
	1815	1825	1834	Tons	Percentage
New York	278,869	304,484	359,222	80,353 gain	29 gain
Boston	137,009	152,869	212,536	75,527 gain	55 gain
Philadelphia	99,310	73,808	83,521	15,789 loss	16 loss
Baltimore	107,137	92,050	59,870	47,267 loss	44 loss

Much of the New York and Philadelphia shipping consisted of river and canal boats, inland-water steamboats, etc. (and New York's included tonnage built for Long Island Sound traffic). Of the Baltimore documented fleet, a good percentage was river, bay, and protected-water craft; whereas in Boston a larger proportion of the tonnage was capable of deep-sea work, even though much of it was documented as coastwise. Hutchins says that as late as 1830 the tonnage on permanent register at Boston (95,936 tons) exceeded that of New York by about four thousand tons. (New York showed 142,829 tons permanently enrolled and licensed compared with 91,769 tons on permanent register.) He adds that, in 1815, Bath and Portland, Maine; Portsmouth, N. H.; Newburyport, Salem, Plymouth, and New Bedford, Mass.; Middletown, Conn.; and Norfolk, Va., all owned substantial foreign trade fleets. "Whaling-ship control was concentrated at New Bedford, Nantucket, and New London, and the codfishing business at Gloucester, Provincetown, Boston, and Newburyport."

The tonnage of shipping owned in the customs district of the two greatest ports in the United States—New York City and Boston—at various times during the period 1820-1860 is stated herewith:

Date	Tonnage		Date	Tonnage	
	New York	Boston		New York	Boston
Dec. 31, 1820	231,215	126,323	June 30, 1850	835,867	320,687
Dec. 31, 1830	256,557	135,009	June 30, 1855	1,288,235	546,269
Sept. 30, 1840	414,817	220,243	June 30, 1860	1,464,001	464,213

Salem, the second biggest port in Massachusetts throughout the period up to 1821, was rapidly passing out of the picture after the War of 1812 and fell behind the whaling port of New Bedford in the early twenties and also behind Barnstable in the thirties; in 1855, Salem (with 30,236 tons) stood only sixth among the Massachusetts customs districts, owning less tonnage than Boston (546,269 tons), New Bedford (169,986 tons), Barnstable (80,615 tons), Newburyport (40,827 tons), and Gloucester (34,237 tons).

The tonnage of shipping owned in all the thirteen customs districts of Massachusetts (twelve districts prior to the forties) is stated herewith as of certain dates during the period 1820-1860, with the tonnage owned in the Boston Customs District set forth in relation to the total for the state:

Date	Tonnage		Boston Percentage of State	Date	Tonnage		Boston Percentage of State
	Massachusetts	Boston			Massachusetts	Boston	
Dec. 31, 1820	316,069	126,323	40.0	June 30, 1850	685,437	320,687	46.8
Dec. 31, 1830	329,498	135,009	41.0	June 30, 1855	979,207	546,269	55.8
Sept. 30, 1840	536,526	220,243	41.0	June 30, 1860	835,435	464,213	55.6

During the era of wood merchant sail following the close of the War of 1812 and preceding the Civil War, New York and Boston became pre-eminently the country's two outstanding foreign trade ports, with New York gradually gaining in relative importance. As this period advanced, Maine became more and more the leading shipbuilding state, for it concentrated on the construction of sturdy deep-sea sailing vessels that were built to sell at a relatively low price and carry good (weight and measurement) cargoes well and cheaply. Beginning in the early forties, much tonnage of merchant sail built in Maine for foreign trade was for New York and Boston owners, having been either ordered by the shipping merchants of these cities or acquired when new from the builders, who did not hesitate to keep their ways occupied and lay down vessels on speculation. The localization of the shipping industry developed as foreign trade passed more and more through New York and Boston.

At the port of New York, the entries of American ships from foreign ports rose from 374,602 tons in 1834 to 1,377,738 tons in 1855, an increase of 268 per cent in twenty-one years; at Boston the corresponding tonnage entry figures for the same stated period showed a gain of 214,914 tons (from 158,712 tons to 373,626 tons), or 135 per cent. However, during these years, the volume of foreign trade at Philadelphia and Baltimore increased only moderately, and that of some other ports (such as Bath, Maine, and Portsmouth, N. H.) declined. It is evident that throughout the entire second quarter of the nineteenth century, New York was the leading foreign trade port in the United States. Commencing in the early thirties, it pulled away rapidly from its nearest competitor, Boston, Mass., and has steadily increased its position of leadership with the years, being favored by geographic setting in regard to rail lines that tap productive and demanding territories, concentration of population, etc., as well as an excellent year-round harbor.

The central and more southerly ports in the United States throughout the nineteenth century were primarily operating and trading ports; whereas those farther east—and in Maine—were principally centers of shipbuilding, and trading with foreign ports was of secondary importance. Hutchins figures, from U.S. commissioner of navigation reports, that the ratio between the tonnage built and owned in typical and leading ports of each group for the year 1833 was as follows:

Philadelphia, Pa.	5 per cent	Bath, Maine	26 per cent
Boston, Mass.	7 per cent	Waldoboro, Maine	31 per cent
New York, N. Y.	9 per cent	Machias, Maine	33 per cent
Portsmouth, N. H.	11 per cent		

It is said that the ratio of building to tonnage owned on the Piscataqua made its port (Portsmouth) "practically self-contained" during this period.

The following table of the permanently registered tonnage, with the gain or loss during the period 1834-1855, the American tonnage entered in 1855, and the number of ships and barks built in 1855 at each of eight leading ports from the Chesapeake north, has been compiled from U.S. Treasury Department annual reports on commerce, navigation, and tonnage for the years 1834 and 1855:

Customs District	Permanently Registered Tonnage 1855	1834	Percentage of Gain or Loss in 21-Year Period	American Tonnage Entered in Foreign Trade—1855	Number of Three-masted Square-rigged Sailing Vessels Built in 1855
New York	566,613	135,324	319 gain	1,377,738	40
Boston	393,577	93,457	321 gain	373,626	49
Bath, Maine	129,262	15,476	736 gain	4,423	56
Portland, Maine	82,895	30,916	168 gain	37,577	31
Baltimore	77,107	55,640	38.6 gain	121,337	14
Philadelphia	47,739	57,487	16.9 loss	152,822	10
Portsmouth, N. H.	18,680	17,598	6.1 gain	2,436	8
Salem, Mass.	18,337	29,729	38.3 loss	14,659	—

Hutchins says that the "permanently registered tonnage" tended to some extent to be concentrated in the large and active ports, thus reflecting the tendency of the localization of shipowning to follow the concentration of commercial activities. He continues:

Some Maine ports, particularly Bath, showed a tendency to develop a volume of registered tonnage much greater than that which their own foreign trade warranted. Thus the Maine ports, . . . by virtue of their lower costs of capital, entrepreneurial talent and labor and the close connection which was developing between shipping and shipbuilding, continued to serve as carriers for other centers when their own commerce died—a role which was later to increase in importance. . . . More and more vessels hailing from the eastern maritime centers engaged in the carrying trades of the rising seaports of New York, Boston, Philadelphia and Baltimore. The latter centers were clearly unable to increase their tonnage in proportion to the growth of their traffic. They were even less able to build themselves all the new ships which they needed. These changes were the result of alterations in regional planes of living and in the distribution of economic opportunities, and, in the case of shipbuilding, of the depletion of regional timber resources.

Bath, Maine, "away Down East," had grown by mid-century to be a most important East Coast port as far as permanently registered tonnage was concerned, but as a port for foreign trade it had virtually passed out of the picture. It was not geographically situated in relation to the location of a producing and consuming population and rail transport from factories, mines, farms, etc., to and from port to consuming markets to compete with any of the more centrally located and tied-in ports, such as (1) New York, (2) Philadelphia, (3) Boston, (4) Baltimore, or even with Portland, Maine. Located directly on the seacoast, Portland had direct rail connections with Canada and became a winter terminus for British-Canadian transatlantic lines and an eastern seaport for Dominion cargoes when, during a period of several months each year, the St. Lawrence was frozen over and ships could not trade direct with either Quebec or Montreal. Bath was the country's leading wood shipbuilding center from the fifties on, but Bath shipowners used more central and accessible ports (where they could more readily and economically pick up and deliver cargoes) for the commencement and conclusion of the voyages of their Bath-built, Bath-owned and managed square-riggers. It is interesting to note the outstanding and record high gain that the port of Bath made in the tonnage of ships permanently registered for foreign trade from the middle of the thirties to the middle of the fifties, and this period of unprecedented gain included the clipper shipbuilding boom, from which Bath builders and merchants held practically aloof because of their disapproval of the sharp-lined, oversparred and overcanvased, small deadweight-carrying ships (in relation to their size and registered tonnage). They affirmed, with truth as well as conviction, "Such ships cannot possibly be made to pay their way in normal markets, which will surely be back in a very few years."

Whereas Bath built a large percentage of its ships during the seventeenth, eighteenth, and early nineteenth century for local owners (and quite often the builders were the owners and operators), a larger percentage of the vessels launched into the Kennebec, as the nineteenth century advanced, were for "foreign" owners, i.e., not necessarily for owners in a foreign country but for shipping interests outside of Bath and the Kennebec region and most often outside of the State of Maine; for, as the century rolled by, Bath, the Kennebec River, and the Down East coast line, with its inlets and rivers, from the Piscataqua to the Passamaquoddy became the principal shipyard of the country. Hutchins says:

> During the entire eight years from 1850 to 1857, Maine yards supplied 1,150, or slightly over one-half, of the 2,255 ships and barks built. In the construction of brigs, schooners and other smaller craft, they also maintained a leading position. The district of Bath . . . became the leading shipbuilding center of the nation during the fifties, completing during each of three consecutive years the extraordinary number of 56 full-rigged ships and barks.

Shipbuilding in the United States boomed in 1832 and 1833 after the "reciprocity" depression years of 1828-1831, with the low in 1830, which came close in small amount of tonnage built and documented to the previous post-war lows of 1820 and 1821. In 1833 the leading shipbuilding ports, or districts, in the United States were New York (22,000 tons), Boston (16,000 tons), Bath, Maine (11,000 tons), Waldoboro, Maine (9,000 tons), Baltimore (8,000 tons), Portland, Maine (7,000 tons), and Belfast, Maine (6,000 tons); the principal shipbuilding states were Maine (51,000 tons), Massachusetts (33,000 tons), New York (23,000 tons), and Maryland (16,000 tons), with New Jersey and Connecticut next, each with 5,000 tons, followed by Virginia with 4,000 tons, North Carolina with 3,000 tons, and New Hampshire and Rhode Island, each with 2,000 tons. The following is a record (in round figures) of construction and documentation in the six leading shipbuilding customs districts, or ports, of the United States and in the three principal shipbuilding states for each year during the twenty-five-year period 1836-1860 inclusive:

	Six Leading Customs Districts						Three Leading States		
Year	New York	Boston	Bath	Philadelphia	Waldoboro	Baltimore	Maine	Massachusetts	New York
1860	23,000	21,000	16,000	11,000	10,000	6,000	57,000	33,000	31,000
1859	15,000	21,000	14,000	9,000	6,000	5,000	40,000	31,000	16,000
1858	25,000	21,000	14,000	10,000	11,000	4,000	55,000	32,000	37,000
1857	43,000	40,000	29,000	14,000	22,000	18,000	110,000	55,000	67,000
1856	49,000	62,000	50,000	19,000	30,000	15,000	149,000	80,000	76,000
1855	92,000	56,000	56,000	33,000	49,000	18,000	215,000	79,000	115,000
1854	93,000	69,000	58,000	24,000	31,000	16,000	168,000	92,000	117,000
1853	68,000	59,000	38,000	24,000	23,000	14,000	118,000	83,000	83,000
1852	69,000	24,000	24,000	16,000	27,000	15,000	110,000	48,000	72,000
1851	71,000	28,000	18,000	20,000	17,000	15,000	77,000	41,000	76,000
1850	55,000	23,000	22,000	18,000	23,000	11,000	91,000	35,000	58,000
1849	37,000	13,000	20,000	13,000	19,000	12,000	82,000	23,000	44,000
1848	57,000	17,000	19,000	19,000	21,000	11,000	89,000	39,000	68,000
1847	37,000	11,000	13,000	12,000	16,000	8,000	63,000	27,000	50,000
1846	29,000	12,000	9,000	8,000	7,000	10,000	49,000	24,000	33,000
1845	26,000	14,000	6,000	9,000	7,000	6,000	31,000	25,000	29,000
1844	18,000	5,000	3,000	6,000	6,000	4,000	20,000	9,000	21,000
1843 (9 months)	13,000	5,000	3,000	3,000	3,000	2,000	15,000	9,000	13,000
1842	18,000	12,000	7,000	9,000	9,000	3,000	38,000	18,000	20,000
1841	16,000	15,000	4,000	5,000	7,000	7,000	26,000	28,000	17,000
1840	13,000	7,000	7,000	8,000	12,000	8,000	38,000	17,000	13,000
1839	16,000	11,000	6,000	5,000	5,000	9,000	27,000	24,000	17,000
1838	14,000	7,000	3,000	3,000	6,000	10,000	24,000	19,000	14,000
1837	20,000	6,000	5,000	3,000	4,000	5,000	23,000	20,000	14,000
1836	16,000	8,000	4,000	2,000	7,000	6,000	27,000	22,000	19,000

The following statement shows the relative ownership of square-rigged two- and three-masted vessels in the eight principal shipbuilding and shipping states at the turn of the twenties into the thirties. The figures used are the averages for the two years 1829 and 1830.

State	Number of Vessels: Three-masted Ships and Barks	Two-masted Brigs and Brigantines	Total Square-riggers
Massachusetts	358	592	950
New York	239	242	481
Maine	52	229	281
Pennsylvania	38	167	205
Rhode Island	39	69	108
Maryland	40	51	91
Connecticut	12	39	51
New Hampshire	26	18	44
Total eight eastern states	804	1,407	2,211

The following table giving the number of square-rigged sailing vessels with three or more masts (ships and barks) of the U.S. merchant marine built in the principal shipbuilding states of the country during various years of the period 1834-1855 shows how the center of shipbuilding moved east with the years:

State	1855	1850	1845	1840	1834
Maine	213	127	43	50	32
Massachusetts	70	51	42	25	33
New York	40	26	18	6	16
Maryland	14	16	4	3	3
Pennsylvania	10	7	6	6	2
New Hampshire	8	8	4	4	5
Rhode Island	9	5	3	2	3
Connecticut	5	3	1	0	0

The number of each of the principal types of merchant sailing vessels built in the United States and in each of the three leading shipbuilding sections of the country during each year of the period 1836-1860 inclusive is set forth herewith. The three-masted square-riggers were full-rigged ships or barks, and the two-masted square-riggers were brigs.

	Three-masted Square-riggers				Two-masted Square-riggers				Schooners			
Year	Maine	Massachusetts	New York	U.S.A.	Maine	Massachusetts	New York	U.S.A.	Maine	Massachusetts	New York	U.S.A.
1860	43	30	4	110	20	2	2	36	95	91	15	372
1859	42	32	2	89	15	1	—	28	67	54	9	297
1858	56	33	7	122	28	3	2	46	77	70	21	431
1857	127	38	28	251	26	4	5	58	85	47	37	504
1856	155	84	24	306	70	10	7	103	83	35	35	594
1855	213	70	40	381	107	3	5	126	68	59	76	605
1854	156	82	40	334	78	4	7	112	99	87	63	661
1853	132	73	18	265	70	1	5	95	133	126	66	681
1852	138	51	24	255	63	6	2	79	148	97	46	584
1851	102	50	23	211	45	4	1	65	94	78	56	522
1850	127	51	26	247	75	19	2	117	115	46	42	547
1849	119	33	15	198	107	7	7	148	105	68	44	623
1848	130	53	26	254	118	17	3	174	114	107	59	701
1847	73	33	16	151	120	13	2	168	151	84	43	689
1846	47	26	11	100	97	26	3	164	140	108	37	576
1845	43	42	18	124	33	16	2	87	62	54	25	322
1844	27	18	11	73	15	5	6	47	52	19	16	204
1843 (9 months)	25	20	5	58	21	2	2	34	25	15	8	138
1842	57	32	6	116	50	32	5	91	55	21	12	273
1841	35	50	13	114	47	17	5	101	48	43	8	311
1840	50	25	6	97	56	11	13	109	75	76	17	378
1839	26	31	10	83	48	14	7	89	68	100	17	439
1838	21	21	7	66	42	10	8	79	78	131	28	510
1837	18	27	10	67	45	8	5	72	82	121	25	507
1836	30	34	14	93	36	10	3	65	91	109	54	444

During the boom year of 1833, Maine built 136 square-riggers (37 ships or barks and 99 brigs) and 167 schooners; whereas Massachusetts built 84 square-riggers (54 three-masters) and 99 schooners, and New York built 33 square-riggers (26 three-masters) and 36 schooners. The number of sailing vessels of each type reported built in the United States during the twenty-one-year period 1815-1835 is as follows:

Year	Rig: Ships and Barks	Rig: Brigs	Rig: Schooners	Year	Rig: Ships and Barks	Rig: Brigs	Rig: Schooners	Year	Rig: Ships and Barks	Rig: Brigs	Rig: Schooners
1815	136	224	680	1822	64	131	260	1829	44	68	485
1816	76	122	781	1823	55	127	260	1830	25	56	403
1817	34	86	559	1824	56	156	377	1831	72	95	416
1818	53	85	428	1825	56	197	538	1832	132	143	568
1819	53	82	473	1826	71	187	482	1833	144	169	625
1820	21	60	301	1827	58	133	464	1834	98	94	497
1821	43	89	248	1828	73	108	474	1835 (9 months)	25	50	302

The following table shows (in round figures) the registered tonnage for foreign trade at the leading ports and customs districts of the United States for various years during the period 1815-1860 inclusive as compiled from official records:

Year	New York	Boston	New Bedford	Bath	New Orleans	Baltimore	Portland	Waldoboro	Philadelphia
1860	838,000	411,000	141,000	138,000	132,000	114,000	108,000	79,000	67,000
1855	737,000	482,000	157,000	147,000	114,000	110,000	102,000	77,000	77,000
1850	441,000	270,000	119,000	76,000	83,000	90,000	60,000	38,000	64,000
1845	248,000	187,000	103,000	41,000	58,000	44,000	44,000	20,000	39,000
1840	203,000	149,000	45,000	32,000	49,000	34,000	36,000	13,000	52,000
1835	191,000	159,000	68,000	29,000	28,000	32,000	37,000	6,000	51,000
1830	101,000	100,000	46,000	16,000	13,000	23,000	29,000	2,000	47,000
1825	156,000	103,000	24,000	16,000	11,000	58,000	32,000	2,000	65,000
1820	110,000	85,000	20,000	12,000	14,000	43,000	22,000	6,000	59,000
1815	177,000	105,000	15,000	16,000	13,000	86,000	25,000	7,000	76,000
High year	844,000 (1859)	482,000 (1855)	157,000 (1855)	162,000 (1856)	132,000 (1860)	115,000 (1859)	109,000 (1856)	86,000 (1858)	77,000 (1855)
Low year	101,000 (1830)	85,000 (1820)	11,000 (1817)	10,000 (1821)	8,000 (1816)	23,000 (1830)	20,000 (1817 and 1819)	1,000 (1826)	39,000 (1837 and 1843)

The following table (compiled from U.S. Government reports) shows the total tonnage (in round figures)—registered, enrolled, and licensed for foreign, coastwise, and inshore service—at the customhouses of the leading ports and districts of the United States during the forty-six-year period 1815-1860 inclusive:

Year	New York	Boston	Philadelphia	New Orleans	Baltimore	Waldoboro	Bath	New Bedford	Portland
1860	1,464,000	464,000	241,000	228,000	200,000	187,000	165,000	149,000	131,000
1855	1,288,000	546,000	294,000	200,000	183,000	148,000	175,000	169,000	137,000
1850	835,000	320,000	206,000	248,000	149,000	96,000	103,000	127,000	86,000
1845	550,000	227,000	130,000	169,000	83,000	58,000	62,000	112,000	64,000
1840	414,000	220,000	103,000	126,000	76,000	52,000	64,000	89,000	56,000
1835	376,000	226,000	86,000	79,000	54,000	38,000	47,000	76,000	57,000
1830	256,000	135,000	71,000	45,000	35,000	21,000	26,000	55,000	42,000
1825	304,000	152,000	73,000	29,000	92,000	22,000	27,000	36,000	45,000
1820	231,000	126,000	83,000	38,000	68,000	21,000	21,000	32,000	33,000
1815	278,000	137,000	99,000	17,000	107,000	19,000	22,000	24,000	33,000
High year	1,464,000 (1860)	546,000 (1855)	294,000 (1855)	251,000 (1851)	200,000 (1860)	187,000 (1860)	193,000 (1856)	169,000 (1855)	145,000 (1857)
Low year	229,000 (1819)	125,000 (1818)	73,000 (1825-26)	13,000 (1816)	67,000 (1818)	18,000 (1817-18)	20,000 (1816, 1819, and 1821)	22,000 (1816-17)	29,000 (1817-18)

A comparison of the registered tonnage and of the shipping entrances and clearances of the four chief central ports of the United States and of its four leading southern cotton ports, showing the relative marine activity—all expressed as a percentage of the national total—during the forty-year period 1821-1860, is stated herewith from compilations by Albion from U.S. Government reports:

Port of	Registered Tonnage Foreign Trade	Tonnage Entered	Tonnage Cleared	Enrolled and Licensed Tonnage	Steam Tonnage—1828-1860 Total	Steam Tonnage—1828-1860 Registered
New York	26.8	26.0	21.2	21.0	21.0	75.9
Boston	16.9	10.0	9.1	3.7	0.9	0.7
Philadelphia	4.7	3.6	2.9	5.7	3.0	—
Baltimore	5.1	3.0	3.2	3.1	2.7	0.1
New Orleans	4.3	9.0	10.8	5.2	20.4	8.6
Charleston	1.3	2.3	3.3	1.1	1.3	1.6
Mobile	0.5	1.8	2.7	0.9	2.7	—
Savannah	0.8	1.4	2.1	0.4	1.2	0.4

The growth of population of the leading seaports in the United States covering the period 1790-1860 has been stated (in round figures) as follows:

Port	1860	1850	1840	1830	1820	1810	1800	1790
New York	813,000	515,000	312,000	202,000	123,000	96,000	60,000	33,000
Philadelphia	565,000	340,000	220,000	161,000	112,000	91,000	69,000	42,000
Baltimore	212,000	169,000	102,000	80,000	62,000	35,000	26,000	13,000
Boston	177,000	136,000	93,000	61,000	43,000	33,000	24,000	18,000
New Orleans	168,000	116,000	102,000	46,000	27,000	17,000	—	—
Charleston	40,000	42,000	29,000	30,000	24,000	24,000	20,000	16,000
Mobile	29,000	20,000	12,000	3,000	1,000	—	—	—
Portland	26,000	20,000	15,000	12,000	8,000	7,000	3,000	2,000
Savannah	22,000	15,000	7,000	7,000	7,000	5,000	5,000	—

In 1800 the number of arrivals of vessels in the various leading ports of the United States engaged in foreign trade was as follows:

Principal Ports	From British Isles	From Europe	From West Indies	From Other Parts of America	From Elsewhere	Total
New York	190	114	543	79	22	948
Charleston, S. C.	72	44	381	11	9	517
Philadelphia	56	74	301	45	35	511
Boston	83	95	238	46	32	494
Baltimore	41	62	266	8	12	389
Salem	16	38	107	6	12	179
Savannah	34	2	103	6	—	145
Portsmouth	5	11	93	3	2	114
New London	5	1	90	—	—	96
Portland, Maine	13	2	50	—	—	65

Not included in the above are many other ports, such as New Haven, Conn.; Newport and Providence, R. I.; Wilmington, Del.; New Bedford, Mass.; Castine and Wiscasset, Maine; Norfolk and Richmond, Va.; New Bern, Edenton, Georgetown, and Wilmington, N. C. The total arrivals can be estimated as about 4,000 from foreign ports.

It will be noticed that in 1800 Charleston, S. C., was the second most important U.S.A. port as far as number of arrivals was concerned and, while running close to Philadelphia and Boston, was led by only New York. As the century advanced, the shipping importance of Charleston rapidly waned, and New Orleans became the greatest of the southern ports engaged in foreign trade and superseded Charleston as the country's greatest cotton port. By mid-century, Boston was second only to New York, New Orleans had driven Philadelphia to fourth place, and Baltimore had become a poor fifth.

The relative activities in the five leading ports of the United States during the fifth decade of the nineteenth century are set forth in the following record of arrivals from certain foreign ports during the year 1857:

Vessels Arrived from	Entered at the Ports of				
	New York	Boston	New Orleans	Philadelphia	Baltimore
England	583	110	1,136	75	30
West Indies	1,594	486	343	248	227
Canada	342	1,913	—	77	73
Mediterranean	186	135	66	48	22
Brazil	151	17	83	45	74
East Indies	57	122	—	—	—
China	41	6	—	—	—
Argentina	26	15	—	—	3
Russia	8	23	—	—	—
Chile	2	15	—	—	12
Total	2,990	2,842	1,628	493	441

The chief general ports of the United States dating from the days following the close of the War of 1812 up to the Civil War were New York, Boston, Philadelphia, and Baltimore. The principal cotton ports were New Orleans, Charleston, Savannah, and Mobile, with the latter becoming the third national cotton port of importance in 1839 and the second in the last half of the fifties. New Orleans, the outstanding premier cotton port of the country in tonnage of entries, ran generally third and close to Boston, but in tonnage of clearance was the second port in the United States from 1827 on. Portland, Maine, steadily gained in importance and tonnage of both entrances and clearances from the late forties and had 115,000 tons of entries and 155,000 tons of clearances in 1860; Quoddy, Maine, showed 101,000 tons both entered and cleared in 1833 and 128,000 tons entered and 142,000 tons cleared in 1856. The following is a statement (in round figures) of the tonnage entered from and cleared for foreign countries at the principal general and cotton ports of the United States in 1830, 1840, and for each year of the period 1850-1860 ending at the close of the fiscal year June 30, 1860, shortly before the commencement of the Civil War:

Year Ending	Tonnage Entered from Foreign Countries at							
	New York	Boston	Philadelphia	Baltimore	New Orleans	Charleston	Mobile	San Francisco
Dec. 31, 1830	305,000	113,000	77,000	61,000	118,000	72,000	15,000	—
Sept. 30, 1840	545,000	245,000	87,000	82,000	255,000	60,000	66,000	—
June 30, 1850	1,145,000	478,000	132,000	99,000	349,000	96,000	96,000	130,000
June 30, 1851	1,448,000	512,000	159,000	113,000	328,000	92,000	55,000	245,000
June 30, 1852	1,699,000	518,000	178,000	128,000	423,000	101,000	87,000	238,000
June 30, 1853	1,755,000	582,000	183,000	119,000	511,000	94,000	79,000	252,000
June 30, 1854	1,840,000	653,000	191,000	156,000	492,000	89,000	86,000	208,000
June 30, 1855	1,735,000	707,000	185,000	165,000	435,000	88,000	69,000	172,000
June 30, 1856	1,681,000	682,000	173,000	153,000	663,000	121,000	169,000	168,000
June 30, 1857	2,035,000	714,000	189,000	163,000	612,000	126,000	107,000	149,000
June 30, 1858	1,694,000	665,000	156,000	156,000	583,000	126,000	115,000	147,000
June 30, 1859	1,890,000	734,000	180,000	189,000	659,000	129,000	131,000	221,000
June 30, 1860	1,973,000	718,000	185,000	186,000	632,000	126,000	160,000	235,000

Year Ending	Tonnage Cleared for Foreign Countries at							
	New York	Boston	Philadelphia	Baltimore	New Orleans	Charleston	Mobile	San Francisco
Dec. 31, 1830	243,000	93,000	67,000	58,000	142,000	72,000	26,000	—
Sept 30, 1840	408,000	181,000	83,000	93,000	350,000	105,000	118,000	—
June 30, 1850	982,000	437,000	111,000	126,000	369,000	121,000	112,000	180,000
June 30, 1851	1,230,000	494,000	140,000	105,000	421,000	138,000	121,000	422,000
June 30, 1852	1,279,000	510,000	139,000	128,000	544,000	140,000	163,000	352,000
June 30, 1853	1,384,000	590,000	151,000	143,000	630,000	131,000	143,000	442,000
June 30, 1854	1,598,000	613,000	170,000	191,000	603,000	123,000	118,000	421,000
June 30, 1855	1,445,000	687,000	142,000	158,000	604,000	140,000	145,000	322,000
June 30, 1856	1,520,000	647,000	129,000	159,000	773,000	161,000	213,000	305,000
June 30, 1857	1,756,000	666,000	141,000	188,000	728,000	143,000	156,000	262,000
June 30, 1858	1,460,000	612,000	119,000	164,000	733,000	145,000	149,000	225,000
June 30, 1859	1,476,000	642,000	125,000	171,000	808,000	161,000	206,000	354,000
June 30, 1860	1,678,000	633,000	135,000	174,000	894,000	179,000	255,000	351,000

The following is a statement (in round figures) of the tonnage (1) entered from and (2) cleared for foreign countries at all United States ports during each of the forty years of the period 1821-1860 inclusive, as recorded in the annual United States reports on commerce and navigation:

Year	Tonnage Foreign Trade Entered	Tonnage Foreign Trade Cleared	Year	Tonnage Foreign Trade Entered	Tonnage Foreign Trade Cleared
1821	846,000	888,000	1841	2,368,000	2,371,000
1822	888,000	911,000	1842	2,242,000	2,276,000
1823	894,000	929,000	1843	1,678,000 (for 9-month period)	1,792,000
1824	952,000	1,021,000	1844	2,894,000	2,917,000
1825	973,000	1,055,000	1845	2,946,000	2,984,000
1826	1,047,000	1,052,000	1846	3,110,000	3,189,000
1827	1,055,000	1,111,000	1847	3,321,000	3,378,000
1828	1,018,000	1,048,000	1848	3,798,000	3,865,000
1829	1,003,000	1,077,000	1849	4,368,000	4,429,000
1830	1,099,000	1,105,000	1850	4,348,000	4,361,000
1831	1,204,000	1,244,000	1851	4,993,000	5,130,000
1832	1,342,000	1,362,000	1852	5,292,000	5,278,000
1833	1,608,000	1,639,000	1853	6,281,000	6,065,000
1834	1,642,000	1,711,000	1854	5,884,000	6,019,000
1835	1,993,000	2,031,000	1855	5,945,000	6,179,000
1836	1,935,000	1,990,000	1856	6,872,000	7,000,000
1837	2,065,000	2,022,000	1857	7,186,000	7,070,000
1838	1,895,000	2,012,000	1858	6,605,000	6,802,000
1839	2,116,000	2,089,000	1859	7,806,000	7,915,000
1840	2,289,000	2,353,000	1860	8,275,000	8,789,000

As the Century Advances, American Wood Sail Is Increasingly Threatened by Steam and Iron, Which Are Capitalized to the Full by Favored Britain

By 1830 the industrial revolution was well advanced, the concentration of industry and of population was being evidenced, and there was beginning a long period of expansion in the volume of trade, with the transportation of raw materials in large quantities from distant places and the mass shipment of manufactured consumer and producer goods from the point of economic origin to the markets of the world. In this industrial revolution, Britain led with its natural and quickly developed and utilized resources of iron and coal and its mechanical-mindedness and enterprise. Hutchins says, "With the development of British economic power, came the economic systems of free trade and free navigation—the twin ideals of the British liberal economist. These widened the markets of the British producer, who was well fortified by technical leadership and substantial economies of scale. The resulting carrying trade became to a large extent, however, the preserve of the American wood sailing ship."

At the dawn of the American clipper ship era and at the time of the discovery of gold in California and Australia, Britain felt so secure in regard to the ultimate future with iron and steam that in 1849 it decided that it was to its national and empire economic interest to throw overboard its "long catalogue of protective navigation laws which had been piling up since the time of Cromwell" and to declare for free trade afloat. The quick boom in American clipper shipbuilding that followed this act—due primarily to the Gold Rush and the opening up of the West Coast of North America—made the British regretful of their decision, or at least of the timing of it, for a few years; but during a period of overexpansion, with an associated business depression and sectional turmoil, followed by the long and severe Civil War, Britain capitalized American difficulties to its own advantage and consolidated its position, so that in the mid-sixties it was well on its way to the mastery of the oceans of the world and of foreign trade. The American wood clipper ship took the United States to the zenith of power and glory as the world leader in merchant sail; British iron and steam, the American Civil War, the opening of the West and a change in interest and psychology resulted in the rapid unseating of the United States from its throne and the crowning of Britannia in the sixties as the Mistress of the Seas and of foreign ocean trade.

Whereas the annual production of pig iron in Britain increased about ninefold in the thirty-seven years 1823-1860, it was not until the end of the clipper ship decade (1850-1860) and the American Civil War period (1861-1865) that Britain's iron ships commenced to be an important factor in ocean trade, but the competition of British iron with American wood in marine construction was first felt by United States shipowners in the early fifties, when iron screw steamers appeared in the north transatlantic packet service. Until the Civil War, America was supreme in the shipbuilding field with its wood merchant sail, but American forests were being depleted, shipbuilders had to go farther afield for their timber, and costs of both labor and material had greatly advanced. For quantity floating tonnage to handle the world's rapidly expanding deep-sea trade, conditions were ripe in the sixties for the metal ship, and Britain not only introduced it but also coupled with iron the power of steam and screw propulsion. The far-flung British Empire permitted the establishment of coaling stations throughout the Seven Seas, and with the invention of the compound and multiple-expansion steam engine, higher pressure and improved steam boilers, and the opening of the Suez Canal, Britain became the pioneer and dominant leader in the industrial revolution and the world's great mercantile marine power. America was a new country of tremendous unexplored and inaccessible area with unknown natural resources. Britain was the exact opposite, small and compact, with mines located and accessible. The political conditions of sectional differences, causing disharmony and leading to years of destructive civil strife in America, with a declining interest in ocean trade, were capitalized to the full by opportunist Britain, which in the sixties rose to an unquestioned ascendancy as a deep-sea carrying power and became dominant on the seas in both mercantile and naval tonnage.

The population of the United States increased over eightfold from the close of the Revolution to the commencement of the Civil War, while that of Great Britain doubled during the years 1800-1865. Whereas the population of Britain was some two and one-half times that of the United States in the early nineteenth century, the young republic outstripped the mother country in the late fifties, the population of the United States being about thirty-one million in 1860 and that of Great Britain a scant thirty million in 1865.

Population means consumer demand. Around mid-century, Britain needed primarily foodstuffs and certain agricultural and kindred materials from abroad, and the United States was a rapidly growing market for the products of British industry. Ocean trade naturally increased by leaps and bounds. The total tonnage in foreign trade entering and clearing United States ports increased from 2,204,323 tons in 1830 to 17,065,125 tons in 1860—a gain of 14,860,802 tons, or 674 per cent. The tonnage entering and clearing British ports during the same period increased from 5,799,385 tons to 24,689,292—a gain of 18,889,907 tons, or 326 per cent. The marine tonnage of the United States in 1830 was 1,191,776 tons; that of the British Empire, 2,531,819. By 1860 the tonnage of the United States had advanced to 5,353,868 tons, and that of the entire British Empire to 5,710,968. The American tonnage had increased 4½ times and the British Empire's tonnage, 2¼ times in a period of thirty years—the rate of gain of the United States tonnage being twice that of the British. In 1861 (the year that the Civil War commenced) the marine tonnage of the United States stood at 5,539,813 tons, all told (foreign, coastwise, Great Lakes, etc.), a figure not surpassed until 1902.

The protected coastwise shipping of the United States naturally advanced rapidly with the increase in population, the development of the Middle West around the Great Lakes, and the Gold Rush to California which started at the end of the forties and was at its height throughout the fifties. The coastwise shipping tonnage, which was 516,979 tons in 1830, aggregated 1,176,694 tons in 1840, 1,797,825 tons in 1850, and 2,644,867 tons in 1860, being about equal to the foreign trade tonnage in 1824, 1831, 1835, and again in the late fifties. Because of the shipbuilding boom of the clipper ship era, the foreign trade tonnage exceeded that engaged in coastwise trade in 1856; but, following this boom and during and after the Civil War, the tonnage and percentage of the national tonnage engaged in foreign trade dropped spectacularly while the tonnage for coastwise and inland-water trade continued to rise steadily.

Bowden, Karpovich, and Usher, in AN ECONOMIC HISTORY OF MODERN EUROPE SINCE 1750, state that a comparison of averages of British trade during the twenties and the sixties shows, in this period of forty years, increases in physical volume of imports, such as wheat 16 times, wool 9 times, and cotton 5 times, and of exports, such as coal 29 times. Increases in exports of manufactured articles in money value were: machinery and millwork 22 times, iron and steel 15½ times, and cotton goods 3½ times. Such a tremendous expansion in imports and exports (i.e., foreign trade) demands deep-sea floating tonnage, and prior to 1860 the call was for wood sail, with the United States the world's leading and best producer of merchant ships and incidentally the best handler and operator of sailing vessels.

Until about 1847, shipbuilding in the United States was quite moderate in volume. In that year a big boom began as a result of great industrial activity, the expansion of the cotton trade, the repeal of the British corn laws, the Irish famine, and the demand for tonnage to handle a pronounced increase in ocean trade. During the depression year of 1830, the tonnage is stated as 58,560 tons (including 7,069 tons of steam), but during the next four years the average total construction was 127,495 tons per annum, with 1833, a boom year, turning out 161,492 tons (of which 10,734 tons were steam). The average for the period 1835-1838 inclusive—excluding steam—was 85,390 tons per annum, and for the next eight years (1839-1846 inclusive) 98,502 tons of merchant sail were built per year, which included, on an average, about ninety-six full-rigged ships and three-masted barks. John G. B. Hutchins says that the boom in wood shipbuilding in the United States in the years 1847-1857 was accompanied "by a trebling in the size of the ocean-going vessels built, a notable advance in models, rigs, and techniques of construction, and by sharply increasing costs of construction because of timber and labor difficulties." Hutchins continues:

Activity was mainly centered in the construction of ships and barks, many of them over 1,000 tons in size, which were now the primary units of the ocean-going marine. There were 1,480 such vessels built during the sixteen years 1831-1846 and 2,858 during the eleven boom years 1847-1857. The output of these vessels may be estimated to have increased from an annual average of about 17,000 gross tons for the years 1815-1830 to about 210,000 gross tons for the years 1847-1858—an expansion of about twelve hundred per cent.

The following table has been compiled from reports of the U.S. commissioner of navigation:

Period—Fiscal Years	Average Number of Sailing Vessels Built per Year							Tonnage	
	Ships and Barks	Brigs	Total Square-riggers	Schooners	Sloops, etc.	Total Fore-and-afters	Total Vessels All Rigs	Average Total per Annum	Average per Annum per Vessel
1815-1830....	57	120	177	450	220	670	847	88,200	104
1831-1846....	93	100	193	412	206	618	811	99,700	123
1847-1857....	259	113	372	610	372	982	1,354	308,000	228
1858-1878....	83	30	113	422	417	839	952	196,000	206
1815-1878, a period of 64 years......	109	84	193	459	307	766	959	164,200	171

Following 1878, the number of deep-sea sailing vessels built in the United States per annum declined sharply, and during the next seven years (1879-1885 inclusive) only 27 ships and barks and 3 brigs (30 square-riggers in all) were constructed per annum, but 402 schooners and 147 sloops were built on the average per year. During the following six years (1886-1891 inclusive), the average annual construction was only 7 ships and barks, with a brig every two years, 316 schooners, and 176 sloops. From 1892 to 1901 inclusive, a total of only 37 ships and barks and 1 brig was built during this period of ten years, and the number of schooners and sloops constructed per annum averaged 246 and 223, respectively.

The following statement gives the number of three-masted square-rigged merchant sailing vessels—ships and barks—built in the United States each year during the twelve-year period 1848-1859 inclusive according to official records:

Year	Number	Year	Number	Year	Number
1848	254	1852	255	1856	306
1849	198	1853	270*	1857	251
1850	247	1854	334	1858	122
1851	211	1855	381	1859	89
Average for 4-year period 1848-1851	227	Average for 4-year period 1852-1855	310	Average for 4-year period 1856-1859	192

*Includes 1 four-masted bark, or shipentine.

RECAPITULATION

Total number built in 12-year period	2,918
Average number built per annum in 12-year period	243
Largest annual production in 12-year period	381 vessels in 1855
Smallest annual production in 12-year period	89 vessels in 1859

There was a flurry of ship construction following the close of the War of 1812, but when the terms of the reciprocity treaty of July 1815 became fully realized, the boom died and building was low for several years, being only 47,784 tons of merchant sail in 1820 and 55,856 tons in 1821. By 1825 the construction of sailing vessels totaled 109,547 tons and the following year, 118,094 tons; but after further "reciprocity" measures, the building of merchant sail receded to 68,216 tons in 1829 and to a record low of 51,491 tons in 1830. Shipbuilding commenced to gain in vigor in 1846 (141,844 tons). In 1850 a total of 227,997 tons of merchant sail was built, and the high point of the clipper shipbuilding boom was reached in 1855, when 510,690 tons of wood sail were documented. The reaction to the boom was abrupt, for in 1859 only 121,297 tons of sailing vessels were built.

The following shows the type, number, and gross tonnage of the vessels built in the United States and documented during this twelve-year boom period of 1848-1859 inclusive:

	Sailing Vessels				Steam Vessels		All Vessels	
	Number							
Year	Square-riggers	Fore-and-afters	Total	Tonnage	Number	Tonnage	Number	Tonnage
1848	428	1,248	1,676	265,549	175	52,526	1,851	318,075
1849	346	993	1,339	213,970	215	43,018	1,554	256,988
1850	364	861	1,225	227,997	197	51,258	1,422	279,255
1851	276	847	1,123	221,146	245	78,326	1,368	299,472
1852	334	850	1,184	269,822	268	85,534	1,452	355,356
1853	365	1,072	1,437	332,339	280	95,155	1,717	427,494
1854	446	1,047	1,493	447,216	284	88,830	1,777	536,046
1855	507	1,274	1,781	510,690	246	72,760	2,027	583,450
1856	409	1,073	1,482	404,054	232	65,239	1,714	469,293
1857	309	862	1,171	304,345	263	74,459	1,434	378,804
1858	168	831	999	179,338	226	65,374	1,225	244,712
1859	117	581	698	121,297	172	35,305	870	156,602

In 1854, British merchants were in great need of floating tonnage to handle their colonial trade and received special permission from Lloyd's, with the approval of the British Government, to purchase a number of American wooden vessels. In that year, U.S.A. sales to foreign nations rose to 60,033 tons. In 1855 it was 65,887 tons; in 1856, 42,168 tons; and in 1857, 52,649 tons, which figures are comparable with 10,035 tons in 1853. The great British purchases of American tonnage came several years later during the Civil War, when the activities and threats of Anglo-Confederate cruisers caused American merchants to choose between laying up their vessels in port to rot away or selling them to foreigners at a half or a quarter of their cost, but this was in the nature of a forced or bankrupt sale—not of an original mercantile transaction. In the one year 1864, because of the extraordinary economic pressure brought about by the Civil War, more United States merchant ships were disposed of to foreign owners than had been sold in all the years between 1854 and 1860.

According to official records, the first iron vessel built and documented in the United States was a steam paddle-wheeler of 198 tons, constructed in 1837-1838, and two sister vessels were built and documented prior to June 30, 1840. In 1845 the first iron barge was built, and the tonnage of iron vessels documented that year was 1,383 tons, consisting of four steamers totaling 808 tons and five barges with a collective tonnage of 575 tons. In 1846 five iron steamers aggregating 1,592 tons were built (and one iron barge of 230 tons). The first iron sailing vessel, a small schooner of 216 tons, was built by Betts, Pusey & Jones at Wilmington, Del., and documented in the government's fiscal year ending June 30, 1855. In 1856-1857, Holden & Gallagher, of East Boston, built an auxiliary screw full-rigged ship of 1,300 tons, with an engine of 800 horsepower. This vessel, named *Voyageur de la Mer,* which was sold to the pasha of Egypt, was designed by Samuel Harte Pook, America's most prominent technical clipper ship designer. She was of strange and most expensive construction, being designated as "an iron ship," but described as having "a double frame of iron and wood on which were fastened 3,000 small plates." The brig *Nankin* of 300 tons was built of metal by Otis Tufts at East Boston for R. B. Forbes in 1858, and this vessel proved very successful in the China trade and survived a stranding at Yokohama during a bad typhoon; her cost was reported as "excessive," however, and repeat orders were not forthcoming. The bulk molasses carrier *Novelty* of 358 tons was built of iron by the Atlantic Works, East Boston, in 1869 for Nash, Spaulding & Company, New York. The 679-ton iron bark *Iron Age* was built in 1870 by Harlan & Hollingsworth, of Wilmington, Del., for Tupper & Beattie, of New York, but her high cost of $110 per gross ton, fully equipped, was "most discouraging." An iron sailing vessel of 1,470 tons was built in 1874, but the total tonnage of iron sail constructed in the United States and documented prior to 1880 was only eight vessels aggregating 3,047 tons. During the three-year period 1880-1882 inclusive, four iron sailing vessels were built totaling only 587 tons, and during these same years 119 steam vessels were built of iron, with a total tonnage of 97,988 tons.

Four iron sail were built in 1883 and 1884 aggregating 6,463 tons, and three of them, representing the bulk of the tonnage, were the famous trio of 2,000-ton full-rigged iron sailing ships built on the Delaware—the *Tillie E. Starbuck,* the *T. F. Oakes,* and the *Clarence S. Bement.* These were America's only contribution to square-rigged deep-sea iron sail, and they were not a success, as they were much inferior in model, rig, and general design to contemporary wooden vessels being built in Maine. American-built steel sailing vessels were much superior to the Delaware ships, and the first deep-sea steel sailing vessel, constructed ten years after the "*Bement,*" was the 3,000-ton four-masted shipentine *Dirigo,* built by the well-known operating firm of Down Easters—Arthur Sewall & Company—at Bath, Maine, in 1894. The total metal tonnage built and documented in the United States first reached 2,000 tons per year in 1853; it was 9,637 tons in 1860, 14,202 tons in 1871, 22,656 tons in 1873, 33,014 tons in 1874, 46,607 tons in 1882, and 51,142 tons in 1883.

The following statement shows the number and gross tonnage of iron or steel vessels—sail, tow, and steam—built and documented in the United States during each year of the fifteen-year period 1887-1901 inclusive:

Year Ending June 30	Sailing Vessels		Tow Barges		Steam Vessels		Total	
	Number	Tons	Number	Tons	Number	Tons	Number	Tons
1887	1	92	—	—	33	34,827	34	34,919
1888	3	317	1	428	43	37,921	47	38,666
1889	2	95	—	—	52	62,261	54	62,356
1890	2	184	5	5,133	60	77,215	67	82,532
1891	3	154	6	6,305	81	102,630	90	109,089
1892	5	415	4	4,958	52	45,896	61	51,269
1893	8	2,012	9	11,717	61	82,933	78	96,662
1894	2	4,647	—	—	38	46,889	40	51,536
1895	3	5,267	5	704	37	43,335	45	49,306
1896	6	15,800	7	3,487	48	84,249	61	103,536
1897	10	31,424	13	11,521	48	83,140	71	126,085
1898	2	6,724	10	7,041	52	48,560	64	62,325
1899	5	16,152	4	2,823	83	112,781	92	131,756
1900	11	29,168	—	—	81	167,957	92	197,125
1901	12	21,746	7	4,825	101	236,128	120	262,699

During the first years of the real clipper shipbuilding era, American wood sharp-modeled and heavily canvased full-rigged three-masted merchant ships were reported to have cost from $53 to $73 per ton, depending on where and when built, finish, and equipment. The 1,498-ton *Witch of the Wave,* built at Portsmouth, N.H., in 1851, cost "about $80,000, or some $53 per ton"; but the *Morning Light* of 1,713 tons, built in the same town two years later (at a different yard), was said to have cost when completed $115,000, or $67 per ton. The *Telegraph* of 1,078 tons, built by Paul Curtis at Boston in 1851, cost $65 per ton, but the same builder in 1853 produced the larger *Reporter* of 1,474 tons for a stated $55 per ton. In the same year, another Boston builder (J. Taylor) constructed the 1,396-ton *Aurora* at a reported cost of $60 per ton, and J. Stetson, of Boston, a year later built the 1,135-ton *Asterion* for $59 per ton. New York costs were evidently higher. Brown & Bell built the 1,003-ton *Oriental* in 1849 for $70 per ton, and Westervelt built the 1,098-ton *Contest* three years later for $73 per ton. New York's premier builder, W. H. Webb, built the *Invincible* of 1,769 tons in 1851 for $67 per ton, the eminently successful *Young America* of 1,961 tons in 1853 for $71 per ton, and the superior, well-finished *Challenge* of 2,006 tons in 1850 for about $72 per ton. However, it was said, "When absolutely completed and all equipment and stores aboard for a year's voyage, the *Challenge* represents an investment of $150,000, or $75 per ton." Some costs, as stated, were very high or low. For instance, J. Bell, New York, said that the 1,119-ton ship *White Squall,* built by him in 1850, cost "about $90,000," which would figure about $80 per ton, and the extravagantly built *Sunny South* of only 776 tons, constructed by G. Steers, New York, was reported to have cost her owners $70,000, or the extremely high price of $90 per ton. On the other hand, the 742-ton *Snow Squall,* built by A. Butler at Cape Elizabeth (Portland), Maine, in 1851, cost only $30,500, or $41 per ton.

As a general proposition, it could be said that during the early 1850's fine-modeled, well-sparred and finished ships built for carrying passengers and cargo, to the same general specifications, cost about $70 to $72 per ton in New York, $55 to $60 per ton in Boston, $53 to $58 per ton at Portsmouth, N.H., and from $42 to $48 per ton in Maine. Statements made by shipbuilders in the mid-fifties gave comparative costs as New York, $60-$70; Boston, $55-$65; Portsmouth, $50-$60; Maine, $45-$60; and New Brunswick, Canada, $40-$50. The ROCKINGHAM MESSENGER, Portsmouth, N.H. (February 16, 1853), gave the cost to local builders, "as a general average, to be about $55 per ton" (in some cases below), but "in no case have they built up to $60," and the paper said that Portsmouth builders believed that comparable vessels cost about $62 per ton at Boston and New York, $50 per ton in Maine, and $45 in New Brunswick. During the years 1854-1860, according to the Lynch Report, Maine shipbuilders testified that costs ranged from $58 per ton at Kittery on the Piscataqua to $50 per ton at Eastport, an A-1 ship of 1,000 tons on the Kennebec River costing $50-$55 per ton.

The iron bark *Iron Age* of 679 tons, built at Wilmington, Del., in 1869-1870, was said to have cost $110 per gross ton complete with outfit and $85 per ton for hull and spars alone.

The wood ship *Harvest* of 646 tons (approximately similar size), built at Kennebunkport, Maine, in 1857, according to available detailed total figures of expenses, cost only $25,001 to construct "hull and spars only," or $38.70 per ton as against $85.00 per ton for the hull and spars of the *Iron Age* built of metal twelve years later. The trio of three-masted iron sailing ships built on the Delaware in 1883-1884 is said to have cost "about $80 per ton and fully a third more than wood ships of similar size built on the Kennebec." In 1882, according to the Dingley Report, iron shipbuilding wages being paid on the Clyde were about 44 per cent less than those prevailing on the Delaware, and the prices for iron plates and shapes in England were 3/4 and 7/8 of a cent per pound less than in the United States, the cost of iron steamships built on the Delaware being stated at from 25 to 35 per cent more than in Great Britain. In 1900 the Sewall steel ships built at Bath, Maine, were said to have cost "about $67 per gross ton," whereas the last wooden ships built at the same yard (1889-1892) "had cost about $53 per ton"; therefore, the steel vessels cost about 26 per cent more than the wood ones of somewhat similar size. However, W. D. Sewall testified that the cost of building generally similar steel sailing ships on the Clyde was from 33 to 40 per cent less than in the United States.

American shipbuilding and shipping showed the most vigor prior to the Jefferson Long Embargo and the War of 1812 and from the thirties to the latter part of the fifties. A national business depression and a politically divided country preceded the Civil War, during which America lost its leadership and interest in the ocean-carrying trade of the world. The total documented tonnage of United States vessels of all kinds decreased from 1,741,392 tons in 1828 to 1,191,776 tons in 1830, was back to 1,758,907 tons in 1834, 2,180,764 tons in 1840, and 3,535,454 tons in 1850, and had grown to 5,353,868 tons in 1860 and to 5,539,813 tons in 1861—a figure that was not again reached until 1902 notwithstanding the tremendous increase in population, industry, and ocean trade during the last four decades of the nineteenth century. The total documented tonnage increased to 4.7 times the 1830 recorded tonnage during the thirty-one-year period prior to the Civil War, and this increase of 4,348,037 tons averaged 140,259 tons per year, or 11.8 per cent per annum of the tonnage of 1830. The gain in tonnage of the United States merchant marine employed in foreign (and California Cape Horn) trade during the period 1830-1862 inclusive was as follows:

Year	Registered Gross Tons	Increase over 1830: Tons	Increase over 1830: Percentage
1830	537,563	—	—
1840	762,838	225,275	42
1850	1,439,694	902,131	168
1855	2,348,358	1,810,795	337
1861	2,496,894	1,959,331	365

The peak of American tonnage engaged in foreign trade was reached in 1861 immediately prior to the Civil War, and notwithstanding the great agricultural and industrial development of the United States, the gain in population, increased world demand for goods, and the tremendous expansion of foreign trade, this 1861 volume of tonnage of American vessels engaged in ocean trade was not again equaled until 1918 (the year that the World War of 1914-1918 ended), when America's deep-sea tonnage had been built under artificial and emergency conditions to meet an economically unsound war demand of an essentially temporary nature. American deep-sea tonnage prior to the Civil War was practically all sail, the amount of steam tonnage (included in the before-stated total figure) being as follows:

Year	Tonnage Steam Vessels Registered Gross Tons	Percentage of Total Tonnage in Foreign Trade	Year	Tonnage Steam Vessels Registered Gross Tons	Percentage of Total Tonnage in Foreign Trade
1840	4,155	0.5	1855	115,045	4.9
1850	44,942	3.1	1861	102,608	3.9

The gain in tonnage engaged in the coastal trade during the first quarter of the nineteenth century reflects an increase in manufacturing in the country and expanding trade due to a more extended division of labor. Also, this tonnage was materially affected by the Louisiana Purchase with acquisition of the important southern port of New Orleans on the Mississippi (the great water traffic highway of the Midwest) in 1803 and the inclusion of Florida in the Union in 1819. The shipping engaged in coastwise trade was protected by large, discriminating levies after 1789 and by an absolute navigation monopoly after 1817.

In 1830 there were documented for coastwise trade in the United States 516,979 tons of shipping (496,640 tons enrolled and 20,339 tons small craft licensed). This coastwise tonnage protected from foreign competition increased to 2,616,716 in 1862, or fivefold. In this division of national marine trade, steam vessels increased at a rapid rate. The report of the commissioner of navigation states that for coastwise, river, and lake trade and other purposes there were under enrollment, in 1862, 2,175,540 gross tons of sailing vessels and barges and 596,465 gross tons of steam vessels—the amount of steam tonnage being 21.5 per cent of the total and 29.5 per cent of the tonnage of the sailing craft.

The proportion of the registered foreign trade tonnage to the total marine tonnage was reported as 62 per cent in 1789, 70 per cent in 1799, 67 per cent in 1809, 46 per cent in 1819, and 47 per cent in 1829. During the three-year period 1829-1831 inclusive, the total tonnage of U.S. registered vessels for foreign trade, plus the tonnage of the registered deep-sea whalers, averaged 615,690 tons, or 49.7 per cent of the tonnage of the entire U.S. merchant marine, which averaged 1,240,140 tons. In 1831 the tonnage of U.S. shipping registered in foreign trade and the tonnage enrolled and licensed for coasting trade were approximately the same—538,136 tons as against 539,724 tons; but thereafter coastwise shipping led, and foreign trade shipping lagged behind in volume until the clipper ship decade, when during the seven-year period 1853-1859 inclusive the tonnage of U.S. registered vessels (including registered deep-sea whalers) practically equaled the tonnage employed in the coastwise trade. Commencing in 1860, the marine tonnage of the United States enrolled and licensed for coasting trade became increasingly larger as the years advanced compared with the total tonnage of registered (foreign trade and deep-sea whaling) vessels, and in 1900 the ratio had grown to about 5 to 1—being 4,286,516 tons in the coastwise and 816,795 tons in the foreign trade. (In these figures, the tonnage of enrolled and licensed vessels for the fisheries is excluded.)

The tonnage figures for sailing ships built in the United States and in Great Britain and its possessions during the years 1831-1857 inclusive, divided into two periods (the first of gradual development and the second a definite eleven years of boom), are set forth comparatively herewith:

Where Built	1831-1846 (16 years)	1847-1857 (11 years)	Gain or Loss in Tonnage Built in 1847-1857 Compared with That of 1831-1846
	Tons	*Tons*	*Tons*
U. S. A.	1,595,000	3,390,500	1,795,500 Gain
Great Britain (United Kingdom)	1,890,000	1,757,000	133,000 Loss
British possessions	1,344,500	1,672,000	327,500 Gain
Total—British Empire	3,234,500	3,429,000	194,500 Gain

The relative gain of the United States over Great Britain as a shipbuilding power during the forties and fifties is apparent. During the days of wood shipping, Canada, north of the United States border, kept the British Empire in or near the front rank as a shipbuilding power, for more than three-quarters of the tonnage built in British possessions was laid down in the Dominion of Canada on the continent of North America. During the boom years of 1847-1857 (which included the cream of the clipper ship decade and practically all the active years of extreme and medium clipper shipbuilding in America), the United States built twice as much sailing ship tonnage as Great Britain, three times as much as Canada, and as much as the entire British Empire (Britain, its colonies, dominions, and overseas possessions) combined.

In the sixties, the picture underwent a pronounced change. The United States never recovered from the post-California Gold Rush depression, the national disunity, and the Civil War; it lost interest in foreign trade and a deep-sea merchant marine and utilized its capital and energies in the development of the big, new land that was opening up as the railroad systems extended their tracks. Britain, a small island nation dependent on overseas countries for food and agricultural products and for markets for its manufactured goods, properly sensed the vital importance of building and operating its own dominant merchant marine. Therefore, it used its own natural resources (iron and coal) in building steamers and turned as quickly as possible to iron steam (also iron sail). The British sailing fleet reached its all-time high in 1868, and in that year the British produced 266,000 tons of merchant sail as compared with 143,000 tons built in the United States (as against 510,690 tons in 1855). The net tonnage of the British fleet of merchant sail engaged in foreign trade for each of four pivotal years was as follows:

Year	Total Net Tonnage	Percentage of 1860 Volume	Year	Total Net Tonnage	Percentage of 1860 Volume
1850............	2,143,234	76.5	1868............	3,646,150	130.0
1860............	2,804,610	100.0	1878............	3,236,081	115.5

During the years 1874-1878, the British Empire built 1,100,000 tons of merchant sail, and whereas the United States built 754,000 tons during the same period, only 425,131 tons —or 38½ per cent of the British volume—were registered in the U.S.A. for foreign trade and service on the Seven Seas. The registered foreign trade sailing fleet of the United States declined from 2,496,894 tons in 1861 to 1,363,652 tons in 1871—a drop of 1,133,242 tons, or 45 per cent. This collapse was much greater and more mortifying to Americans with an economic and patriotic interest in ships and the sea than the rise to international dominance of the United States merchant marine during the late forties and the fifties had been definite and gratifying. The American fleet employed in foreign trade declined during the sixties from 2,321,674 tons to 1,496,220 tons, and the tonnage of sailing vessels in the whaling industry dropped during the decade from 185,728 tons to 70,202 tons, or about 62 per cent. The transfer of the carrying trade from American to foreign vessels (principally British) was as amazing in its proportions as it was humiliating to New England shipbuilders and shipowners and to all who appreciated the importance, to the ultimate well-being of the nation, of keeping the Stars and Stripes flying on the ocean trade routes of the world. The following figures show the degree to which America, during the decade immediately following her rise to admitted leadership and supremacy as the Mistress of the Seas in the mercantile realm, relinquished her deep-sea carrying trade and in a combination of indifference, thoughtlessness, and gross ignorance turned it over to the foreigners:

	Entering and Clearing U.S. Ports		
Year	United States Tonnage	Foreign Tonnage	Total Tonnage
1860..................................	12,087,209	4,977,916	17,065,125
1870..................................	6,992,967	11,332,095	18,325,062
Gain or loss..........................	5,094,242 Loss	6,354,179 Gain	1,259,937 Gain

The foreign tonnage entering and clearing United States ports increased 128 per cent during this momentous decade of 1860-1870, and this at the expense of American shipping; for during the ten-year period the total volume of tonnage entering and clearing United States ports increased less than 7½ per cent, or an average of some ¾ of 1 per cent per annum. However, the gain to foreign shipping of 6,354,179 tons was over five times as great as the total increase, during the period, of tonnage engaged in foreign trade entering and clearing American ports.

The relative growth of the total merchant shipping of the United States and of the United Kingdom of Britain from 1838 (the beginning of commercial deep-sea steam navigation) to 1860 is given in the following summary of tonnage; but the figures are not truly comparative as the basis of official tonnage computation was not exactly the same in the two countries, and in steam the American tonnage can be considered as gross tons, whereas the British measurements are said to be net tons. In 1860 the steam tonnage of the United States, on any basis of measurement, was greater than that of the United Kingdom, and both the American sail tonnage and the total tonnage (sail and steam) during the twenty-two-year period 1838-1860 had caught up with and considerably surpassed the corresponding British tonnage.

Year	Sail		Steam		Total	
	U.S.A.	Britain U.K.	U.S.A.	Britain U.K.	U.S.A.	Britain U.K.
	Tons	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*
1860................	4,485,931	4,134,390	867,937	452,352	5,353,868	4,586,742
1838................	1,802,217	2,308,800	193,423	74,684	1,995,640	2,383,484
Increase.............	2,683,714	1,825,590	674,514	377,668	3,358,228	2,203,258

The American total tonnage increased 170 per cent and the sail tonnage 149 per cent in twenty-two years; whereas the British increases were 92 and 79 per cent, respectively.

Writing of the American merchant marine in THE CLIPPER SHIP ERA, Capt. Arthur H. Clark says:

The year 1851 is memorable in our maritime annals, because at that time the United States was at the zenith of her power upon the ocean, and had completely outstripped her rival Great Britain in the efficiency and extent of her oversea carrying trade. It is true that the total tonnage of merchant shipping owned in the United States in this year, including steam, was only 3,718,640 tons, against 4,332,085 owned by the British Empire with all its dependencies; but these figures, like many statistics of this nature, are somewhat misleading. The primary reason for the existence of a merchant ship is, of course, her ability to pay her way and earn money for her owners. When a ship ceases to be able to do this, the sooner she is converted into a hulk or broken up, the better. So the true measure of a nation's merchant marine is its earning capacity, not merely the number or tonnage of its ships; and judged by this standard, the merchant marine of the United States was at this time far in advance of the merchant shipping of the whole British Empire.

In the first place, the merchant ships of the British Empire were of such massive construction that they could not carry at the very most more than ninety per cent of the cargo carried by ships of similar tonnage owned in the United States; then in the matter of speed, an American merchantman would make five voyages while a British ship was making four of equal length; and as to freights, the American ships had the splendid rates to San Francisco all to themselves, while from China to England the rates of freight were quite double in their favor, as compared with British ships.

If any one with a liking for statistics will apply these facts to the foregoing figures, the seeming advantage of tonnage possessed by the British Empire will disappear and it will be found that the merchant marine of the United States at that time held a commanding position in the maritime carrying trade of the world. Furthermore, the shipbuilders of this country still excelled in every branch of merchant marine architecture.

On the North Atlantic in 1851, the American Collins Line steamships *Arctic, Atlantic, Baltic,* and *Pacific* were competing successfully with the British Cunarders *Niagara, Canada, Asia,* and *Africa:* the *Baltic* holding the speed record for both the eastern and western passages between New York and Liverpool; while the New York, Philadelphia, and Boston packet ships still held their own. No sailing ships of other nationalities could compete with them, and though hard pressed by steamships of various lines, they still retained their popularity with passengers and shipping merchants. American ships from home ports were profitably engaged in the India, China, African, and South American trades; the New Bedford and Nantucket whaling ships were to be found upon every sea; the Mississippi, Hudson River, and Long Island Sound steamboats were the most perfect types of this period for inland navigation; and the Massachusetts fishing schooners, the North River sloops, and the New York pilot-boats were far famed for speed and beauty; while the American clippers were now known and admired throughout the maritime world.

It was in this year also that the Royal Yacht Squadron presented a cup to be sailed for at Cowes by yachts belonging to the yacht clubs of all nations, which, as every one knows, was won by the *America*, representing the New York Yacht Club.

Up to 1860 and the beginning of sectional belligerency that led to the Civil War, the steam tonnage of the United States outstripped in both total volume and periodic increase that of Britain, but the development of merchant shipping was still primarily in the realm of sail except for specific trades or specific purposes, notably the ocean mails, for which steam vessels were peculiarly adapted. Britain, being an island kingdom, had more incentive to develop steam mail tonnage than had the United States, and this geographical and political factor gave great emphasis to the economic, which existed in the need of the utilization of domestic natural resources, i.e., iron and coal. The steam tonnage of the British Empire—mostly engaged in deep-sea trade—increased from 204,654 tons in 1851 to 417,717 tons in 1856; whereas the steam tonnage of the United States engaged in overseas carrying trade increased from 62,390 tons in 1851 to 115,045 tons in 1855, but decreased to 89,715 tons in 1856. Referring to these statistics, Captain Clark says: "It should be noted that while a large proportion of the steam tonnage of Great Britain consisted of iron vessels, many of them being screw steamers, the steam vessels of the United States were very nearly, if not all, still constructed of wood and propelled by side-wheels." The earliest British figures available for tonnage engaged solely in foreign trade are those of 1849, and a comparison of the United States and United Kingdom tonnage registered for foreign trade for the years 1849 and 1860 shows a greater gain in both sail and total marine tonnage engaged in foreign trade in the United States than in Britain during this eleven-year period, although steam in foreign trade in Britain showed a gain greater by far than did that of the United States during these years.

	Sail		Steam		Total	
Year	U. S. A.	Britain U. K.	U. S. A.	Britain U. K.	U. S. A.	Britain U. K.
	Tons	*Tons*	*Tons*	*Tons*	*Tons*	*Tons*
1860................	2,448,941	2,804,610	97,296	277,437	2,546,237	3,082,047
1849................	1,418,072	2,040,344	20,870	48,693	1,438,942	2,089,037
Increase.............	1,030,869	764,266	76,426	228,744	1,107,295	993,010
Increase as a percentage.	72.7	37.4	366.0	469.0	76.8	47.5

Whereas there was a decline of 6 per cent in the transportation of American exports and imports in United States bottoms between 1850 and 1860, it is extremely doubtful that there was any decline in American shipping engaged in foreign trade prior to the Civil War —and this notwithstanding the post-Gold Rush (and California boom) depression. During the clipper ship era and the entire decade preceding the Civil War, American ships were conducting a great and profitable business as ocean carriers between foreign countries, especially between the East and European ports. Eugene T. Chamberlain, U.S. commissioner of navigation, in a report to the secretary of the treasury on October 19, 1901, said:

The figures suffice to show that up to 1860 the United States were drawing near to the United Kingdom in the struggle for the world's ocean carrying trade; that in the general application of steam to the purposes of navigation we had made as rapid and extensive progress as Great Britain, and that Great Britain's one point of superiority over the United States up to this time was in the application of steam to the foreign trade, especially for ocean mail purposes. . . . It is perfectly evident that an expenditure of about $53,000,000 by the British Government on ocean steamships [excluding amounts paid to British East India and Cape Colony lines, the Channel, European, and minor lines] in the earlier decades of ocean steamship navigation (prior to April 1860) must have exerted a powerful influence on the development of British steam navigation and on the improvement and extension of British shipyards devoted to that form of construction. The amount is much greater than the first cost of the steamships of the five companies [Royal Mail, Cunard, P. and O., Pacific Steam Navigation Company, and Allan Line]. The matter for surprise is that with this very large expenditure British steam shipping in foreign trade in 1860 had attained only the figure of 277,437 net tons.

The stated purposes of British mail subsidies, from the first, have been (1) military, (2) political, and (3) commercial, and it was said at the dawn of the twentieth century:

Throughout the past century the ocean carrying trade was and it now is one of the chief sources of the wealth of Great Britain and the mainstay of British commerce. . . . The United States between 1840 and 1860 were overtaking Great Britain as a commercial maritime power. . . . Threatened by the conceded superiority and economy of American sailing vessels, Great Britain, in the decades immediately following the application of steam to ocean transportation, naturally turned her attention to the development of steamships and steamship building. . . . Steam gave Great Britain the opportunity to neutralize the imminent leadership of the United States on the oceans. To be prepared for her only possible rival on the seas at the time, Great Britain spent sums large for the times on the military development of her steam navigation. . . . The bulk of the British mail steamship subsidies was paid to British steamship lines, which with their connections environed the Atlantic coast of the United States—the only maritime rival of Great Britain at the time.

W. S. Lindsay, in his British work HISTORY OF MERCHANT SHIPPING, states that the original vessels of the subsidized British steamship companies "were well adapted for one of the objects government had then in mind—the creation of a fleet of a class of large and strongly built merchant steamers which could be made use of in the event of war; hence all these vessels were built to carry heavy guns when necessary so as to be serviceable for the purpose of the navy at a comparative small subsequent outlay." The British contracts with the subsidized mail steamship companies provided that the steamships should be reserve naval vessels and should at times be commanded by naval officers. Chamberlain wrote that British writers of the late nineteenth century, "to whom, as a rule, the theory of government assistance to private enterprise is repugnant," have been loath to concede that "in that branch of human activity in which she [Britain] particularly excels," subsidies were the foundation of her success. However, such is the fact, for the use of metal for ships' hulls and the American Civil War followed the adoption of the British plan to encourage deep-sea steamship building and operation in the national interest and to found establishments for building in quantity marine engines, boilers, and auxiliary machinery of size and quality. As Chamberlain says, no arguments can obscure the fact "that Great Britain's early expenditures on fast ocean steamships created a demand for that type of marine construction, gave British shipbuilders orders in the execution of which they were able to effect both economies and improvements in construction, and gave shipowners some guaranty that the investment of capital in this form of commercial enterprise was to an extent insured by the government."

Later, the British Government favored and gave support with public money to the building of iron vessels and screw-propelled steamships and naval requirements, with contracts given to private establishments, which built iron shipbuilding and marine engine, boiler, machinery, armor, and armament plants of the type desired. The United States took a long time to profit by the experience of the British and other foreign nations that aspired to be marine powers, and the sizable, modern metal shipbuilding plants established in the country toward the end of the 1800's and the turn of the century owe their creation, their development, and their continued existence primarily to government contracts. The building of the new United States Navy in the 1880's gave encouragement to the construction of steel merchant vessels and hastened the transition from wood to steel and, to some degree, from sail to steam.

In the 1840's and 1850's, the United States led Britain in marine steam engineering, and the finest ocean steamships afloat were the Collins Line vessels running on a fast and regular schedule between New York and Liverpool. The wood paddle-wheel American steamers that rounded the Horn and established a reliable line between San Francisco and China were unequaled in their day. The United States led in the development of the screw propeller, but because of prevailing internal national conditions did not encourage by subsidies foreign trade steamship lines and did not succeed in the development of iron and coal as natural resources —as did Britain, which had been forced into it in shipbuilding because of a dearth of timber. A divided Congress eliminated real ship subsidies in the fifties, before the Civil War, and talked of paying only a relatively low price for carrying the mails. Britain has maintained that its mail contracts are competitive (open to all bidders) and that the subsidy, or mail pay, "is only what the service is worth." However, it is significant that mail contracts are given to only the British lines that the government wants to have such subsidies and that as late as 1897, when Britain was practically supreme on the ocean, the British postmaster general, in his report on carrying overseas mail, showed that the subsidies paid were 7¼ times the total mail receipts for the service.

American political economists have generally sought to justify the action of Congress in withdrawing steamship subsidies because of the extravagance and inefficiency of the Collins Line, which, notwithstanding the pronounced financial help received for a time, operated throughout its seven or eight years of life at a heavy loss. Edward K. Collins, the founder of the Collins Line of transatlantic wood steamships, was an experienced owner and operator of sailing packets, but he let his enthusiasm run away with him when he set out to "beat the Cunard," build the best and biggest steamships, and supply the finest mail, passenger, and express freight service in the world. He proposed to build vessels of 2,000 tons, but actually constructed expensive massive wood hulls, iron-strapped, of 3,000 tons and 300 ft. length that were admittedly "the most luxurious" as well as "the largest and fastest liners ever laid down." But Collins was a sailing ship man, and although he was an expert in knowledge and operation of such vessels, he knew nothing whatever about steamships and their machinery and was in the hands of U.S. naval engineers, who furnished the designs, and of the engineering shops, which built the machinery with inadequate facilities after expensive delays, for which he was in no way responsible. At no time was there any competent and authoritative United States department of government to decide on plans, construction facilities, schedules, and costs or to supply needed encouragement and permanent support, and the natural result was disorganization, delays, and high expenses.

The Cunard Line, already well established in the field and with the British Government behind it, fought the competition of the Collins Line by building new vessels and by lowering rates, but the Collins steamships were faster and "extremely popular with the passengers, because of their size, appointments, and service." The Collins Line commenced operations in 1850, and in 1852 it carried 50 per cent more passengers westward and 30 per cent more eastbound than the Cunard Line. The British increased the subsidy paid the Cunard from £145,000 to £173,340 ($843,600) per annum and took steps to see that this line was well and efficiently operated and had sufficient government support so that it could compete successfully with the Collins Line, which the British refused to view as supplementary steam transatlantic packet service but saw rather as a direct challenge to their supremacy in the realm of steam. Britain, from the first, was behind its subsidized steamship lines with intelligence and the full power of British organized knowledge and experience and the weight of a single-minded government that had only one objective. The American builders, owners, and government were erratic; there was no sound plan, no real head, and the question of subsidized steamships soon became a political football. In 1854 the Collins liner *Arctic* was lost by collision through no fault of the line or command. In 1855 the Cunard put the new 3,766-ton iron side-wheeler *Persia* in the service, and when the American transatlantic steamship line greatly needed substantial constructive help in management as well as in finance, President Pierce, by the veto of a bill, caused its subsidy to be reduced 41 per cent. In 1856 the Collins Line suffered the loss of its second vessel, the *Pacific,* and when its new 4,144-ton *Adriatic,* built at a cost of $1,000,000, came out that year, the line was so impoverished that after making one voyage she was laid up and was later sold to the British. In 1858 the U. S. Government canceled all mail contracts and the Collins Line thereupon collapsed.

The Pacific Mail steamship service was greatly assisted by the Gold Rush to California, and having no foreign competition proved profitable. When the payment of American steamship subsidies stopped in 1859 (with the country divided politically and the Civil War approaching), the total outlay—originating with the act of March 3, 1847, to develop and support steamship lines by contract subsidies—had been about $13,900,000, of which the transatlantic lines had received $7,250,000 (Collins Line, $4,500,000; the Bremen Line, $2,000,000; and the Havre Line, $750,000), and the lines from the East Coast to California via Panama had been paid $6,650,000 (Atlantic side, $2,900,000; the Pacific Mail line, $3,750,000). These total subsidies represented about a quarter of the amount Britain had paid up to that time, but because of the way things were handled, Britain got much more out of the money spent. Only the American Pacific Mail line survived the poor planning and mismanagement of the United States Government. Private capital—and not the U. S.—built the railroad across the Isthmus of Panama, which was in operation in 1855, but the erratic policies and incompetency of government and the lack of any sound co-ordinated and co-operative national plan to encourage foreign trade as well as steamship building and operation caused American investors to decline to become further interested in such risky ventures, both during and after the Civil War. With the right sort of national government policy, the United States would have turned to deep-sea steam in the forties and to iron screw steamers in the fifties and led Britain in the revolutionary development that—because of American division, politics, skepticism, and later indifference—caused Britain to become unquestionably the Mistress of the Seas, while the United States turned its attention to continental development and its ocean commerce over to the foreigners, on whose metal steamships it became dependent as the century advanced for the carrying of 92 per cent of its exports and imports.

The United States relinquished its newly won crown as Mistress of the Seas to Great Britain when the Congress of a divided and internally turbulent country decided not to subsidize its ocean-going steam packets to compete with British lines heavily subsidized by their government. The result was that British steam drove not only American sail but also American steam from the North Atlantic in a trade where the United States enjoyed a practical monopoly because of quality of both vessels and service. The Civil War wrote finis to America's ambitions as a leading or even a great sea power, but the end would have been pretty much the same if the United States had not followed Britain in abandoning wood as a shipbuilding material for foreign trade vessels and had not featured screw propulsion in iron or steel ships for deep-sea trade. America was losing its leadership in certain foreign trade routes to British steamships when the Civil War broke out, but if it had held its position with wood paddle-wheel steamers for a term of years, it would have been outclassed in the late sixties and seventies unless it had taken up earnestly the building and operation of iron screw-propelled steamers in the place of wood sail. When the change from sail to steam came, Britain enjoyed a truly amazing preferential position, for as an aggressive and imperialistic world maritime power, it had established coaling stations and conditioning plants for its steamships on every ocean trade route in every part of the globe. Britain was wide-awake and farsighted in mid-nineteenth century as it saw America topple the mother country off its long-held throne; but the United States, because of a number of influencing conditions and circumstances, relinquished its leadership and, emulating Rip Van Winkle in decades of somnolence, woke up later to find itself a fourth rate marine power and, what was even worse, with no unified and harmonious national desire to improve the condition along sound economic mercantile and naval lines and work back to a position of national dignity, independence, and honor.

The first World War of the twentieth century (1914-1918) demonstrated in striking fashion the importance of a nationally owned merchant marine. But even the economic handicaps and embarrassments suffered by the United States in this war due to a lack of merchant tonnage and its effect upon the military efforts of the nation failed to bring the truth home to the people throughout the length and breadth of the land of the country's need of an adequate, sizable, and modern deep-sea merchant marine, and a second World War was necessary to convince Americans of their helplessness unless they owned and operated their own merchant fleet in foreign trade and had a navy to protect it and compel belligerents to honor the flag. The official figures of the United States for 1914 give total imports and exports as $4,258,504,805: carried on foreign vessels, $3,417,108,756; carried on U. S. A.-owned vessels, $368,359,756; total imports and exports entering and leaving the United States by sea, $3,785,-468,512. This means that in 1914, at the commencement of World War I, foreign vessels handled 90.3 per cent of the foreign ocean trade of the United States. Yet in the political fight against subsidizing ships to handle American commerce, Secretary of the Treasury McAdoo said that the total value of American exports for the year ending June 30, 1914, was $2,047,755,872 and that the total value of all American ships engaged in foreign trade was $69,000,000, or only 3.4 per cent of the annual value of exports, and, with the prevalent political prejudice, ignorance, and shortsightedness, he added: "It is pertinent to ask which of these interests is entitled to the superior consideration of the government, the farmers and producers, the merchants, manufacturers and businessmen throughout the entire country whose combined activities represent our vast export trade, . . . or the owners of the comparative few American steamships."

If the value of United States ships engaged in foreign trade in 1914 stated by McAdoo as $69,000,000 was correct, then this value represented only 1.8 per cent of the country's stated value of combined imports and exports, a situation that, aside from being disturbing and humiliating, should have eloquently proven the impossibility of operating American ships in foreign trade without subsidies to cover increased costs. In the early days of the war, the Senate report on the shipping, says, "We cannot rest content while over 90 per cent of our commerce is carried under foreign flags," and the House report says, "We are not content to permit 92 per cent of our commerce to be carried under foreign flags." Because of dire need, the country feverishly sought to build and operate ships as a war measure, but nothing constructive and of permanent value, with an eye to the future, was accomplished during a period of great stress. When the war started, the United States owned a few ships that were operating in foreign trade in the Pacific, but the Seamans Act of March 4, 1915, whereas most worthy as far as intentions were concerned, promptly drove the American flag from the Pacific Ocean. Only a nation as ignorant of fundamental facts and as politically stupid as the United States could have been guilty of such destructive legislation, particularly in times of war. During World War II, the absolute need of both an adequate merchant marine and a navy has been so clearly demonstrated that it is hoped that the issue of subsidizing and maintaining a foreign trade merchant fleet in the national interest has been lifted clear of politics.

Marine Tonnage and Foreign Commerce in the Nineteenth Century, with Comparative Annual Statistics for the Period 1816-1901 Inclusive

The following statement, supplementing generally similar figures given for earlier years (as far back as records are available), shows comparatively for each year during the eighty-five-year period 1816-1901 the total tonnage of the United States merchant marine and that of vessels registered for foreign trade; the tonnage of sailing vessels and of all vessels built in the United States and documented; the value of foreign commerce; and the percentage of total foreign commerce carried in American bottoms:

Fiscal Year Ending	Tonnage of Total U. S. Merchant Marine	U. S. Shipping Registered in Foreign Trade	Gross Tonnage of Vessels Built in the U. S. and Documented during the Year: Sailing Vessels	Total All Vessels	Value of Foreign Commerce	Percentage of Total Foreign Commerce Carried in American Ships: Exports	Imports	Combined Exports and Imports
Dec. 31,		*Tons*						
1816.....	1,372,219	800,760	131,667	135,186	$229,023,052	68.0	73.0	70.5
1817.....	1,399,912	804,851	86,393	87,626	186,921,569	74.0	79.0	76.5
1818.....	1,225,185	589,954	82,421	87,346	215,031,133	80.0	85.0	82.5
1819.....	1,260,752	581,230	79,379	86,670	157,267,521	82.0	77.0	84.5
1820.....	1,280,167	583,657	47,784	51,394	144,141,669	89.0	90.0	89.5
1821.....	1,298,958	593,825	55,856	57,275	109,117,157	84.9	92.7	88.7
1822.....	1,324,699	582,701	75,347	77,569	141,221,796	84.1	92.4	88.4
1823.....	1,336,566	600,003	72,758	75,857	140,807,414	87.4	92.1	89.9
1824.....	1,389,163	636,807	86,852	92,798	141,141,277	88.7	93.4	91.2
1825.....	1,423,111	665,409	109,547	116,464	180,927,643	89.2	95.2	92.3
1826.....	1,534,191	696,221	118,094	130,373	150,984,300	89.6	95.0	92.5
1827.....	1,620,607	701,517	97,475	106,456	145,642,885	87.5	94.3	90.9
1828.....	1,741,392	757,998	92,879	98,964	145,041,293	84.5	91.4	88.9
1829.....	1,260,798	592,859	68,216	79,408	134,523,566	86.0	93.0	89.5
1830.....	1,191,776	537,563	51,491	58,560	134,391,691	86.3	93.6	89.8
1831.....	1,267,846	538,136	80,231	85,556	168,180,831	80.6	91.0	86.5
1832.....	1,439,450	614,121	129,143	144,544	176,642,365	75.8	89.4	83.1
1833.....	1,606,151	648,869	150,758	161,492	188,576,675	75.5	90.7	83.8
1834.....	1,758,907	749,378	105,332	118,389	210,869,915	74.4	89.0	83.0
Sept. 30,								
1835..... (9 months)	1,824,941	788,173	64,338	75,107	251,980,097	77.3	90.2	84.5
1836.....	1,882,102	753,094	93,016	116,230	300,917,858	75.4	90.3	84.3
1837.....	1,896,686	683,205	92,458	125,913	241,915,930	77.6	86.5	82.6
1838.....	1,995,640	702,962	91,747	115,905	200,948,858	82.8	90.6	84.2
1839.....	2,096,479	702,400	100,363	125,260	268,748,629	78.3	88.7	84.3
1840.....	2,180,764	762,838	106,518	121,203	221,927,638	79.9	86.6	82.9
1841.....	2,130,744	788,398	100,117	123,660	234,775,015	77.8	88.4	83.3
1842.....	2,092,391	823,746	105,256	129,806	195,953,066	76.3	88.5	82.3
June 30,								
1843..... (9 months)	2,158,603	856,930	50,050	63,888	125,259,153	77.0	77.1	77.1
1844.....	2,280,096	900,471	71,507	103,537	208,350,438	70.5	86.7	78.6
1845.....	2,417,002	904,476	112,362	146,042	219,224,433	75.8	87.3	81.7
1846.....	2,562,085	943,307	141,844	188,203	227,497,313	76.1	87.1	81.7
1847.....	2,839,046	1,047,454	193,403	243,633	279,165,947	65.3	77.2	81.1
1848.....	3,154,042	1,168,707	265,549	318,075	286,829,159	71.1	82.9	77.4
1849.....	3,334,016	1,258,756	213,970	256,988	281,557,371	68.0	81.4	75.2
1850.....	3,535,454	1,439,694	227,997	279,255	317,885,252	65.5	77.8	72.5
1851.....	3,772,439	1,544,663	221,146	299,472	399,686,688	69.8	75.6	72.7
1852.....	4,138,440	1,705,650	269,822	355,356	374,424,629	66.5	74.5	70.5
1853.....	4,407,010	1,910,471	332,339	427,494	467,266,547	67.1	71.5	69.5
1854.....	4,802,902	2,151,918	447,216	536,046	534,847,588	69.3	71.4	70.5
1855.....	5,212,001	2,348,358	510,690	583,450	476,718,211	73.8	77.3	75.6
1856.....	4,871,653	2,302,190	404,054	469,293	591,651,733	70.9	78.1	75.2
1857.....	4,940,843	2,268,196	304,345	378,804	642,252,102	60.2	71.8	70.5
1858.....	5,049,808	2,301,148	179,338	244,712	535,349,928	75.0	72.0	73.7
1859.....	5,145,038	2,321,674	121,297	156,602	624,235,392	69.9	63.7	66.9
1860.....	5,353,868	2,379,396	145,427	214,797	687,192,176	69.7	63.0	66.5
1861.....	5,539,813	2,496,894	172,208	233,194	508,864,375	72.1	60.0	65.2
1862.....	5,112,164	2,173,537	119,626	175,075	380,027,178	54.5	44.8	50.6
1863.....	5,155,056	1,926,886	216,812	311,045	447,300,262	40.0	43.3	41.4
1864.....	4,986,400	1,486,749	268,240	415,740	475,285,271	30.0	24.6	27.5
1865.....	5,096,782	1,518,350	238,109	383,805	404,774,883	26.1	29.9	27.7
1866.....	4,310,778	1,387,756	210,963	336,146	783,671,588	37.7	25.1	32.2
1867.....	4,304,487	1,515,648	231,518	303,528	690,267,237	39.1	28.0	33.9

Fiscal Year Ending	Tonnage of Total U. S. Merchant Marine	U. S. Shipping Registered in Foreign Trade	Gross Tonnage of Vessels Built in the U. S. and Documented during the Year: Sailing Vessels	Total All Vessels	Value of Foreign Commerce	Percentage of Total Foreign Commerce Carried in American Ships: Exports	Imports	Combined Exports and Imports
June 30,		Tons						
1868.....	4,351,759	1,494,389	142,742	285,304	$ 639,389,339	36.6	33.0	35.1
1869.....	4,144,641	1,496,220	149,029	275,230	703,624,076	34.9	31.3	33.1
1870.....	4,246,507	1,448,846	146,340	276,953	828,730,176	37.7	33.1	35.6
1871.....	4,282,607	1,363,652	97,176	273,226	963,043,862	32.6	31.0	31.8
1872.....	4,437,747	1,359,040	76,291	209,052	1,070,772,663	29.8	26.8	29.1
1873.....	4,696,027	1,378,533	144,629	359,245	1,164,616,132	25.7	27.0	26.4
1874.....	4,800,652	1,389,815	216,316	432,725	1,153,689,382	24.6	30.2	27.2
1875.....	4,853,732	1,515,598	206,884	297,638	1,046,448,147	23.7	29.2	26.2
1876.....	4,279,458	1,553,705	118,672	203,585	1,001,125,861	25.4	30.8	27.7
1877.....	4,242,600	1,570,600	106,331	176,591	1,053,798,346	23.7	31.5	26.9
1878.....	4,212,765	1,589,348	106,066	235,503	1,131,917,298	22.6	32.2	26.3
1879.....	4,169,601	1,451,505	66,867	193,030	1,156,217,216	17.6	32.6	23.0
1880.....	4,068,034	1,314,402	59,057	157,409	1,503,593,404	13.0	22.0	17.6
1881.....	4,057,734	1,297,035	81,209	280,458	1,545,041,974	13.3	19.9	16.2
1882.....	4,165,933	1,259,492	118,798	282,269	1,475,181,831	12.8	19.2	16.0
1883.....	4,235,487	1,269,681	137,046	265,429	1,547,020,316	13.4	20.7	17.0
1884.....	4,271,229	1,276,972	120,621	225,514	1,408,211,302	14.4	22.4	18.4
1885.....	4,265,934	1,262,814	65,362	159,056	1,319,717,084	13.7	21.3	17.0
1886.....	4,131,136	1,088,041	41,237	95,453	1,314,960,966	13.6	20.0	16.8
1887.....	4,105,845	989,412	34,633	150,450	1,408,502,979	12.2	18.6	15.4
1888.....	4,191,916	919,302	48,500	218,086	1,419,911,621	11.7	18.5	15.1
1889.....	4,307,475	999,619	50,570	231,134	1,487,533,027	11.6	17.0	14.3
1890.....	4,424,497	928,062	102,873	294,122	1,647,139,093	9.0	16.6	12.8
1891.....	4,684,759	988,719	144,290	369,302	1,656,540,812	9.3	15.9	12.5
1892.....	4,764,921	977,624	83,217	199,633	1,784,732,543	8.1	17.7	12.3
1893.....	4,825,071	883,199	49,348	211,639	1,626,082,075	8.8	15.5	12.2
1894.....	4,684,029	899,698	37,827	131,195	1,468,290,672	8.7	19.4	13.3
1895.....	4,635,960	822,347	34,900	111,602	1,456,403,388	8.2	15.5	11.7
1896.....	4,703,880	829,833	65,236	227,096	1,565,665,408	8.5	15.7	12.0
1897.....	4,769,020	792,870	64,308	232,232	1,714,829,043	8.1	15.0	11.0
1898.....	4,749,738	726,213	34,416	180,458	1,743,820,496	5.9	16.0	9.3
1899.....	4,864,238	837,229	98,073	300,038	1,806,876,063	6.9	12.4	8.9
1900.....	5,164,839	816,795	116,460	393,790	2,089,528,616	7.1	12.9	9.3
1901.....	5,524,218	879,595	126,165	483,489	2,151,935,411	5.8	12.1	8.2

When statistics for the tonnage of United States shipping and of the volume of foreign trade are viewed comparatively with the years, it is desirable—if a proper analysis is to be made—to consider in conjunction with these ship tonnage and value of ocean commerce (export and import) figures the growth of the United States in land area and in population. The following table records the increase in area, population, and density of population per square mile during each ten-year period from the first official census year of 1790 to that of 1900:

Census Year	Land Area Square Miles	Population	Population per Square Mile
1790................................	867,980	3,929,214	4.5
1800................................	867,980	5,308,483	6.1
1810................................	1,685,865	7,239,881	4.3
1820................................	1,753,588	9,638,453	5.5
1830................................	1,753,588	12,866,020	7.3
1840................................	1,753,588	17,069,453	9.7
1850................................	2,944,337	23,191,876	7.9
1860................................	2,973,965	31,443,321	10.6
1870................................	2,973,965	38,558,371	13.0
1880................................	2,973,965	50,155,783	16.9
1890................................	2,973,965	62,947,714	21.2
1900................................	2,974,150	75,994,575	25.6

A comparison of the United States marine tonnage engaged in foreign trade and of foreign commerce for the years 1801 and 1901—a century apart—is of interest.

Year	Tonnage United States Foreign Trade Shipping	Total Foreign Commerce	Foreign Commerce Carried on American Ships	Percentage of Total Foreign Trade (Exports and Imports) Carried on American Ships
	Tons			
1801	630,600 (all wood sail)	$ 204,384,000	$182,000,000	89.0
1901	879,600 (mostly steel steam)	2,151,935,000	176,000,000	8.2

During a century of time, with a phenomenal increase in population and national worth, the foreign trade of the country increased 10-½ times, but American ships carried less goods in foreign trade in 1901 than they did in 1801. Moreover, 1901 was a relatively good year, and the country's foreign trade in that year was $696,000,000, or 48 per cent, more than it was in 1895 and more than double what it was ($1,001,000,000) in 1876. The tonnage of American vessels in foreign trade first reached the million-ton mark in 1847 (1,047,454 tons). It gradually increased to 2,496,894 tons (practically all wood sail) in 1861. The Civil War operated to wreck the American merchant marine, and the tonnage dropped 1,109,138 tons (44-½ per cent) to 1,387,756 tons in 1866; it fell below the million-ton mark in 1887 (989,412 tons) and in 1898 was down to 726,213 tons—an amount well below the tonnage of 1805. The foreign trade shipping tonnage of 879,600 tons in 1901 can be compared with the 981,000 tons of 1810.

When the nineteenth century opened, shipbuilding in the United States "was on a firm foundation and seemed to be headed for a glorious future." Along the coast line and river banks from the Canadian border to South Carolina were located shipyards that were small individual or partnership affairs requiring but little capital and only a relatively moderate amount of credit, and building was generally co-operative and a community matter as far as personal services were concerned. A shipyard had virtually no plant or fixed capital investment, and the working capital was reduced to a minimum; as contract work predominated and was paid for when the vessel was sold or by the contractor's taking title to "a piece of the ship" in settlement of his bills. These small shipyards were located near and backed by the world's best, most abundant, and cheapest supply of timber suitable for the building of vessels, and transportation as well as raw material and construction costs were low. American ships were of acknowledged good quality and were improving. They generally—and frequently conspicuously—outsailed foreign competitive vessels, and American ships quite often received preferential freight rates because of their good construction, the excellent condition of delivered cargoes, and the relatively short length of passages between ports. The shipping industry that purchased and used these vessels was "extraordinarily vigorous," resourceful, and profitable. It was, furthermore, appealing to seaboard residents in both the investment and operating fields, and entry into the business was easy.

In the early 1800's, American shipowners were securing most of the direct foreign traffic with cheaply built and operated and excellently managed, manned, and conditioned ships, and they were also extensively and profitably engaged in the competitive transient, or tramp-ship, business between foreign ports. As Hutchins says, "Secure in their superiority," United States shipping interests and the marine fraternity in general "were pressing the government to obtain a relaxation of the discriminations established against them by foreign states." Occupying a preferential position in relation to that of any competitive maritime power in the realm of cheap and good shipbuilding and ship operation, the United States naturally wanted to see all barriers removed in foreign trade, and America, because of its natural and developed advantages in the early nineteenth century, stood to benefit tremendously by the "Freedom of the Seas."

The close of the nineteenth century saw the situation entirely changed, and in marine matters the United States had become as pathetically weak as it had been outstandingly strong and favored in the early 1800's. Deep-sea wood shipbuilding ended in 1893 with the building on the Kennebec of the *Aryan* of 2,123 gross tons, the last wooden full-rigged ship, which followed by a year the construction of the mammoth four-masted shipentine *Roanoke* of 3,539 tons on the same river. Wood schooners for the coastwise trade continued to be built during the first decade of the twentieth century and in a rapidly declining and desultory fashion until the first World War; but for all practical purposes wood shipbuilding reached its end as the nineteenth century passed, for by then the supply of ship timber in the United States was virtually exhausted, skilled artisans were no longer available, and the operation of wooden sailing ships had become unprofitable. Few boys and young men followed their fathers as shipwrights and artisans interested in shipbuilding after the late seventies and practically none after the mid-eighties. In the 1890's and on, New England ship carpenters, caulkers, riggers, etc., were middle-aged and old men. There were fourteen wood shipyards employing over a thousand men in Bath, Maine, in 1889, but only three or four survived after 1906, building coastwise schooners and tow barges, and in that year it was definitely stated that "the construction of these vessels is unprofitable." The Sewalls closed their wood shipbuilding yard in 1893, convinced that wooden ships could no longer compete in cost, carrying capacity, and economic operation with metal vessels, and for a decade they embarked on steel sailing ship construction until they finally discontinued all building in 1902. Newburyport, Mass., and Kennebunkport, Maine, launched their last wood schooners in 1901, Boston in 1905; Bath's big New England Ship-Building Company, said to have been "the best fitted and most experienced wood shipbuilding yard in the whole world," ceased all operations in 1906, but Bath yards continued to build wood schooners until 1921 and bald-headed schooner-rigged wood tow barges until 1923.

By the last decade of the nineteenth century, American deep-sea wood shipbuilding was doomed not only because of high costs, difficulties in getting labor, and the almost impossibility of obtaining raw materials but also because wood ships could no longer be operated even by highly resourceful Yankees in competition with iron or steel sailing ships—not to mention modern steel steamships operating economically at high pressure with triple-expansion engines. In the numerous American seaboard shipbuilding and shipping towns, bankruptcy and decay were prevalent. The United States had never, as had Britain, taken to iron shipbuilding, and after national enterprise had crossed the continent with railroads and progressed along lines of developing the country's natural resources, it came as somewhat of a shock to patriotic Americans interested in economics that national sectionalism, the opening of the West, the tying of the parts of the country together by railroads, the use of natural resources, and the development of industry and public utilities had caused the United States to withdraw from the sea, discourage shipbuilding, and turn its vast foreign carrying trade over to the foreigner. Construction of metal vessels in the United States had been practically limited to steamships and steamboats for the coastwise trade. After the Civil War, even the United States Navy lapsed into somnolence, and in 1880 it consisted of only some "thirty wooden corvettes and sloops, fit for service abroad," of mediocre quality. At that time, America stood twelfth in naval strength, after Denmark, Chile, and China, and did not possess a single modern metal war vessel. Commander E. J. King, U.S.N., declared, "Our most immediate need is a fleet of unarmored cruisers to replace the obsolete types that have neither guns to fight nor speed to run." Between 1860 and 1890, the national population doubled from thirty to sixty million, manufactured products increased fivefold, and in export trade the United States advanced from fourth to second place among the nations of the world; but despite a phenomenal growth of foreign trade, the American merchant marine was permitted to continue in a steady decline, so that even Mahan admitted that, with a vanishing merchant fleet, one of the chief motives for naval power was removed.

In March 1883, Congress appropriated money to commence the construction of a modern United States Navy, and three small unarmored cruisers and a still smaller dispatch boat were ordered built. These relatively puny vessels, the *Atlanta* (3,000 tons), *Boston* (3,000 tons), *Chicago* (5,000 tons), and *Dolphin* (1,486 tons), became known as the "A, B, C, and D of the White Squadron." During the late years of Cleveland's administration (1885-1889), America's first "armored" cruiser, the *Maine* of 6,672 tons, the first so-called "second-class battleship," the *Texas* of 6,315 tons, and the first torpedo boat, the *Cushing* of 105 tons, were authorized; also the "protected cruisers" *Baltimore* (4,413 tons) and *Olympia* (5,870 tons), which were fitted with a supposedly heavy steel lower deck. The first real fighting ships of the new navy were the 10,288-ton battleships *Indiana, Massachusetts,* and *Oregon,* authorized in 1890, and the armored cruisers *Brooklyn* (9,215 tons) and *New York* (8,200 tons) and battleship *Iowa* (11,340 tons), authorized in 1892. These vessels of the "New White Fleet" formed the backbone of the United States Navy in the Spanish-American War of 1898, and it is evident that they were not built any too soon, although the destruction of the *Maine* in Havana Harbor on February 15, 1898, by an outside mine undoubtedly brought about hostilities.

The construction of steel vessels for the navy was primarily responsible for the building, development, and modernizing of the metal shipbuilding yards in the United States and of the great improvement in construction facilities that would permit the best-equipped and largest yards to build all classes of steel vessels for the merchant marine. If the government in the fifties had encouraged steam packets by subsidies—as did other nations—and following the Civil War had built iron warships and given encouragement to the iron industry and the construction of iron shipbuilding plants and engineering shops by substantial orders, the United States (and not Britain) would have led in the development of iron screw steamships for ocean trade, and America would not have been in the humiliating position in which it found itself as the nineteenth century waned, with practically no merchant marine to handle a reasonable percentage of its foreign trade and no navy to protect its flag abroad.

Wood ships were built in yards with a minimum of site improvements and real estate, building, and equipment investments, but iron ships (if only sail-propelled or even tow barges) had to be built in plants requiring sizable buildings, machinery, furnaces, tools, a power plant, and a real mold loft, with facilities for making full-sized wood templates for each frame of the vessel. Furthermore, steamships required the shop facilities for building engines and boilers, with extensive investments in machinery, etc. Whereas individuals—usually of limited means and credit—generally built wood ships, corporations owned nearly all the iron shipyards, and the plants were necessarily sizable and expensive. Without the support of naval contracts, it is doubtful if a single first-class iron shipbuilding plant would have been constructed in the United States, and when the new American Navy was built, conditions as to the national merchant marine were so bad that there was no demand to build metal merchantmen in the United States, for they could be neither built nor operated in the world's trade in competition with British and other foreign vessels. Freedom of the seas gives the ocean-carrying trade to the nation or nations whose vessels furnish the best transportation service at the lowest cost, and the United States by 1900 had become one of the world's most expensive carriers in the realm of steam, although it was still able by shrewd resourcefulness to pick up a little business in certain special trades with its excellently operated and high-class square-rigged sailing vessels.

The total documented tonnage of the United States on June 30, 1901, of 5,524,218 tons had been exceeded but once in the country's history—and that on 1861 mid-year, when, just as the Civil War broke out, the total national tonnage was 5,539,813 tons. The elements of growth and decline in certain prime subdivisions that collectively give these totals, set forth herewith, show that in a period of forty years all the growth was in a protected coastwise and inland lake and water trade and that the losses were extremely heavy in foreign trade and the deep-sea fisheries.

Trade	Tonnage 1861	Tonnage 1901	Change in Forty Years Gain	Change in Forty Years Loss	Expressed as a Percentage Gain	Expressed as a Percentage Loss
Foreign	2,496,894	879,595	—	1,617,299	—	64.8
Coastwise and inland	2,704,544	4,582,683	1,878,139	—	69.5	—
Fisheries	338,375	61,940	—	276,435	—	81.7
Total	5,539,813	5,524,218	—	15,595	—	0.3

Of the documented tonnage of 5,524,218 tons as of June 30, 1901, a total of 3,623,201 tons (or 65.6 per cent) was in wooden vessels, and 1,901,017 tons (or 34.4 per cent) of iron or steel construction. Only 15.9 per cent of the total tonnage was registered for foreign trade, and a large part of this was over-age and unprofitable wood construction. Whaling tonnage had dropped from 198,594 tons in 1858 to 9,534 tons in 1901 and cod and mackerel (deep-sea) fisheries tonnage from 204,197 tons in 1862 to 50,679 tons in 1899 and 52,444 tons in 1901. Of the registered tonnage (steam, sail, and barges) on June 30, 1901, a total of 429,722 tons (or 48.3 per cent) was steam, and of the total tonnage of the merchant marine, 2,920,-953 tons (or 52.9 per cent) were steam. The registered tonnage for foreign trade, sail-propelled, declined steadily from 2,540,020 tons in 1861 to 443,645 tons in 1898 and was 459,407 tons (including barges) at mid-1901; whereas steam registered tonnage, which was 115,045 tons in 1855, dropped to 78,027 tons in 1858 and after ups and downs was 146,604 tons in 1880. Following this, it gradually gained, reaching 360,030 tons in 1899 and 429,722 tons in 1901, of which 63,105 tons were wood construction. The total tonnage built in the United States during the fiscal year ending June 30, 1901, was the second largest in the country's history up to that time, and a comparison with the record fiscal year of the nineteenth century is of interest.

	Year Ending June 30		Difference between the Two Years		
				Percentage	
	1855	1901	Tonnage	More	Less
	Tons	*Tons*			
Sailing vessels and barges	510,690	209,898	300,792	—	58.9
Steam vessels	72,760	273,591	200,831	276.0	—
Total	583,450	483,489	99,961	—	17.1

The following table shows the geographical distribution, motive power, material of construction, and nature of trade of the vessels of the United States documented as of June 30, 1901, and built during the boom fiscal year ending as of that date:

Geographical Location	Documented as of June 30, 1901 Number of Vessels	Documented as of June 30, 1901 Gross Tonnage	Built during Fiscal Year Ending June 30, 1901 Number of Vessels	Built during Fiscal Year Ending June 30, 1901 Gross Tonnage
Atlantic and Gulf of Mexico	16,769	2,854,639	823	236,948
Pacific	2,451	713,831	271	54,568
Great Lakes	3,253	1,706,294	175	169,085
Western rivers	1,584	249,454	311	22,888
Total	24,057	5,524,218	1,580	483,489
Sail—wood	16,469	2,340,908	514	104,419
Sail—iron and steel	174	262,357	12	21,746
Total sail	16,643	2,603,265	526	126,165
Steam—wood	6,214	1,282,293	405	37,463
Steam—iron and steel	1,200	1,638,660	101	236,128
Total steam	7,414	2,920,953	506	273,591
Barges and canal boats (generally wood)	3,412	669,908	548	83,733
Total	27,469	6,194,126	1,580	483,489

At the end of the nineteenth century, the steady decline in registered sail tonnage was arrested somewhat by the use of barges with short masts and small sail spread, which were towed to West Indian ports with coal, and by experimental transatlantic voyages of large schooners with cargoes of petroleum; but the bulk of the registered sailing fleet consisted of wood square-rigged vessels, and the new construction of square-riggers—built of steel after 1893—was considerably less than the annual loss in foreign trade sailing tonnage due to shipwreck, dismantling, and breaking up. In France steel sailing tonnage was encouraged by being paid a higher subsidy than steam tonnage, but in the United States and throughout the rest of the world, merchant sail was passing rapidly out of the picture at the commencement of the twentieth century. The following is a list of the square-rigged sailing vessels documented in the United States as of June 30, 1901, set forth as to rig, material used in construction, and domestic or foreign build:

	American-built		Foreign-built		Total	
	Number	Gross Tonnage	Number	Gross Tonnage	Number	Gross Tonnage
Ships						
Steel	6	18,997	3	6,717	9	25,714
Iron	2	4,023	8	14,442	10	18,465
Wood	85	151,155	—	—	85	151,155
Total	93	174,175	11	21,159	104	195,324
Barks						
Steel	1	1,570	4	6,003	5	7,573
Iron	—	—	10	11,600	10	11,600
Wood	139	120,608	3	1,909	142	122,517
Total	140	122,178	17	19,512	157	141,680
Barkentines						
Iron	—	—	3	2,450	3	2,450
Wood	76	47,706	1	302	77	48,008
Total	76	47,706	4	2,752	80	50,458
Brigs and brigantines						
Wood	28	10,670	2	789	30	11,459
Total steel	7	20,567	7	12,720	14	33,287
Total iron	2	4,023	21	28,492	23	32,515
Total wood	328	330,139	6	2,900	334	333,039
Grand total	337	354,729	34	44,112	371	398,841
Total ships	93	174,175	11	21,159	104	195,334
Total barks	140	122,178	17	19,412	157	141,590
Total barkentines	76	47,706	4	2,752	80	50,458
Total brigs and brigantines	28	10,670	2	789	30	11,459
Grand total	337	354,729	34	44,112	371	398,841

The following table gives a summary of the square-rigged vessels documented as of June 30, 1901, compared with those of certain preceding years, according to the report of the U.S. commissioner of navigation:

Year	Ships		Barks		Barkentines		Brigs and Brigantines		Total	
	Number	Gross Tons	Number	Gross Tons	Number	Gross Tons	Number	Gross Tons	Number	Gross Tons
1901	1	3,288	—	—	4	4,677	—	—	5	7,965
1900	1	3,292	—	—	1	755	—	—	2	4,047
1899	3	9,413	1	1,570	1	674	—	—	5	11,657
1898	—	—	—	—	—	—	—	—	—	—
1897	1	1,595	—	—	1	651	—	—	2	2,246
1896	—	—	—	—	2	1,647	—	—	2	1,647
1895	—	—	—	—	1	692	—	—	1	692
1894	1	3,004	—	—	2	1,528	—	—	3	4,532
1893	1	2,123	1	1,141	—	—	—	—	2	3,264
1892	1	3,539	1	1,469	3	2,159	1	495	6	7,662
1891	1	2,744	1	1,673	3	1,938	1	354	6	6,709
1890	2	5,288	2	1,945	7	5,462	1	171	12	12,866
1889	—	—	1	1,028	7	4,542	—	—	8	5,570
1888	—	—	2	1,412	—	—	—	—	2	1,412
1887	—	—	1	448	3	1,897	1	358	5	2,703
1886	—	—	—	—	3	1,506	—	—	3	1,506
1885	—	—	1	835	—	—	—	—	1	835
1884	7	15,001	2	1,851	2	1,206	—	—	11	18,058
1883	9	18,028	3	3,210	6	3,308	2	804	20	25,350
1882	8	15,125	2	1,885	8	4,309	—	—	18	21,319
1881	10	17,942	7	6,068	4	1,952	3	1,096	24	27,058
1880	2	2,881	3	2,686	2	858	3	986	10	7,411
1879	4	6,538	3	2,855	1	605	—	—	8	9,998
1878	5	8,967	16	13,739	—	—	2	816	23	23,522
1877	7	10,861	18	16,285	—	—	3	1,391	28	28,537
1876	3	4,757	11	10,383	4	1,993	1	491	19	17,624
1875	5	7,849	9	8,748	2	1,235	1	520	17	18,352
1874	8	13,017	10	10,536	3	1,715	1	458	22	25,726
1873	1	1,460	7	5,709	1	493	1	622	10	8,284
1872	1	1,289	2	2,888	—	—	2	591	5	4,768
1871	1	1,471	3	2,961	—	—	1	412	5	4,844
1870	1	1,487	2	1,793	1	397	—	—	4	3,677
1869	5	8,071	6	5,708	1	412	—	—	12	14,191
1868	2	2,535	5	4,470	1	515	1	119	9	7,639
1867	—	—	1	303	—	—	—	—	1	303
1866	—	—	2	1,780	—	—	2	695	4	2,475
1865	—	—	2	1,150	—	—	—	—	2	1,150
1864-1860	1	1,556	1	981	1	235	—	—	3	2,772
1859-1850	1	1,054	7	2,880	1	345	1	291	10	4,570
1849-1840	—	—	6	1,550	—	—	—	—	6	1,550
1835	—	—	1	238	—	—	—	—	1	238
Total	93	174,175	140	122,178	76	47,706	28	10,670	337	354,729

The era of construction of deep-sea square-rigged merchant sail came to an end in the United States in 1902 with the building of the four-masted steel shipentine *Atlas* of 3,381 tons by Arthur Sewall & Company, of Bath, Maine, for the Standard Oil Company, and the only foreign trade square-rigged vessels built in the country after June 30, 1901, were the four-masted steel shipentine *William P. Frye* of 3,374 tons, built by the Sewalls, of Bath, for their own account and documented in the autumn of 1901, and the *Atlas,* which followed in the first part of 1902. All the ships mentioned in the foregoing table as built after 1893 were steel four-masted shipentines, constructed at the yard of the Sewalls in Bath, and there were 8 of these vessels (5 built for their personal account and 3 for the Standard Oil Company), which were launched and completed during the years 1894-1902 inclusive. The bark of 1,570 tons documented in 1899 was the *Kaiulani,* also built by the Sewalls, whose fleet of steel square-riggers consisted of 9 vessels aggregating 29,450 tons. When the U.S. commissioner of navigation made his report at the close of the fiscal year June 30, 1901, there were 93 American-built ships afloat (6 steel, 2 iron, and 85 wood), the oldest of which was the *Dashing Wave,* a wood ship of 1,054 tons built in 1853 and, therefore, forty-eight years of age. Eleven ships (all wood) were over thirty years old, and 29 were over twenty-five and 57 over twenty years old. Only 12, or less than 13 per cent, of the total number of ships and about 8 per cent of the barks and 19 per cent of all the 337 square-riggers were less than seventeen years old.

The relation of sail to steam in mileage covered in foreign trade of every kind and nature at the turn of the century is obtainable from U.S. Government records for the calendar year ending December 31, 1900, which give the following general summary:

Type	Number of Vessels	Total Gross Tonnage	Average Tonnage per Vessel	Total Mileage Traveled	Mileage Traveled Percentage of Total
Steel steamers	116	302,036	2,604	2,857,994	31.45
Wood steamers	30	25,248	842	146,371	1.61
Total steam	146	327,284	2,242	3,004,365	33.06
Sail square-riggers	267	300,287	1,125	3,214,757	35.38
Sail schooners	635	278,793	439	2,868,108	31.56
Total sail	902	579,080	642	6,082,865	66.94
Grand total	1,048	906,364	864	9,087,230	100.00

It is significant that as late as 1900 two-thirds of the foreign trade mileage covered by United States vessels was by sail (about 95 per cent of which was wood) and only one-third by steam. The large percentage of the mileage in foreign trade credited to schooners (built of wood) is due primarily to there being 537 of these fore-and-afters employed in the Atlantic, mostly on voyages to the West Indies, Mexico, Central and South America, and Canada, and 98 in the Pacific trading not only with British Columbia, Mexico, and Central American ports but also with Australia, Oceania, and Asia. The average small size of all the American vessels in foreign trade (864 tons) is conspicuous, the steamers averaging only 2,242 tons, the square-riggers 1,125 tons, and the schooners 439 tons.

In 1890 the total registered tonnage for foreign trade of the United States (including 18,633 tons of sailing whalers) was 946,695 tons, of which only 197,630 tons, or 21 per cent, were steam. In 1901 the total registered tonnage had dropped to 889,129 tons, but steam had advanced to 429,722 tons, or 48 per cent, of the total, and out of a total of all tonnage of 5,524,218 tons registered, enrolled, and licensed for ocean, lake, river, and harbor work, steam represented 2,920,953 tons, or a scant 53 per cent. The British Lloyd's Register of 1901 reports that the United States had 1,003,795 gross tons of marine steam tonnage engaged in sea work (foreign and coastwise) as compared with 12,053,394 tons for the United Kingdom and 12,739,180 for Britain and colonies. The German steam tonnage is given at 2,417,410 tons, the French at 1,068,036 tons, the Norwegian at 810,335 tons, the Spanish at 734,557 tons, and the Italian at 657,981 tons. In sail, the British Lloyd's gives Britain at 1,602,767 net tons and, with its colonies, at 1,969,026 tons; while the United States is placed at 1,228,130 net tons for sea work, Norway 816,885 tons, Germany 488,372 tons, Italy 459,557 tons, and France 338,847 tons. The world's merchant fleet of vessels over 100 tons is placed at 24,008,883 gross tons (16,528 vessels) of steam and 6,591,627 net tons (12,563 vessels) of sail.

According to British Lloyd's, the marine tonnage of the world changed as follows during the period 1890-1901:

Year	Steam		Sail		Total	
	Number of Vessels	Gross Tons	Number of Vessels	Net Tons	Number of Vessels	Tons
1890	11,108	12,985,372	21,190	9,166,279	32,298	22,151,651
1901	16,528	24,008,883	12,563	6,591,627	29,091	30,600,510

The commissioner of navigation estimated that the "capital actually invested" in the private iron or steel shipbuilding establishments of the United States in 1900-1901 "undoubtedly" exceeded $68,000,000; the value of merchant vessels being constructed was stated at "approximately $36,000,000," and naval contracts called for an "expenditure of $78,000,000." However, he added that naval construction costs "cover in some instances a period of nearly four years, while the expenditures for merchant construction will only in rare instances cover so long a period as two years." (It is interesting to observe that the two largest and most expensive merchant steamships required over four years to build because of inadequate plant.) Of thirty-four listed iron shipbuilding plants (of every size and quality), ten were engaged on government work only, nine on both government and merchant work, and fifteen on merchant work only; of these, seven were on the Great Lakes, and the largest on the coast were later required to contract for naval work in order to keep going. All of the larger, better, more successful, and longer-lived yards were compelled not only to build government vessels but also actually to rely upon receiving such contracts for their continued solvency and existence. In wood shipbuilding days, probably not more than two or three million dollars represented the total national fixed investment for plants, land, improvements, buildings, and equipment, and the wood shipyards of 1855 turned out 2,027 vessels (1,781 sail and 246 steam) totaling 583,450 tons of merchant vessels, of which 510,690 tons were merchant sail; whereas all the iron and steel shipbuilding plants of the country as of June 15, 1901, were engaged in the building of 89 vessels totaling 355,645 tons (and some of these vessels took several years to construct). During the year ending June 30, 1900, the total national tonnage built and documented (wood, iron, steel, and composite) was 393,790 tons, of which 116,460 tons were sail, 202,528 tons steam, and a total of 74,802 tons was barge and canal-boat towing tonnage.

Many historians have written about the changing of American wood shipwrights into skilled iron shipbuilding craftsmen, but this is merely an erroneous surmise. American wood shipbuilders originally imported from England trained the colonists in the art of ship construction, and the ability to build ships was passed down in families from generation to generation. Prior to the Revolution, British wood shipbuilders emigrated in numbers to the American colonies, but after the Peace of 1783 shipbuilding was depressed for a term of years in the young republic, and emigration generally flowed westward across the Atlantic from Britain to Canada. Later, as the nineteenth century advanced, Scotch-Canadian shipbuilders of outstanding ability as well as young apprentices entered the United States from Nova Scotia, Quebec, Prince Edward Island, and Newfoundland, and during the last days of the building of wood merchant sail the skilled artisans were descended from old British wood shipbuilding stock that had migrated either directly to the British colonies before the War of the Revolution (or later to the young republic) or indirectly to the United States by way of Canada. Many of the greatest wood shipbuilders in the United States at the middle of the nineteenth century and to the days that marked the end of wood merchant sail or wood ship construction were Scotch-Canadians who had migrated to the United States. Among these men were Donald McKay, of Boston, the most famous of clipper shipbuilders; John MacDonald, of Bath, the greatest designer and builder of "Down Easters"; and Hugh Ramsay, of Perth Amboy, N. J., the last and best constructor of wood vessels around New York during the last two decades of the nineteenth century.

None of the leading wood shipbuilders turned from wood to iron and made a success of it, although William Cramp, born in Philadelphia of English stock in 1807 (apprenticed to Samuel Grice, wood shipbuilder, in 1823 and in business for himself in 1830), took two sons into partnership in 1857 and in the sixties discontinued the building of wood vessels. Whereas the Cramp firm "contracted with iron masters for services in connection with the erection of iron vessels," the Cramps did not begin the construction of iron hulls for their own account until 1866, when they built the iron steamer *William H. Aspinwall* of 202 tons. It was not William Cramp, the wood shipbuilder, but his sons—particularly Charles H. Cramp—who in the 1880's made the William Cramp & Sons Ship and Engine Building Company, of Philadelphia, the leading American iron shipbuilding company until the Newport News Shipbuilding and Dry Dock Company, of Newport News, Va., the New York Shipbuilding Company, of Camden, N. J., and the Fore River Ship and Engine Company, of Quincy, Mass., were built. William Cramp, the wood shipbuilder, never became an iron shipbuilder himself. Donald McKay, a builder of big, fine-lined, fast wood sailing vessels was not successful in his construction of vessels of any other type after he once attained fame with the *Flying Cloud* and the big Australian sailing packets for James Baines, of Liverpool. Donald McKay endeavored to build wood steam without any measure of success, but his halfhearted attempt to get into iron construction in the firm of McKay & Aldus resulted in failure, and he never built an iron vessel. A contemporary of McKay, William H. Webb, of New York, probably the greatest of all American wood shipbuilders, was a more technical and versatile man. He designed and built the finest merchant sail, but was also successful in the realm of steam—both merchant and naval—and was a pioneer in the building of steam-propelled ironclads. However, all of Webb's hulls were of wood construction, and he never built a single vessel of iron. Hugh Ramsay built wood sail, steam, or tow barges; but when the demand arose for iron construction and, under the influence of a son, he changed his yard to build iron vessels, his fortune quickly waned, and neither he nor his sons ever launched an iron vessel. John MacDonald, at Bath, saw Gen. Thomas W. Hyde found the Bath Iron Works in 1890 to build iron ships in the greatest wood shipbuilding community in the world, but neither MacDonald nor his men ever became interested in the building of iron vessels, and the Bath Iron Works, located in the midst of wood shipbuilding yards that were passing out of existence, never built a single Down Easter or coasting schooner of metal.

Arthur Sewall & Company, wood shipbuilders and operators of Bath, changed their yard in 1893-1894 to build steel instead of wood hulls for sailing ships, which they constructed almost entirely with other people's money (selling fractions to the public), but operated with profit to themselves. No member of the Sewall firm was a practical wood shipbuilder—a designer and competent shipwright and master builder—like William H. Webb, Donald McKay, John MacDonald, Hugh Ramsay, etc. The Sewalls were businessmen who hired their master builder as they did their ship carpenters and generally did most of the work on their vessels by contract, getting the cost down to the minimum by competitive bidding, where there were more skilled artisans hungry for work than jobs for them to do. When the Sewalls put up an inexpensive iron shipbuilding plant to build metal hulls for 3,000-ton sailing vessels, they engaged an experienced British shipbuilder (Waddington) to lay out a "poor man's plant," and they bought abroad everything needed that they could acquire at prices cheaper than those prevailing in the United States. When the Sewalls changed from wood to steel ship construction, they had a British master builder, imported skilled British workmen, and even went so far as to use imported British steel. The statement that "the Sewall wood shipwrights switched over and built the *Dirigo* [the pioneer steel sailing ship built in the United States] in 1894" is absolutely false. The "black squad" of shipfitters, riveters, chippers and caulkers, furnacemen, etc., who built the *Dirigo* and the succeeding Sewall steel ships was composed generally of men who had served apprenticeship in the shipyards of Belfast, the Clyde, the Mersey, and the Tyne, although some moved to Bath (as did many of the skilled ironworkers at the Bath Iron Works) from the older-established shipbuilding plants on the Delaware and the Great Lakes (Detroit, Cleveland, Chicago, Buffalo, Bay City, etc.).

The wood shipwrights of America did not become the nucleus of the mechanics who later built iron and steel vessels in this country. There was no transition, but an absolute break. Not a single case is known in the city of Bath where an experienced wood shipwright became a steel ship fitter, riveter, or furnaceman or handled any other line of work in metal shipbuilding that required skill. Carpenters would take jobs in the iron shipyards doing carpenter work, laying wood decks, planking composite vessels with wood, building berths, ways, wood piers, and staging, but they took no part in building iron ships where the work required skilled mechanics. When Bath built its first iron vessels in the early 1890's, there were no young wood ship carpenters in the city. The demand for wood shipbuilders had been steadily decreasing for a generation, and the migration of skilled men from Canada looking for work in the building of wood ships in the United States had caused an oversupply of available labor, with resultant very low wages, so the trade had not been attractive to young men for many long years. Riggers, sailmakers, blacksmiths, etc., could do their work on iron ships the same as on wood, and joiners could find employment building the cabins of vessels of every type; however, the increase of steam (and of towing) materially reduced the demand for the product of riggers and sailmakers. The transition from wood to iron (or steel) construction was abrupt and revolutionary with respect to (1) shipyards and building plants and the type of their ownership; (2) labor employed, such as shipwrights, caulkers, etc. No wood shipwright, carpenter, or wood shipbuilding artisan ever became a skilled iron ship fitter, and no wood ship caulker ever switched over to iron chipping and caulking, which is an entirely different trade, even though it accomplishes the same purpose.

As the nineteenth century ran its course, conditions in shipbuilding, shipping, and foreign transport completely changed. In 1800, the United States was supreme as a wood shipbuilding nation, possessing great advantages in raw materials and skilled men for the building of ships, with talented and courageous men in large numbers to operate them. In 1900, American ship timber was either cut out or economically inaccessible, labor lacked vitality and interest, and building costs, notwithstanding low wages, were high. Men of the old school could not be found to operate deep-sea sail, and both iron and steam had introduced new elements, which, in conjunction with a deplorable shortsighted national policy, had not only given leadership and control of the seas to Britain but also caused the once proud United States, which in mid-century led the world in both sail and steam, to degenerate through negligence and indifference to a third- or fourth-class power in foreign trade marine transport.

VIII.

THE DEEP-SEA FISHERIES AND WHALING—THE TRAINING SCHOOL FOR THE AMERICAN MERCANTILE MARINE

THE FISHERIES were the real foundation of the colonies of New England and of all the settlements in the New World north and east of the Delaware. When the Dutch—the great fishing people of that time—discovered in about 1360 the art of salting and curing fish, they were enabled to make long voyages to catch their fish and carry it to market in an edible condition. Thus, great incentive was given to journeys westward on the North Atlantic, which led to the practical and realistic discovery of the continent of North America. Whereas Christopher Columbus in 1492 discovered the islands of the Caribbean (which led in following years to Spanish voyages of discovery and acquisition of riches by conquest in the West Indies and Central America), prior to that time northern Europeans interested in fisheries had voyaged to the "greatest fishing grounds in the whole world" and were well aware of land "beyond the long sail across the Western Ocean." In 1497, John Cabot (1451-1498) made known to England that the northwestern Atlantic was "full of fish" of a size much larger than seen in the waters of Europe, and he said that in the waters off the coast of a land or big island to the west which he had visited "were great seals and those which we commonly call salmons, and also soles above a yard in length, but especially there is a great abundance of that kinde which the savages call baccalos" (or codfish). It is known that Cabot merely gave general publicity to Europe of what some adventurous fishermen of northern Europe had known for many years and probably for generations: that there were excellent fishing grounds in the far Western Ocean and inhabited land, for they had been ashore to cure their catches before returning home and had encountered the native "savages."

Following Cabot's public declaration of the existence of northwestern Atlantic fishing grounds and North American land, the voyages of fishermen west increased, and there was no longer any veil of secrecy surrounding family or community voyages with monopolistic intent to strange, far-distant fishing grounds. It is known that in 1504 Normans and Biscayans were crossing the Western Ocean in small vessels and taking back to their home ports full cargoes of cod. Throughout the entire sixteenth century, the Grand Banks of Newfoundland (about six hundred miles long and two hundred miles broad) were known to exist and were fished by adventurous and enterprising Europeans—British, Dutch, French, Scandinavians, Portuguese, and northern Atlantic coast Spaniards. It is recorded that in 1517 fifty European fishing vessels were operating on the Banks, and it is known that by 1540 on the shores of Newfoundland there were establishments for the salting and drying of the catches of European fishing craft. In 1577 between three and four hundred European fishing vessels (of which from 40 to 50 per cent were French) were operating on the Banks, and by the end of the century the English were "sending out two hundred vessels a year and employing fully ten thousand men as catchers and curers." By 1600, fishing expeditions to America had become a regular and very profitable feature of British business enterprise.

The English did much to encourage the fisheries in the sixteenth century. They became sea-minded. The Dutch were the principal ocean carriers, and the English felt the need of developing power on the ocean for defense of their island home land; hence England encouraged shipbuilding and the building and operation of a big fishing fleet, from which were to grow a mercantile marine and a navy and experienced sailors to man the merchant and naval fleets. Regulations were made to encourage and foster deep-sea (long-voyage) fisheries; bounties and special privileges were granted, and the demand for fish as an article of food was increased by law so that the fisheries would be profitable. In the sixteenth century, the people of England were required to abstain from meat on two days of each week and, at times, for 150 days in the calendar year "in order to make a profitable market for fish and to foster the creation and maintenance of a large native marine." Histories record that the shipbuilding industry of Britain received its start and derived a great deal of its early vigor from the construction of deep-sea fishing vessels. Prior to England's ascendancy as a marine power, the Dutch had more or less dominated the ocean and been for many generations the foremost of the fishing nations. The mercantile marine and navy of the French grew from their fishing fleet, and the same can be said generally of all marine powers from the earliest days of history—the Phoenicians, Carthaginians, Barcelonians, Venetians, Portuguese, etc.

Early Fishing Settlements—the First Colonies

It is known that, in 1602 and during each of several succeeding years in the first decade of the seventeenth century, fishermen were taking advantage of the fact that the cod caught off the mainland of America (Maine and Massachusetts) in relatively shallow water (six or seven fathoms) were far larger and better than the cod caught on the Banks in deeper water (forty to fifty fathoms). Henry Hall says:

> It was found that six or seven cod would make a quintal in New England when, by reason of their smaller size, twice that number were required at Newfoundland, while the shares of common fishermen earned only £6 or £7 each at Newfoundland, against £14 in New England. The reports brought back by these explorers were so satisfactory that they greatly increased a desire then felt in England for colonizing the mainland of America with fishing stations. Merchants found it expensive to add twenty men to the company of a vessel and carry them across the ocean and back again, paying and maintaining them all the while, simply to employ them on shore in curing and packing the fish caught by the regular force of the vessel, as it was cheaper to establish villages on shore, where the fish would be cured by the residents and the expense of doubly manning the ship thus be avoided. The desire to found fishing colonies in New England became strong, and the grant made by James I in 1606 to the Plymouth Company was largely with that idea in view. In a brief time, the coast from Newfoundland to the Capes of Virginia was planted with a succession of little villages of several different nationalities, the people of which were more or less engaged in the catching of fish.

Six years before the arrival of the *Mayflower* and the Pilgrim Fathers and the founding of the Plymouth Colony, a fishing station had been set up in 1614 by John Smith at Pemaquid, Maine; still another, a very sizable fishing colony, had been established at the mouth of the Kennebec River in Maine seven years earlier (1607) by Capt. Raleigh Gilbert and Capt. George Popham and a hundred men organized and financed by Sir Ferdinando Gorges. The lure of fish founded the Massachusetts colonies—both Plymouth and Boston, with Salem, and both Pilgrim and Puritan. It can be said that the fisheries in the western Atlantic were primarily responsible for the settlements in the western world and the establishment of the American colonies—British, French, and Dutch. Winthrop L. Marvin has written:

> The first white settlers on our northern shores were fishermen. Before the Pilgrims came to Plymouth, the Dutch to New Amsterdam or the Quakers to Philadelphia, the catchers of the cod had established stations along the coast of Maine, as well as farther north in Nova Scotia and Newfoundland. These stations lacked the permanence of an industry that roots down into the soil, but they bore their

part and a great part toward convincing Europe that there were other and surer riches in the New World than phantasmic El Dorados and fountains of perpetual youth. The thrifty Puritans of Salem and Boston and Hollanders of New York took cod and mackerel very seriously into their calculations. Dried fish and rough lumber formed the basis of their earliest overseas trade with the mother continent and the European colonies in the West Indies.

The Spanish discovered, explored, exploited, and plundered the islands of the Caribbean, Florida, and Central and South America. The British, French, Dutch, and Scandinavians farther north settled on the land with the intention and firm hope of making a living by work. This was the fundamental difference between the early Spanish conquering despoilers (with their imaginative El Dorado, their lust for gold, and their desire for perpetual youth, a life of ease, domination, and slaves) and the hardworking northern British settlers, who as emigrants to a new country sought to make a living and the chance to work where they could enjoy religious liberty and an atmosphere of freedom denied them in the Old World. The lure of the South was the incredible wealth to be found and taken by force of arms; that of the North was the land with its timber and the sea with its fish, but the timber had to be felled and the fish caught and cured, and this meant hard work.

North of Florida there was a further division. The British settlers in New England were solid, democratic citizens with firm ideas of human equality and the dignity of labor, and their prime idea was to develop a colony by toil; but the immigrants in the South, from the first arrivals at Jamestown in 1607, brought with them social distinctions and classes —gentlemen, troops, laborers, and indentured servants. The distinction between the settlements north and south of the Delaware grew greater with the years. In the harsher climate of the North, the colonists worked hard on land and sea to make a living and pay their debts. In the kinder climate of the South, the colony leaders maintained and developed their aristocratic ideas and eventually acquired practically all of the land and perpetuated a landed aristocracy. They were gentlemen who would not debase themselves by work, and having for years used imported laborers and indentured servants (who were in virtual slavery) to raise profitable crops such as tobacco, they found it very easy and economical later to switch gradually to Negro slave labor. New England and the North, generally, owed their development to fish, timber, and hard work; the southern British colonies grew in wealth and affluence founded on agriculture and slave labor.

The South had splendid timber in abundance (oak and hard pine) which was better for building the hulls of wood ships than any timber to be found in the North, but the southern colonists did not feature it either for domestic industry or as an article of trade. The growing of agricultural crops and tobacco was much easier and more aristocratic. It is significant that, during the last half century of wood shipbuilding in the United States, an overwhelming percentage of the oak used for ship timbers and practically all of the hard pine used for planking came from the southern states, but this timber had to be freighted north at great expense, for all the shipyards and the ship carpenters were in the northern states.

From the first, the northern settlers had to exploit the deep sea to make a living; they had to trade and journey on the ocean and, therefore, needed seaworthy boats and ships. The New England colonists acquired log canoes from the Indians, but used these canoes only on rivers and smooth-water inlets and quickly developed as an industry the building of boats and ships on European lines. The early settlers in Virginia and Maryland obtained boats cut out of pitch pine (hard, yellow, or southern pine) logs in trade from the Indians and, for many years, used the Indians as their boat builders. John Smith, arriving in 1609 with the pioneer colony, found the waters of the Chesapeake swarming with dug-out canoes, which the Indians used for travel, fishing, and warfare. He wrote:

> These boats they make of one tree, by burning and scratching away the coales with stones and shels till they have made it in forme of a Trough. Some of them are an elne deep and fortie or fiftie foot in length, and some will beare 40 men, but the most ordinary are smaller, and will beare 10, 20 or 30 according to their bigness. Instead of Oares, they use Paddles and stickes, with which they will row faster than our Barges.

The upper Chesapeake was settled by English colonists in about 1635; the lower part of the bay, by people from James River in about 1650. The settlers on both the shore and the many islands were dependent on boats. When they started to build, they copied the Indian and made wooden canoes, each hewn from the trunk of a single pine tree. These boats proved very durable and, when made from sound timbers and taken care of and painted each year, lasted thirty, forty, or even fifty years. This type of boat was used for all purposes on the waters of the Chesapeake. It played a part in the War of the Revolution and, for centuries, has been the only kind of boat used for general utility work in smooth water and for small fishing and oystering.

The northern colonists had a great advantage over the southern settlers in fisheries, and the world's finest fishing grounds were used to sustain the New England colonists until timber and fish jointly became satisfactory articles of trade. In the South, fishing was restricted to supplying an article of food for the populace; trade developed in tobacco and corn (with knowledge acquired from the Indians) and, later, in rice, indigo, and cotton.

English fishing merchants aided in the establishment of settlements in New England in order to save the expense of transporting men across the ocean to cure the fish. These merchants felt the economic need of permanent drying stations on the shore of the New World, where their people and equipment could operate effectively, produce at a lower cost, and be protected against the hostility of the Indians. Sir Ferdinando Gorges organized a company in London to plant a colony on the Sagadahoc (Kennebec). This colony was to be supported by fish and, also, by forest products, and the plan was original to the degree that the colony was to build its own ships, for which purpose, among the men sent out, was "one Digby from London, a master shipwright." Capt. George Waymouth, in the ship *Archangel,* had explored the Sagadahoc territory in 1605 and reported in London on the splendid forests, harbor, and fisheries. Gorges acted promptly to benefit from Waymouth's exploration, but the first migration that he sponsored, in 1606, was intercepted by pirates. A year later, his two ships *Mary and John* and *Gift of God* reached their destinations and put a hundred men ashore to build a fort, housing and needed structures for the settlers, and a ship.

Colonial Fishermen—Shipbuilders by Nature and Enterprise

Ashore in the fishing settlements, the people themselves, finding the land difficult to cultivate, from the first commenced cutting timber, building boats, and going fishing. They were not content to wait for English fishing vessels bringing them fish to cure for the British markets. These fishermen were half shipbuilders by the nature of their calling. The colonists in the Massachusetts Bay region influenced the home company to send over some shipbuilders, and with excellent timber available the colonial fishing and trading boats were built cheaply. The result was that the original English fishing settlements soon owned a fishing fleet of their own construction. As early as 1634, one Marblehead merchant was operating eight fishing boats, and Portsmouth was reported as owning the following year "six great shallops, five fishing boats with sails and anchors, and thirteen skiffs" engaged primarily in fishing off the Isle of Shoals. In 1645, Boston is reported to have sent "a ship and other vessels" to the Banks of Newfoundland for deep-sea fishing, and Lechford wrote, in his "PLAIN DEALING; OR NEWS FROM NEW ENGLAND," that at this time the people of the colony "were building of ships and had a good store of barks, catches, lighters, shallops, and other vessels." English fishing merchants and shipbuilders became disturbed at the growth of fisheries and shipbuilding in America outside of their direct interest and control, and the Lords of Trade and Plantations (representing the British Government) in 1670 issued an order to capture and burn the boats and break up and destroy the boat fisheries of New England. Notwithstanding such decrees, the American colonists went on building vessels and catching fish. Henry Hall says:

As the years went by, those who were prosperous built larger vessels and pushed out to the banks, while others went out for whales and seals, following their game from one latitude to another until they reached the impenetrable regions of the North and South Poles. Vessels were sent out [from England] to New York and Virginia, to the West Indies and other islands of the Atlantic, and finally to Europe, to market the products of the sea, and their masters brought back the commodities of the lands they visited to sell at home. Afterwards, many of the vessels went regularly into trade, masters and men being recruited from the fishing fleet. A great and valuable foreign commerce was the result of their operations and this, reacting upon the shipbuilding industry at home, made it an active and prosperous business within a hundred years of the time of the first permanent settlements.

The early American shipbuilders learned their art in the construction of craft for the fisheries, and it was the fishing fleet that later supplied the officers and crews of the American mercantile marine. The deep-sea fisheries were the nursery of both American shipbuilders and ship operators, or seamen.

Ships of the days of the early American settlers were very small. It is stated that in 1582 "the whole marine of England" consisted of 1,232 sail, of which only 217 were over 80 tons actual burden, and that over fifty of these larger vessels—or one-quarter—were engaged in the Newfoundland fisheries. Gosnold's expedition of 1602 was made in the *Concord,* described by contemporaries as a "small ship." Pring's exploration of the Maine coast in 1603 was made with the bark *Speedwell* of 50 tons and the *Discoverer* of 26 tons. Waymouth's voyage of 1605 was made in the ship *Archangel* of 60 tons. The first "ship" built on the American continent (at the mouth of the Kennebec, by the Gilbert-Popham colonists) was the *Virginia of Sagadahock* of 30 tons, and John Smith's fleet of exploration consisted of a pinnace of 20 tons and two vessels of 40 and 100 tons, respectively. In an official list, "English East Coast Channel Port Vessels," dated 1587, the floating tonnage (evidently of all deep-sea fishing vessels) is tabulated as:

4 small Barks from the burthen of 2 tons to 3 tons
5 small Barks from the burthen of 3 tons to 5 tons
12 small Barks from the burthen of 5 tons to 19 tons

The statement is made that the port of Dover, with an extensive long-voyage and foreign commerce, "hath 26 ships and small barks from the burthen of 12 tons to 120 tons."

It is interesting to note that the fishing stations established in the early days on the North Atlantic shore of the New World were for the purpose of drying fish for the markets of northern Europe, but English settlements and colonies, from the first, shipped their fisheries products to markets other than those of Britain. The station established by John Smith at Pemaquid, Maine, in 1614, it is said, "caught and cured twelve hundred quintals of fish that sold in Spain for five dollars a quintal." The Puritan colony of Massachusetts Bay, in dispatching the *Trial* to Bilbao and Malaga soon after 1633 "with a cargo of fish" (which was profitably exchanged for "a lading of wine, oil, iron, and wool"), originated a service for New England-built, owned, and operated merchantmen that continued throughout and beyond colonial days. Timber and the products of northern New England's great forests became the principal commodity of trade of Maine and New Hampshire as the years advanced, but the existence of these states was due to the fisheries, and they as well as Massachusetts were founded and sustained for many years on fish or, as has been said, "on the decks of the fishing smacks." Marvin well says, "It was their harvests of the sea, not the first fruits of their thin and grudging acres, which won for the early colonists their few luxuries and the indispensable materials of their tools and clothing."

Massachusetts lawgivers legislated early in an attempt to guarantee the building of good and reliable ships in the colony and the production of high-quality, salable fish abroad. In 1652 the Puritan legislators provided for "the appointment of sworn fish-viewers at every fishing place within the jurisdiction, who are required to reject all unmerchantable, all sunburnt, salt-burned and dry fish that hath first been pickled, to be paid one half by the dealer, the other half by the receiver." During the latter part of the seventeenth century, New England fishermen not only were working in home waters but also were sending their fishing vessels "beyond Cape Sable to the offshore banks." Historical records show that as early as 1645 "a ship and other vessels" set sail from Massachusetts Bay "to the banks to fish."

First American Whalers—the Indians in Canoes

Whale fishing was being actively pursued in certain parts of Europe at the time of the founding of the early settlements in America in the first part of the seventeenth century. By the time that the New England and Long Island coasts were settled, the whale was well known, and its commercial value was generally understood. We know that as early as the ninth century the Norwegians were hunting whale off their coast and that in the twelfth century whaling was being carried on off the east coast of Scotland, for Malcolm IV granted to Dunfermline Abbey one-tenth of all the whales and "marine monsters" taken in the Firths of Forth and Tay; there is a record that in the thirteenth century Alexander II allowed the abbey half the blubber of captured whales for providing the altar candles. The Biscayans and Basques were evidently the first of modern peoples to hunt the whale energetically and make a regular business of it. An ancient document shows that in 1150 King Sancho the Wise granted special privileges in the matter of whaling to the city of San Sebastian. Most probably the Basques were not the originators or inventors of the art of whaling, for the aborigines of Europe can be expected to have been as courageous and venturesome as those of America. The first white men that explored the waters of the northeastern portion of the New World found Red Indians of every tribe accustomed to killing whales, and the isolated Eskimos of the far north were found to be expert whalers, using harpoons and spears of superior construction, and with a long history and tradition of whaling behind them.

The Biscayans and Basques, after becoming proficient in the capture of the sea monsters in home waters and contiguous European fishing grounds and finding their number becoming increasingly less and the big animal-fish scarcer as the years advanced, set sail to the north in search of whale and, as early as 1578, had some twenty-five reputedly "large" sailing vessels engaged in the business. Sailing north after whale, the Biscayans unintentionally educated and interested the maritime people of the North Sea in whaling and the use of whale oil. Hull, the English North Sea port, sent out whalers to Iceland and the North Cape as early as 1598, and an English whaling expedition is said to have left a west coast port for Cape Breton in 1594. In 1610 two English "discovery ships," the *Marie Margaret* (160 tons) and the *Elizabeth* (60 tons), were lost in the Arctic, but a Hull ship salvaged their cargoes of whaling products. The Dutch became active in the business and, it is said, at the middle of the seventeenth century had 200 ships in the whale fisheries. In 1671, Holland is credited with sending 155 vessels to Greenland, which brought back the produce from 630 whales, and we read that in 1675 there were 148 Dutch whalers at work, which caught 881 mammals, and that the Dutch in some seasons of the late seventeenth century "killed as many as 1,600 and even 2,000 whales." Whaling in northern waters was one of the three prime channels of marine activity used for building up the nation's wealth, the others being the herring fishery and the East Indian spice trade. North German ports and the English sent out vessels to hunt the whale in the northeastern Atlantic, North Sea, and Baltic waters, and Hamburg soon became a whaling port of prominence, claiming as many as 350 ships engaged in the business.

The early explorers of the American northeastern coast commented on the presence of the whale and suggested its value to augment the general deep-sea fisheries. We are told that the pioneer European adventurers in New England and Canadian waters were amazed at the audacity of the American Red Indians, who in their fragile canoes successfully attacked the "monsters of the deep." Whales were plentiful off the American coast in those days. Capt. John Smith in 1614 found whales "so thick and so easy of approach" and the native savages so adept in capturing them that he "turned aside from his exploring" for a while to be instructed and to join with the Indians in capturing whales. When the *Mayflower* arrived at Cape Cod and anchored late in 1620, the Pilgrims observed that "large whales of the best kind for oil and bone came daily alongside and played about the ship." We read that the master and his mate and others experienced in fishing preferred the Cape Code whaling possibilities to the Greenland whale fishery. The Pilgrims were influenced to make their final selection of a location for their colony by fate and ill winds, but the prospects of profitable fishing and whale catching, it was said, materially assisted them in becoming reconciled to founding their settlement at Plymouth, Mass., rather than on the Hudson River, their original objective. A very early English settler recorded in his journal that, as the long westward sea voyage to the colony ended, he saw "mighty whales spewing up water like the smoke of a chimney and making the sea about them white and hoary, as is said in Job, of such incredible bigness that I will never wonder that the body of Jonas could be in the belly of a whale." It would seem that the first recorded attempt by white men to kill a whale took place while the *Mayflower* was anchored in late 1620 in what is now known as Provincetown Harbor. A number of whales "of greate size" were feeding and disporting in the vicinity of the Pilgrims' ship, and one venturesome member of the school came to the surface close by. A fowling piece aboard was loaded with a super-charge, aimed and fired, but the weapon exploded, the whale sounded, and it was fortunate that there were no casualties among the vessel's crew and passengers.

Whaling by the colonists originated in searching for stranded whales, which usually had died a natural death and drifted ashore. Whales were so numerous off Long Island, Cape Cod, Nantucket, Rhode Island, and the Massachusetts coast that these stranded marine mammals, known as drift-whales, were found in quantity, and the governments of the colonies decreed that such whales were not the exclusive property of the person or persons finding them as originally claimed, but of the public and generally of the colonial government. The township where the drift-whale came ashore and the finder of the whale shared equally in the oil and salvaged products of the carcass. In 1662 the town of Eastham on Cape Cod voted that a part of every whale cast ashore should be appropriated for the support of the ministry. In 1644 the settlement at Southampton, Long Island (a favorite playground for the Mammalia of the sea), appointed men especially to look for whales cast ashore. Later, the practice developed of holding boats in readiness to chase and kill whales that, although not actually stranded, came into very shallow waters near shore. Encouraged by the example of the Indians, who would put out from shore in their long narrow canoes and attack a whale with spears and arrows, the early settlers on Long Island, Cape Cod, and Nantucket built small boats for whaling and were soon chasing every whale blowing in sight of land. Regular lookouts were established. A tall, strong mast with a platform near the top was set up and guyed, and a watch was maintained. Boats were kept in readiness for launching, and when a whale was seen to spout, an alarm was sounded, and the boats were manned, launched, and sent out in pursuit of the game.

The American Indians, considering the weapons they had to work with (a bone spear or a flint-pointed arrow), were expert whalers and generally superior to Europeans in the methods of whaling employed for many years. The British settlers on the east end of Long Island got along amicably with the Indians and treated them so fairly in regard to compensation that white men objected to Indians' being paid three shillings a day for whaling when their pay was two shillings. The competition among the British colonies for the services of the more expert Indian whalemen became so great that the community found it necessary to regulate the matter of compensation by law, so it was enacted that "whosoever shall hire an Indyan to go a-whaling, shall not give him for his Hire above one Trucking Cloath Coat, for each Whale, hee and his Company shall Kill, or halfe the Blubber without the Whale Bone." The red aborigines might, therefore, receive a "lay" of half the blubber of the whales they captured when working with and for the white man. The Indian fought the ferocious right whale with remarkable courage and intelligence, and he continued as a valued member of the crew of American whalers—deep-sea as well as coastwise—as long as the industry was popular and profitable.

Experience in near-shore whaling developed a very seaworthy type of small boat that was light and easy to row, made good speed, and had capacity. By the end of the seventeenth century, the American colonists were using a form of boat that closely resembled the whaleboat, in its prime, as used in deep-sea fishing in later years. By the time of the War of 1812, the large, double-ended, serviceable, and speedy American whaleboat was in general use. Henry Hall says:

> Whaleboats played a part in the War of Independence, their size and speed making them useful to the Americans for warlike services, short expeditions, and quick surprises. The British took pains to destroy as many of them as possible in their raids on Rhode Island, Massachusetts, and Long Island towns, and Sag Harbor, Newport, Warren, Rhode Island, Martha's Vineyard, Nantucket, and New Bedford suffered heavily from the capture and burning of large numbers of whaleboats as well as of whaling vessels.

Samuel Mulford, Whaler and Patriot

Samuel Mulford, born at Easthampton, Long Island, in 1645, a skilled alongshore whaler, was a remarkable character to whom but few historians have given recognition for the unusually courageous part that he played in defying the right of the British arbitrarily to tax the colonists. At a meeting of the inhabitants of Easthampton held on November 6, 1651, "it was ordered that Goodman Mulford shall call out ye town by succession to loke for whale." The job of "lookout" for whale was apt to be as unpleasant as it was important, and men who were quite willing to participate in the task of hunting and killing a whale and of preparing the products of the catch for use and market would sometimes shirk the irksome and distasteful job of watching for whale, particularly from an exposed lookout during a wintry gale. Goodman Mulford (real name John, for "Goodman" was a title given to a worthy citizen who was not of the gentry or aristocracy) was a man of acknowledged character and impartiality in the community, and shortly after being authorized to "call out ye town to loke for whale," he was chosen to serve as magistrate. John Mulford's son Samuel grew up in an atmosphere of whaling and became not only the most notable whaler of his day but also a patriot of the colonial period whom Americans would do well to honor.

Soon after Major General Robert Hunter was appointed the British governor of New York and the Jerseys in 1709, he felt the need of money and thereupon looked around for increased revenue by means of levies or taxes on goods produced. Fishing was among the rights granted the settlers in the patent to their lands, for which patent they paid an annual tax, and it was distinctly set forth that they were privileged "to go out upon the Seas, adjacent to their Lands, Six Men in a Small Boat, to take and kill Whales and other fish, and the Capters to have all they killed." Lord Cornbury, in a report dated July 1, 1708, refers to Long Island whaling carried on by means of small boats and says that the business was evidently profitable to the settlers, "for example last year they made 4,000 barrils of oyl" (the previous year, however, they had made only 600 barrels). Governor Hunter decided that whaling had grown to be an industry that paid no tax to the government of the colony, so he decreed that all whalemen should pay to him one-twentieth of all the oil and bone that they obtained from both drift-whales and those captured by boats, and his share had to be brought and delivered to him at New York, which on an average was some hundred miles from the whaling grounds. The Long Island whalers, in true British colonial fashion, ignored the arbitrary decree, but in 1711 there was a writ directed to the sheriff "to seize all whale fish whatsoever" in order to compel the belligerent whalers to conform to "the law" and bring in the share of oil as specified and demanded.

For some seventy years, the settlers on the shores had enjoyed the full fruits of their labor in harmony with the provisions of their patent. Taxation for the benefit of the community was a matter that they would continue to handle themselves in their common interest, and they did not propose to pay a share of their hard-earned gains to a British official who contributed nothing to their well-being and merely sat at ease in New York. But the sheriff was aggressive, and he came among the settlers determined to obey orders and "seize all whale fish whatsoever." Some few of the whalemen, to avoid a conflict, reluctantly paid the tax; others, indignantly or in disgust, discontinued their whaling operations, but Samuel Mulford was defiant. He stood on his rights and, with his two sons Timothy and Matthew and as many Indians as were needed to complete the manning of his boat, went to sea whenever a whale was sighted and disposed of the products of each catch according to his rights and in conformity with both the original written word of law and the time-honored custom which gave the whalemen and the fishermen the full fruit of their toil and hazardous adventures for gain.

Samuel Mulford had served his community as civil justice and as an officer of the militia, and he became the accepted leader to represent it in the General Assembly and to combat Governor Hunter's selfish and autocratic plans. However, Governor Hunter was a scheming politician, and fearing the influence of a seacoast whaler in the legislature, he created new assembly districts in territories where he was able to control elections and thus assured himself of maintaining a comfortable working majority. Nothing daunted, Mulford addressed the assembly and not only spoke on the rights of the whalers but also mercilessly exposed and denounced, with courage and bitterness, the grasping and autocratic schemes of the royal governor. Hunter promptly retaliated and used his influence with an obedient assembly, which acted to expel the bold and tactless whaler, and the chief justice and prosecuting attorney of New York (both "creatures of the royal governor") proceeded against Mulford for the "high misdemeanor" of uttering "a false and seditious libel"—notwithstanding the fact that the speech made in the assembly was privileged under the law. Hunter gave orders that Mulford be persecuted, harassed, and besmirched to the limit. Whereas the action against him for libel could not be lawfully pressed, it was continued from term to term of the court, and at each term Mulford was required to travel 230 miles to appear. An action of trover was also brought against him and his sons "for converting the Queen's goods to their own use," and when Mulford demanded as his right a trial by jury, this was denied him, and the chief justice convicted him and imposed a fine of fifty pounds. Mulford was a mentally resourceful as well as courageous fighter. That he should, while virtually standing alone, fight the British governor made him appear "queer" to most of his contemporaries. Hunter, in his letters, refers to Mulford as "a crazy old man," and a fellow citizen said that he was "an original genius of good judgment but of an odd turn." But as John R. Spears, in THE STORY OF NEW ENGLAND WHALERS (1908), says:

> If his motives and ambitions be now examined, it is seen that he was not only the ablest citizen of Long Island, but a far-seeing statesman, one worthy of being ranked with the patriots of the Revolution. For he had come to be animated, not by a foolishly stubborn determination to oppose a tyrannical governor, but by a lofty spirit of patriotism. The fight as he made it was not to escape the payment of a fine of £50 that had been imposed upon him, but to establish a principle. . . . Before Washington was born Samuel Mulford, the alongshore whaler of Southampton, set the pace to which the patriot hosts

at Lexington were to march. . . . By means of the mental qualities that he had cultivated when "out upon the seas" with "six men in a Small Boat to take and kill Whales" Mulford [finally] triumphed over one of the ablest of the royal governors of New York.

The name of Samuel Mulford should be placed on a scroll of honor with that of James Otis, Patrick Henry, Samuel Adams, John Hancock, and other American colonial patriots of the 1760's and 1770's; for Governor Robert Hunter's 5 per cent tax on the products of whaling contributed, with the far better-known British acts of trade and navigation and the oppressive molasses, sugar, stamp, tea, and coercive acts, in promoting colonial rebellion that ultimately led to armed revolution and independence.

Samuel Mulford was aware that the British Government had provided special encouragement for "subjects within this Kingdom" who might wish "to go a Whale Fishing to Greenland, Freizland and places adjacent," so he naively asked if New York was within "this Kingdom" referred to by Parliament and if British subjects in New York had the same rights under the act as Englishmen in England. If so, then Hunter's decree for taxing the whale fishery was contrary to the act of the British Parliament, which sought to encourage and not discourage whaling. The chief justice of New York, speaking for Governor Hunter, declared in his decision that the colonists had "nothing to do with the acts of Parliament" and that they had "no law but what the Crown allowed" them—a ruling that could have been used to advantage by the rebellious colonists some half a century later. Upon hearing the decision of the chief justice, Mulford became resolved to continue his fight to determine the rights of the colonists as British citizens and learn in England "whether the subjects in New York Colony are to be governed by Prerogative and deprived of property or whether they are to be governed by the Constitution of English Government." Governor Hunter called Samuel Mulford a "traitor" for standing out against the decision of a dominated supreme court, and in order to get away from the jurisdiction "of Hunter and his creatures," Mulford left his home secretly, crossed over to Rhode Island, and walked thence to Boston, where he took ship to London "to lay his case before the Crown." The whaler of Long Island had no easy time of it in London, but his courage, resourcefulness, determination, and honesty finally got through the veneer of the fastidious gentlemen of the court, who found him first amusing and then a nuisance. Ultimately, Mulford caused a letter to be written to Governor Hunter, of New York, by the lord justices of Britain, in which they plainly said, "We must observe to you that we hope you will give all due encouragement" to the whalers, and later Hunter was compelled to write officially, "I have remitted the five per cent on whale fishing." In 1719, Robert Hunter was recalled as governor and a successor appointed.

Nantucket—the World's Greatest Whaling Port and School for Whalemen

The first British explorer to discover the island of Nantucket was Bartholomew Gosnold in 1602, and in 1641 title was owned by the Earl of Stirling, whose American agent on October 13 of that year sold it for £40 to Thomas Mayhew, a merchant of Watertown, Mass. In 1658, Thomas Macy, of Salisbury, gave food and shelter to a few Quakers caught in a storm when fleeing from the persecution of the Puritans, and because of this humane act, he himself, who had been a soldier under Oliver Cromwell, found it necessary to change his residence abruptly to save his own life from the punishing religious fanatics. Macy fled across Massachusetts Bay, around Cape Cod, and finally landed on Nantucket Island. We read that there (where no white man lived), "as the Indians were not sufficiently enlightened to abhor his crime [of giving shelter to Quakers], the dispenser of unlawful hospitality was kindly received and permitted to live in peace." Finding Nantucket much to his liking, Macy communicated with friends holding generally similar broad religious views, and as a result several families agreed to emigrate, but first they purchased all British rights to the island from Thomas Mayhew, nine responsible colonists each becoming owner of one-tenth, with Mayhew reserving the other tenth to himself. These "ten first purchasers" soon took a partner on equal terms, and the "twenty purchasers" emigrated to Nantucket and bought "the right of the Indian sachems" on May 10, 1660.

Not one of these original white Nantucket settlers was a whaler or even a seaman, but all were of the type of frontier homemaker who kept pushing farther and farther away from the Puritans of Boston in an effort to found a settlement where they could live amicably, rule themselves, and worship God according to their own conscience. The early settlers saw the Indians whaling and fishing, and they later induced "William North, Salier," to move to the island and there in the interest of the community "imploy himself or Bee Imployed on the Sea. . . and not to leave the island for three yeares time." It would seem that the thought of the islanders was first seriously turned toward whaling when a right whale of the "scragg" variety came into the harbor, remained for days, and, Macy tells us, "excited the curiosity of the people and led them to devise measures to prevent its return" to the open sea. "They accordingly invited and caused to be wrought for them a harpoon with which they attacked and killed the whale."

It is recorded that in 1690 a native of Nantucket, pointing from a sand bluff of the island to the ocean where a school of whales could be seen, said in true prophecy, "There is a green pasture where our children's grandchildren will go for bread." That same year, it appears that the citizens of Nantucket sent to Cape Cod, where they knew "the people had made greater proficiency in the art of whale catching than themselves," and hired Ichabod Paddock, an expert whaler, to come to the island and teach them how to do the work most effectively, profitably, and safely. About this time, the French Canadians at the mouth of the St. Lawrence turned their attention to the whale fisheries, but they did not hire a Basque to teach them the art; they petitioned their king for a subsidy with which they could employ Basque whalers to do the work for them. The French king gave his subjects the encouragement along the lines requested, but when later the subsidy was withheld, the whaling ended, as the Basques went hunting for whale elsewhere and the French Canadians themselves had not learned the art of whaling. The Nantucket people, in employing Paddock to teach them whaling, founded an industry for themselves to pursue for their own benefit; they sat at the feet of a competent schoolmaster, absorbed knowledge in practical lessons, and, profiting by it, made themselves prosperous and their island famous the world over.

Ichabod Paddock soon saw that many more whales frequented the south than the north shore of the island, and he promptly divided this shore into four "beats," or districts, each about three and a half miles long, built a hut for shelter, and erected a tall spar, with a "crow's nest," at the center of each district. He assigned six men to each "beat," one of whom was expected to occupy the lookout perch on the spar at all times during the daytime and whenever vision was good enough on moonlight nights. These crews were taught to work in conjunction one with the other, and able-bodied islanders rendered assistance when and as needed; so whaling bcame a community affair, and the business was carried on both intelligently and in common with a minimum of waste effort and of duplication. All shared in the expense, all in the work according to their talents and physical ability, and all in the product and the profits of whaling. When a crew went in chase of a whale, others summoned by signals joined as soon as possible, and when a whale was killed the crews united to save the oil at try-works erected near the beach for the purpose. Towing a dead whale to the beach, dragging the blubber from the carcass by means of apparatus called a "crab," cutting it into chunks and lifting them into carts was hard and toilsome work. As Spears says, "As these men labored on the beach they were wet with the spray and with the sweat of their toil; they were chilled by the north wind's blast; they were smeared over with the grease of the blubber, and they were stung by the flying sand that the wind carried; but they kept the pot boiling"; for the early Nantucketians who took up whaling as a means of livelihood and in the interest of island prosperity were neither weaklings nor shirkers.

Paddock and his fellow whalers on Cape Cod had themselves learned much about whaling from the Indians. The settlers on Nantucket—who had always got along well with the red aborigines—employed them (as did the Long Island settlers), and the Indians soon became proficient in using the white man's superior weapons. It would seem that on Nantucket the pay for Indian labor never got out of hand; there was no competitive bidding for services, but the island authorities decreed that just compensation should be made for all Indian labor. The Indians were paid for actual work performed on a unit basis, not in money but by being given certain generally unmarketable parts of the whale which the Indians valued; also clothing and other things manufactured by the whites. That the whale fishery of Nantucket was successful from the first is evidenced by the fact that it continued persistently and steadily grew in both importance and efficiency, and before long, instead of keeping men in crow's nests on lofty spars "in order to observe the spouting of whales," the Nantucket men took to the sea in open boats looking for whales and thereby much increased their area of observation and their radius of action.

Although Nantucket followed Long Island, Cape Cod, and Plymouth in chasing and capturing the "monarchs of the deep" and was not the pioneer in the bold, deep-sea American trade of whaling (which led the world by a considerable margin), the history of Nantucket is the history of whaling. The little island with its Quaker population, it has been truly said, for many generations "made all the five great oceans of the globe yield the livelihood denied by her own narrow sterile acres," and "once embarked in the noble industry, Nantucket straightway surpassed them all and dominated the whale fishery as perhaps no community of like size ever dominated so hazardous and important a vocation." Nantucket, being an island, was forced to look to the sea for a livelihood and, as an island, was dependent upon vessels for communication with the mainland and for pursuing its prime business of fishing and trading with fish and the products of its fisheries. Unfortunately, it was impossible for Nantucket to build its own vessels economically; the island grew no timber, and all of the materials necessary for shipbuilding would have had to be carried to the island by vessel. At the end of the seventeenth century, Nantucket was having vessels of from 15 to 25 tons measurement built in Scituate, Salem, and Boston, Mass., and in the early 1700's at other towns in Rhode Island, Massachusetts, and Connecticut. Spears says that the first Nantucket sloop fit for use on the open sea was the *Mary,* a craft of some 25 tons, built in Boston in 1694 and bought by Richard Gardner and his partners of Nantucket in 1698.

Nantucket sloops—which were open boats—were used in cruising a short distance offshore to look for whales as early as 1712, for in that year Capt. Christopher Hussey, without intent, initiated deep-sea whaling when he killed a sperm whale and made a huge profit from the oil. On this eventful cruise, Captain Hussey, a son of one of the island's "twenty purchasers," was blown out to sea in his open boat, and when drifting and riding out a winter's storm far from land, a school of sperm whales was sighted. Instantly, the interest as well as the courage of the Nantucketians was revived, for the men had seen a whale of this kind before. A dead one had drifted ashore, and they had profited by the amazing find of fluid spermaceti and oil in the cavity of its head. It has been said that a sperm whale to an early New England whaler was like a "pay streak" to a Rocky Mountain prospector, for "sperm," aside from being a highly valued product for many ordinary uses, was "thought to be of great value for medicinal purposes, . . . a certain cure for all diseases," and "esteemed to be worth its weight in silver." Hussey and his men, with a school of sperm whales close by, quickly forgot about the danger from the elements and promptly went after the nearest big whale, which they killed, and as the "slick" (oil) that oozed from the carcass operated to smooth the sea in their vicinity, they safely rode out the gale and later succeeded in towing their prize to the beach—the first sperm whale ever hunted and killed at sea by Nantucket whalers. In 1715, we are told, "Christopher Hussey of Nantucket fitted out a vessel to pursue sperm whales and tow them ashore," but what became known as real deep-sea whaling did not develop until about a quarter of a century later, when by erecting brick try-works on shipboard the Nantucket whalers were able to extend their cruising radius far beyond the towing range and to distant whale feeding grounds.

Whaling centered about Nantucket for well over a century of time, but during the latter part of the seventeenth century, the whales stopped frequenting in quantity, as heretofore, the shallow waters of the American sandy coast. An old chronicler writes:

> Whales formerly for many successive years set in alongshore. There was good whaling in boats. . . . After some years, the whales left this ground and passed further off upon the banks at some distance from the shore. The whalers then used sloops with whaleboats aboard, and this fishery turned to a good account. At present the whales take their course in deep water, where, upon a peace, our whalers design to follow them. This business is by whaling sloops or schooners with two whaleboats and thirteen men.

It is evident that the whales, which at one time frequented the American coast, gradually sensed that inshore waters were dangerous, so they stayed farther offshore. When the European settlers used their coasting sloops and fishing pinks to chase the whales, they kept so far out that it was impossible for the colonists to tow a captured dead whale ashore to cut and boil the blubber. It then became the practice to strip the blubber from the whales at sea where caught, store the chunks of blubber in the hold, and extract the oil therefrom when the vessel returned to port. Very small vessels with narrow beam and but little deck space did this for many years. When it looked as if the whaling industry was about to die, however, Nantucket whalers solved the difficulty of economic transport and volume by building brick furnaces on the decks of their ships, thus making it possible to obtain the oil from captured whales at sea wherever they were killed. As the whales became more and more timorous because of the butchery of the mammals in home waters, whaling ships had to make longer voyages to locate them. This meant larger ships for seaworthiness and to provide suitable holds for storing oil from many whales, ample furnace capacity for boiling oil, a "nest" of small whaleboats (including spares in case of accidents—which were frequent), and space for the storage of supplies and provisions for a long voyage. Also, a relatively large crew was required to work the ship, man the whaleboats, and boil, cooper, and handle the oil.

The original plan of holding all things in common in the whale fisheries of Nantucket failed to survive the test of time just as the same general socialistic scheme had to be discarded to encourage enterprise and give fitting acknowledgment to unusual ability and industry in all other early American settlements on the mainland. The real workers came to demand a share of the product and profits commensurate with their contribution of effort responsible for the gains. A system of partnership was developed in Nantucket which resulted in the "lay" system of paying the crew of the whaling boats a share of the profits from the catch according to each man's ability, productivity, and responsibility. This method of compensating a crew for services became almost universal on New England fishing boats and whalers, and it was used on privateers during the wars with England. After common ownership of whaling and fishing boats was replaced by private ownership, the "lay" system being continued still made every man or boy aboard a New England fisheries vessel (or a privateer) a partner in the enterprise or adventure for profit. As Spears says, "Where European whalers of those days sharpened the eyes of the men on lookout by an application of the 'cat,' every member of the Nantucket crew felt the dignity and responsibility of an owner." The partnership plan at Nantucket affected all parts of the whaling industry and all phases of operations, both ashore and afloat. Coopers, blacksmiths, and even boat-builders furnished the fruits of their labor and became part owners, or stockholders, in an enterprise, receiving for their pay a predetermined share of the proceeds of the venture. In like manner, the men who "tried out" the oil ashore were partners, and all worked with enthusiasm and earnestness, doing their best and producing as economically and efficiently as possible, for everyone was in fact working for himself. Whale oil was the medium of exchange by means of which Nantucket obtained from elsewhere the necessary things that it could not produce on the island, such as foodstuffs; building materials; sizable vessels; iron (from Spain) for harpoons, spears, and general blacksmith use; canvas; cordage for rigging, warps, lines, etc.

Nantucket, in 1715, owned six whaling and deep-sea fishing sloops that brought in six hundred barrels of whale oil and eleven thousand pounds of whalebone, which was sold for £1,100—an average of £183 per vessel. The island people became greatly interested in catching sperm whales, and they began "to whale out in the deep" and to use larger vessels. Sloops of 30 tons carrying two whaleboats were fitted out for cruises of about six weeks and sailed for home as soon as the hogsheads in the hold were full of blubber. In the meanwhile, alongshore whaling in small open boats continued, for records show that in 1726 twenty-eight such boats took eighty-six whales, Captain Abishai Folger being credited with six and Captains James Johnson and Shubael Folger each with five. In 1730, Nantucket had twenty-five deep-sea whalers, which, we are told, "secured 3,700 barrels of whale oil" and sold oil and bone for £3,200. But this meant an average of only £128 per boat, and the captain with a lay of one-eighteenth received for his deep-sea whaling voyages that year only a little over £7. This seems ridiculously small unless he had income from other sources, which he undoubtedly had, as he was probably afloat less than six months of the year. Records show that in 1745 the whaling industry was so well established on Nantucket that the island "shipped 10,000 barrels of oil to Boston alone." It would seem that whaling never paid as much as slaving (which Nantucket men abhorred), deep-sea trading, or even the Massachusetts Bay and Banks codfishing, but from 1690 on, Nantucket was whale-minded and developed the habit of whaling. Moreover, while deeply religious, these whalemen "took chances" and were under the sway of the gambler's instinct; they always expected to make a great haul quickly and come home with a "greasy ship," thus making a year's wages in some two months' time—which many of them did.

In 1730, Nantucket began to try to build vessels of its own, for it is recorded that in that year Capt. Isaac Myrick launched a 118-ton two-masted "snow," or ketch, which was square-rigged on the principal mast stepped amidships and had a much shorter mast stepped well aft. At the time that the ambitious Myrick built his "snow," Nantucket whalers were generally sloops and schooners of from 30 to 60 tons. In 1743 larger ships were needed for whaling, for they began to carry try-pots in furnaces built on board. This practice permitted and encouraged longer voyages to more distant seas, and size added to seaworthiness and carrying capacity for oil, making these long cruises possible and profitable. Nantucket sent a small shipment of whale oil to London as early as 1720, and it brought a price so much better than in Boston and the iron, canvas, cordage, etc., acquired with the proceeds of the sale were purchased so much cheaper than the same goods in the Boston market that Nantucket merchants commenced to develop a direct market overseas for their whaling products in exchange for the goods that they needed. Whereas this business was detrimentally affected by the cruisers and privateers of belligerents (and pirates) during the wars of 1740-1762, nevertheless, it was continued.

The whalers discovered the Gulf Stream and found hunting profitable along the edges of the current because of the existence there of much whale food. Through the whalers, American captains in the transatlantic and West Indian trades learned of the existence and general course and varying width of the stream and soon learned to avoid it or benefit by it according to the direction of their voyages. Benjamin Franklin (1706-1790)— whose mother, Abiah Folger, was the daughter of Peter Folger, a Nantucket whaleman and descendant from an early settler—made a chart of the Gulf Stream that had general circulation, but for many long years arrogant British skippers refused to pay any attention to it, as they disliked to take any ideas from colonials. American whalers skirted the Gulf Stream and hunted whales from the Hatteras grounds north and east to the Banks of Newfoundland, across the Atlantic, and then cruising south they became acquainted with the waters around the Azores and Madeira and later discovered grounds off the coast of Africa. From the Banks of Newfoundland, they cruised north to Greenland and were among the icefields off Cape Desolation in 1732. Voyaging against the stream and on its edges to the south, the whalers hunted off the coast of Florida and Cuba, cruised in West Indian waters, and later, crossing the equator, "pursued the whales off the headlands of Brazil, along the desert coasts of Patagonia and among the treeless Falklands." In 1767 fully fifty New England whalers were reported as engaged in experimental cruises in far southern waters. The MERCHANTS' MAGAZINE of November 1840 gives the following dates of the extension of the Nantucket whale fishery: "The Island of Disco, in the mouth of Baffin's Bay in the year 1751; Gulf of St. Lawrence 1761 [held back by the French]; coast of Guinea 1763; coast of Brazil 1774." Capt. Uriah Bunker, in the brig *Amazon* of Nantucket, is said to have made "the first voyage across the equinoctial line to the Brazil Banks" and returned to port with a "full ship" on April 19, 1775, "just as the redcoats were in full retreat from Concord and Lexington."

In 1762, while commissioners were negotiating terms of peace in Paris, 78 whalers cleared from American ports, of which more than half were from Nantucket. In 1766, Nantucket alone sent to sea 118 whalers, aggregating some 8,900 tons (an average of about 75 tons per vessel), and it is reported that they brought home 11,969 barrels of oil valued at $129,983. By 1770, Nantucket owned 125 whalers averaging 93 tons, which brought home in the year 14,331 barrels of oil worth $358,200 as soon as landed. During the next five years (the period immediately preceding the War of the Revolution and the struggle for American independence), the Nantucket whaling fleet averaged 150 vessels, consisting of 65 of the smaller craft (averaging 75 tons) regularly used in the northern, or short-voyage, whale fishery and 85 vessels, averaging 120 tons (ranging from 90 to 180 tons), regularly used and fitted out annually for the southern whale fishery and long-distance voyages. Originally, the whalers were sloops, ketches, and schooners, but many brigs or brigantines were in the Nantucket fleet in 1770, and barks and ships soon followed.

In a U.S. Government report dated February 2, 1791, made by the secretary of state to the House of Representatives on the whale and cod fisheries is the following table showing the "State of the Whale Fishery in Massachusetts from 1771 to 1775," which shows that Nantucket owned 150 of the total of 304 Massachusetts whalers fitted out annually and over 54 per cent of the total tonnage.

Whaling Home Port	Northern Whale Fishery: Number of Vessels	Northern Whale Fishery: Tonnage	Southern Whale Fishery: Number of Vessels	Southern Whale Fishery: Tonnage	Total: Number of Vessels	Total: Tonnage	Total Number of Seamen	Annual Take in Barrels: Spermaceti Oil	Annual Take in Barrels: Whale Oil	Annual Take in Barrels: Total
Nantucket Island ...	65	4,875	85	10,200	150	15,075	2,025	26,000	4,000	30,000
Dartmouth (New Bedford)..	60	4,500	20	2,000	80	6,500	1,040	7,200	1,400	8,600
Wellfleet (Cape Cod)	20	1,600	10	1,000	30	2,600	420	2,250	2,250	4,500
Boston	15	1,300	5	700	20	2,000	260	1,800	600	2,400
All others	23	1,545	1	120	24	1,665	314	2,140	400	2,540
Total	183	13,820	121	14,020	304	27,840	4,059	39,390	8,650	48,040

The Massachusetts whaling ports other than the four principal ones above stated were Martha's Vineyard (the island west of Nantucket) with 12 vessels totaling 720 tons and carrying 156 seamen; Falmouth (in Barnstable County on Cape Cod) and Swanzey (Swansea —near Fall River), each with 4 whalers totaling 300 tons and carrying 52 men; Barnstable (on the north shore of the Cape) and Lynn (between Boston and Salem on Nahant Bay).

The average size of all these Massachusetts whalers was 91.6 tons and those hailing from Nantucket 100.5 tons; the whalers engaged in the northern fisheries averaged 75.5 tons and those in the southern fisheries 115.9 tons and cost about $46, or slightly more, per ton to build, depending on size, rig, and specifications. Crews averaged between thirteen and fourteen to the whaler. We are told: "The right whales [during this period] gave ten pounds of bone for each barrel of oil. One-fourth of the oil from the sperm whales came from the head. This oil sold for $150 a ton or $18.75 a barrel. Plain sperm oil sold for $100 a ton and right whale oil, which was darker and of a rank odor, brought $50. Whalebone sold for 15 cents a pound"; also, "The number of ships in the whale business that were owned outside of Massachusetts in the year 1775 was between 50 and 60. Rhode Island and Connecticut owned most of them." This means that about 85 per cent of all the colonial whalers were owned in Massachusetts and 42 per cent of the total in Nantucket. The eastern end of Long Island (New York), of historic fame, continued to have a prominent whaling port at Sag Harbor and in 1760 had "three brave sloops searching for whales in icy northern latitudes." In 1842, Sag Harbor was practically tied with New London for the honor of being the fourth most important whaling port of the United States. At the outbreak of the armed Revolution, the American colonies owned, it is said, 360 whaling vessels, which registered 33,000 tons and employed 4,700 men at sea besides the large number to whom the industry gave livelihood ashore. The annual product of this fleet has been stated as "probably at least 45,000 barrels of spermaceti oil and 8,500 barrels of right whale oil, and of bone nearly or quite 75,000 pounds." Nantucket, it appears, was responsible for about 58 per cent of the entire colonial take of spermaceti oil during the few years preceding the Revolution and about 56 per cent of all whale oil.

A contemporary writer tells us how Nantucket youths—destined for whaling from the time of birth—were educated to fulfill their destiny:

> At school they learn to read and write a good hand, until they are twelve years old; they are then in general put apprentices to the cooper's trade, which is the second essential branch of business followed here; at fourteen they are sent to sea, where in their leisure hours their companions teach them the art of navigation, which they have an opportunity of practising on the spot. They learn the great and useful art of working a ship in all the different situations which the sea and wind so often require; and surely there cannot be a better or more useful school of that kind in the world. Then they go gradually through every station of rowers, steersmen and harpooners. Thus they learn to attack, to pursue, to overtake, to cut, to dress their huge game, and after having performed several such voyages and perfected themselves in this business, they are fit either for the counting-room or the chase.

As Salem youths were from childhood days educated and trained to make good seamen, officers, captains, traders, supercargoes, and merchant shippers so were the boys of Nantucket taught to become the world's best-grounded and most thoroughly and broadly trained whalers. The advantage of a small and more or less isolated community in producing expert specialized seamen is obvious.

On shore the effect of sound training and of co-operation for the good of the community as well as the individual was for years an outstanding characteristic of Nantucket's industrial life. The keynote of every branch of the whaling trade was co-operation and efficiency. In NIMROD OF THE SEA, Captain Davis, writing of Nantucket, says:

> The cooper, while employed in making the casks, took care that they were of sound and seasoned wood, lest they might leak his oil in the long journey; the blacksmith forged his choicest iron in the shank of a harpoon, which he knew, perhaps from actual experience, would be put to the severest test in wrenching and twisting, as the whale in which he had a hundredth part interest was secured; the ropemaker faithfully tested each yarn of the tow-line to make sure that it would carry two hundred pounds strain, for he knew that one weak inch in his work might lose to him his share in the fighting monster.

Before Nantucket—handicapped by its shallow waters, shoals, and geographic position, with island limitations—commenced to be eclipsed in the 1820's by the more favored mainland port of New Bedford, with its fine deep harbor and transportation advantages, it was said that the island interested in a business and industrial sense only in whaling and the production and marketing of whale products exemplified the best co-operation of capital and labor ever accomplished. This is something that could never be said of New Bedford, which also operated under a perverted form of the "lay" system during its and the country's golden age of whaling, 1830-1860—golden only for the owners and a foul system of exploitation for others.

American whalers were probably the greatest explorers and discoverers that ever sailed the ocean when worth-while knowledge in regard to islands, seas, channels, peoples, and trade was concerned. Whaling was a grim and hazardous business, demanding great skill coupled with courage and determination. The need for whale oil—so incomparably superior to animal oil, etc.—as an illuminant (before the discovery of mineral oil, the use of gas, and the invention of electric light) made whaling an essential as well as a most profitable industry. Edmund Burke's speech in Parliament of March 22, 1775, on "Conciliation with America," permeated as it is with the rhetorical grandiloquence inseparably associated with Irish political pomposity, nevertheless, is a great tribute to American whalers:

> As to the wealth which the colonies have drawn from the sea by their fisheries you had all that matter fully opened at your bar. You surely thought those acquisitions of value, for they seemed even to excite your envy. And yet the spirit by which that enterprising employment has been exercised ought rather, in my opinion, to have raised your esteem and admiration. And pray, sir, what in the world is equal to it? Pass by the other parts, and look at the manner in which the people of New England have of late carried on the whale fishery. Whilst we follow them among the tumbling mountains of ice and behold them penetrating into the deepest frozen recesses of Hudson's Bay and Davis's Straits; whilst we are looking for them beneath the Arctic Circle, we hear that they have pierced into the opposite region of polar cold, that they are at the Antipodes and engaged under the frozen Serpent of the south. Falkland Island, which seemed too remote and romantic an object for the grasp of national ambition, is but a stage and a resting-place in the progress of their victorious industry. Nor is the equinoctial heat more discouraging to them than the accumulated winter of both the poles. We know that whilst some of them draw the line and strike the harpoon on the coast of Africa, others run the longitude [i.e., steer due south] and pursue their gigantic game along the coast of Brazil. No sea but what is vexed by their fisheries. No climate that is not witness to their toil. Neither the perseverance of Holland, nor the activity of France, nor the dexterous and firm sagacity of English enterprise ever carried this most perilous mode of hardy industry to the extent to which it has been pushed by this recent people, a people who are still, as it were, in the gristle and not yet hardened into the bone of manhood.

Nantucket, which followed the eastern part of Long Island and Cape Cod in taking up whaling, quickly surpassed them both and all other whaling communities in the American colonies. Seeing Nantucket's prosperity—which came to it by intelligent and concentrated effort, courage, rare industry, and willingness to take the initiative—the shipowners of other ports sought to share in it, but as long as whalers were of a size that could efficiently use the limited depth of water at Nantucket, that island held the undisputed position as the leading whaling port of America and of the world. The whaling shipowners of other ports sent to Nantucket for men to serve on their ships as captains and mates, and it was said that before "the evil days of the Revolution," Nantucket owned as many whaling ships as all the other American ports combined and that Nantucket men commanded or held officers' berths aboard almost two-thirds of colonial whalers. Also, there was a great demand for Nantucket whaling men, captains, mates, harpooners, and seamen abroad. Writers tell us that travelers to the colonies from Europe prior to the Revolution were astonished to find that America was a land where everyone was gainfully occupied and busy and that there were no beggars. Spears says: "To its lasting honor Nantucket was a community not only where no one begged, but where every man was a laborer, and where every man was a capitalist, or, at worst, had capital within immediate reach." From Weeden's Economic and Social History of New England, we read of Nantucket whaling: "It is a fascinating theme. Nowhere in the whole history and evolution of peaceful commerce has such actual romance emanated as glowed in the voyages and lives of these homely men. These common folk, in their contest with the monsters of the deep, easily paralleled the old life of viking and sea rover."

The story of Nantucket during the War of the Revolution is a tragic one. When the British were developing plans for coercing the colonials by a blockade, which, it was felt, would inevitably result in either submission to British authority or starvation, a committee of the House of Parliament was directed to consider the condition of affairs at the island of Nantucket, and a résumé of the findings as published in Dodsley's ANNUAL REGISTER of London tells us:

The case of the inhabitants was particularly hard. This extraordinary people, amounting to between five and six thousand in number, nine-tenths of whom are Quakers, inhabit a barren island, fifteen miles long by three broad, the products of which are scarcely capable of maintaining twenty families. From the only harbor which this sterile island contains, without natural products of any sort, the inhabitants, by an astonishing industry, keep 140 vessels in constant employment. Of these eight are employed in the importation of provisions for the island, and the rest in the whale fishery; which with an invincible perseverance and courage they have extended from the frozen regions of the Pole to the coasts of Africa, to the Brazils and even to the Falkland Islands; some of those fishing voyages continuing for twelve months.

The Quakers were pacifists and conscientiously opposed to war and fighting other human beings, but apparently some innate love of a good fight found vent in their heroic battling with the whales, and the most successful whaling communities other than Nantucket (such as New Bedford) were founded by Quakers—described as "stiff-necked religious independents," with "bull-dog persistence" in their fights for principle. Nantucket was defenseless when the war broke out, not a gun was mounted on the island, and the people wanted only to be let alone to pursue peacefully their occupation of whaling. The British, however, ignoring the appeals of the Quakers in England, started out to use their great navy to blockade the American seacoast, including the island of Nantucket, scour the high seas for American vessels, seize all colonial whalers possible, and impress their crews, with the object of exterminating American whaling and building up a British whaling industry, while destroying Nantucket by starvation and raids. On the first of these destructive dashes, the British burned fourteen ships moored at the wharf and the storehouses ashore. The seafaring men of Nantucket persisted and kept sending out a few whalers; they also, according to Weeden, "occupied themselves in the common and inferior work of catching cod and mackerel in the nearer waters"; but they could neither buy nor make salt to preserve their catch, for "the fogs around their island gave them a too infrequent sunlight" for solar evaporation. We also read that "as the war developed, West India produce became dear, and the whalemen engaged in this commerce," but ran the constant risk of capture by British cruisers, privateers, and pirates. Some of the inhabitants of Nantucket migrated to the mainland to escape starvation, some resumed the search for whales near shore in rowboats, and others manned blockade-running whaleboats. The younger men of Nantucket did not take kindly to British arrogance, inhumanity, and acts of war, and as the spirit of patriotism gained the ascendancy over the tenets of an inborn religious belief, they went to fight for their country, enlisting on government cruisers and later on the more popular privateers. John Paul Jones, when he sailed on the *Ranger* of the Continental Navy from Portsmouth, N. H., had twenty-five young whalemen from Nantucket in his crew. John R. Spears writes:

Whenever an American ship was captured by British cruisers, the crew were at once interrogated to learn where each man hailed from. A list was then made of all Nantucket men found on board, and these, when they had arrived in England, were offered good wages as well as liberty, provided they would ship on British whalers. Naturally some accepted the offer. When, however, not enough whalers were thus secured, the obdurate Nantucket men were fed on food of such poor quality and so scant in quantity that they felt obliged to eat snails and rats found in the prison to keep soul and body together. In time, these methods of persuasion having failed, the Nantucket men were taken from prison and compelled to choose whether they would go whaling or ship on a British man-o'-war and serve under the claws of the cat.

The British Government had determined to establish a British whale fishery. As few British subjects knew anything about whale fishing, and because Nantucket men knew all about it, the authorities tried to compel the captured whalers to man the ships destined for this fishery, and not only secure the bone and oil wanted in the market, but at the same time build up a whale-fishing population at some port in England. To encourage the owners of British ships fitted for this fishery, the government granted each ship a bounty of from £500 to £1,000.

American whalers, though small, were evidently sufficiently numerous and successful in their catches not only to supply the American market before the war of 1775-1783 but also to serve, and some historians claim almost to corner, the British market. The truth of such a statement cannot be verified in these days, but there is abundant evidence to show that the bold ventures and successful voyages, with their steadily increasing product of oil obtained at low cost, "greatly distressed the English whalers" and that, when the war broke out, the British Navy received very definite orders to exterminate the American whaling industry. Britain embraced to the full the opportunity presented of wiping out the colonial fishing fleet. Its frigates and sloops of war swarmed over all fishing grounds as well as blockaded the New England coast, captured or destroyed American whalers and deep-sea fishing vessels wherever they could be found, and forcibly impressed their crews into the king's service —which meant virtual slavery upon a British man-of-war. John Adams wrote from abroad on September 13, 1779, to the council of Massachusetts: "Whenever an English man-of-war or privateer has taken an American vessel, they have given to the whalemen among the crew, by order of government, their choice either to go on board a man-of-war and fight against their country or go into the English whale fishery." The American commissioners in France, Benjamin Franklin and John Adams, in the fall of 1778 wrote that the English in 1777 had carried on "a very valuable whale fishery on the coast of Brazil and off the River Plate" and that in September and October of 1778 they had sent seventeen vessels out to these same grounds to hunt whale. They further declared: "All the officers and almost all the men belonging to these seventeen vessels are Americans from Nantucket and Cape Cod in Massachusetts, excepting two or three from Rhode Island and perhaps one from Long Island." A list of twenty American captains of British whalers obtained from the officers of three of the whalers, which had been captured by the French, shows that sixteen (or 80 per cent) of these skippers of British whalers at this time were Nantucket men. Adams urged that American armed vessels be sent to seize this British whaling fleet, declaring that if this advice were acted upon promptly "at least four hundred and fifty of the best kind of seamen would be taken out of the hands of the English and might be gained into the American service to act against the enemy."

Historians tell us that Nantucket whalemen impressed during the Revolutionary War to serve on English whalers were so superior to English sailors that they were in great demand in this service after the war and that Enderley Brothers, of London, said to be the only English firm of whalers which was able to maintain itself "in the hunt for the mighty cachalot" under the competitive conditions existing in the trade throughout a good part of the nineteenth century, made a general practice of having expert Nantucket whalemen on every ship that it sent to sea.

As conditions on Nantucket Island became increasingly severe in 1781 due to an effective British blockade, Timothy Folger and William Rotch went as envoys from the island to New York to plead with the authorities to grant permits to the "consistent Quakers" of Nantucket to "set afloat 20 open boats for alongshore fishing, 4 deep-water whale ships and 10 small coasters for carrying food and fuel from the mainland." Surprisingly, Admiral Robert Digby, commanding at New York, issued permits for Nantucket whalers to make deep-sea voyages in 1782 (if they conformed to certain clearly set forth and reasonable requirements), and seventeen whale ships put to sea. Notwithstanding complete conformity with the conditions set forth in the permits, one whaler was burned, and two were taken as prizes by the British. Later, another British cruiser refused to honor Admiral Digby's permit and seized a Nantucket whaler as a prize. Two more were taken to Salem and Boston, respectively, by patriot-privateersmen because they were sailing under enemy permits; these vessels were later released by the courts of Massachusetts on the grounds of humanity, and as the war came to a close in the spring of 1783, the American Congress had agreed to a measure that would permit Nantucket whalers to sail with British permits.

Historians tell us that 134 Nantucket vessels were captured by the British during the War of the Revolution and that 15 others were wrecked. Morison, in MARITIME HISTORY OF MASSACHUSETTS, says, "Nantucket lost one hundred and fifty vessels by capture and shipwreck, leaving only two or three old hulks out of her entire fleet." Whereas the stated total loss is probably correct, Nantucket, according to the record of British permits granted, had 24 deep-sea whalers in the fall of 1782, and it is assumed that about 20 of them were seaworthy in the spring of 1783. Marvin, in THE AMERICAN MERCHANT MARINE, puts the loss by destruction of Nantucket property as a result of the war at "exceeding one million dollars" and states that "in eight hundred Nantucket families there were 202 widows and 342 orphan children." Spears, referring to the large number of young and active men of the island who were lost during the fight for American independence, says, "Over 1,200 Nantucket men were killed or captured in the course of the War of the Revolution." The great days of Nantucket as a whaling port passed with the war fought for the independence of the colonies, which "wiped out her ships and killed or scattered her sailors." During the post-war years of reconstruction and progress, larger whaling ships than Nantucket harbor could handle—because of its bar and shallow water—became economically necessary, and New Bedford on the mainland, a near neighbor of Nantucket also with a Quaker-dominated whaling industry, came quickly to the fore as the old island port played thereafter a secondary role.

In the early days of whaling, when the vessels used were of 30 to 60 tons, Nantucket, with its maximum of 10 feet of water over the bar (and only 7½ feet at low tide) and a good, small harbor, was an excellent, well-located port for the purpose; but when ships reached a size of 90 tons or more, trouble began to be experienced with draft of water. In pleasant weather, lighters were often sent out to receive part of the cargo of whalers of 100 tons or over to facilitate getting the vessels over the bar, while in bad weather the bigger Nantucket ships went to Martha's Vineyard or mainland ports to unload part or even all of their cargoes. By 1803 not only had lightering at Nantucket become expensive and at times hazardous but also the whalers had become so large for the necessary long-voyage trade that they could barely be taken over the bar when light. At this time, Nantucket petitioned the United States Government for a very moderate and reasonable measure of co-operative assistance. It did not do the usual thing and ask for a substantial grant of money to finance the making of necessary harbor improvements, but after referring to the large bounties then being paid by the British and French governments to encourage and sustain their whaling industries, the Nantucket whalers asked "that Congress would grant them the nett revenue collected in Nantucket as a fund to enable them to extend piers into the sea, so as to form a narrow channel which might be deepened and would be kept deep, when so confined, by the rapidity of the tide flowing in and out." The scheme proposed by the plain fishermen of Nantucket was that later used with success at the mouth of the Mississippi and at the entrance to the harbor of Charleston, S. C. The people of Nantucket merely asked that they be permitted for a time to retain their own contribution to the financial support of the national government and use the money to improve facilities, so that they could perpetuate their business and increase their ability to make greater contributions to the support of government. A committee of Congress considered the modest and worthy petition and in its report commented "with great pleasure on the enterprise and skill with which the inhabitants of Nantucket have pursued the whale fishery; affording an admirable example of zeal and industry to all nations of the earth." Then the committee turned down "cold" the requests for government co-operation, for it resolved "that the inhabitants of the island and town of Nantucket . . . have leave to withdraw the said petition."

In 1806, Nantucket whalers again presented their problem to Congress and dwelt on the hardships being experienced because of the need of taking their ships to other ports to discharge whale oil into lighters and further said: "Add to this the [fact that] collectors of the customs charge the fees of office in each collection district, although the ships have no foreign goods on board, so that whaling vessels are almost always compelled to pay double custom house expenses." Relief from this official abuse, which proved a great handicap to Nantucket operators, was fully expected, but a committee of Congress unsympathetic toward problems affecting the maritime states and seaboard communities declared: "It would seem to be fair and reasonable that the collectors of customs should receive their regular fee in transacting all their official business"; for "the fishery is profitable to those who carry it on," and the payment of double fees "cannot operate, in any essential degree, as a discouragement." At this time, the British whale fishery was flourishing—backed by a patriotic and farsighted government, an aggressive ocean policy, and a strong navy. It is no wonder, considering the attitude of the Jefferson administration toward Nantucket whalers, that the American whaling industry was in the depths of an unwarranted and unprecedented depression. During the period of Jefferson's Long Embargo (December 1807-March 1809), American whaling was "wholly ruined," and at this time "most of the whalemen whose names appear in the list of captains of foreign whale ships emigrated." Nantucket men, in particular, felt for their government a great measure of disgust, which had been pyramiding with cause since Jefferson became president in 1801, and the embargo felt in 1808, following the Congressional setbacks of 1803 and 1806, was "just too much for Nantucket whale men to stand."

New Bedford was first settled by Joseph Russell, a ship carpenter, fisherman, and farmer, who with his sons Joseph and John built vessels that engaged in offshore whaling and tryworks to take the oil from the blubber on the Acushnet River. Refining facilities were later erected for use with sperm oil, and in 1765 Capt. Joseph Rotch, an experienced and prosperous Nantucket whaler, joined with the Russells on the Acushnet, bringing with him several whaling vessels. This long-headed skipper felt the need of a harbor that was "deeper, broader and safer" than those of Nantucket, Martha's Vineyard, or on the more populous Apponegansett River on the mainland (where Dartmouth was located, which prior to the Revolution was second only to Nantucket in the size of its whaling fleet and the amount of business handled). During the Revolution, the whaling village of New Bedford was treated almost as roughly by the British as the more exposed island of Nantucket, and business was depressed almost to the point of extermination. The enemy raided the port, burned its warehouses, tryworks and oil refining facilities, and 34 vessels in the harbor; out of a whaling fleet of some 45 sail, only 2 or possibly 3 survived the war and were available for service in 1783.

After the embargo and the War of 1812, New Bedford grew in importance as a whaling port as Nantucket declined. In 1806, 13 whale ships were fitted out and sailed from Nantucket and 8 from New Bedford. In 1818, 25 whalers cleared from New Bedford and 18 from Nantucket. In a supreme effort to remain a great whaling port when whalers had become too large and of too deep draft to cross the sand bar outside the harbor, Nantucket actually built and operated for years (1842-1849) a steam-operated floating dry dock called a "camel." The camel partially submerged to receive a ship in deep water, pumped itself out and, floating light with its relatively great beam and flat bottom, was towed by a light-draft, side-wheel tug over the sand bar to a deep dredged section of Nantucket's harbor, where the camel again submerged by means of sea cocks and water ballast, and the deep-laden whale ship was towed by the steam tug to its discharging wharf. But the lightening of loaded ships over the bar was not as successful as anticipated, and the handicaps of Nantucket as both a receiving and distributing point were too great to be overcome by such means.

Reference has been made to 1842 as "Nantucket's most abundant year," but the apparent prosperity was fleeting. Four years later, a cataclysmic disaster occurred, for a fire spread to the harbor and destroyed the greater part of its shore marine facilities and shipping then in port, with a loss of several hundreds of thousands of dollars of invested capital at a time when Nantucket was struggling "to keep on its feet." In 1846, 69 whalers cleared from New Bedford and 16 from Nantucket. In 1857, New Bedford owned 329 whaling ships and sent 95 to sea; whereas Nantucket owned 41 such vessels and sent only 4 of them out from their home port, others being handled elsewhere. By 1874, Nantucket's name had disappeared from the list of American whaling ports. As Spears says: "Because only ten feet of water was found on their harbor bar at best, the whalers who taught their art to the whaling world were beaten at last and compelled to emigrate to other ports where the water was deeper." For about a century and a quarter, Nantucket—most deplorably handicapped in certain respects by nature —led the world not only in the art of whaling but also as its premier port. When some sixty years later it passed into oblivion as a whaling center, it left its impress on whaling the world over, and New Bedford, its Quaker mainland offspring, being better located for harbor and shipping facilities, carried on as America's premier whaling port to the end of merchant sail and of whaling in windjammers. Whereas Nantucket lost the leadership in the whaling industry to New Bedford in the late twenties and did not boom phenomenally after the War of 1812 as did that mainland deep-water whaling port, it continued to grow for many years notwithstanding its geographic and natural handicaps and did not reach the peak of its population until 1843, when it had nine thousand inhabitants, 88 whalers, and the largest output of refined oil and sperm candles of any American community; it also reported "7,500 sheep" and cultural development deemed worthy of special mention in an offshore island settlement. Whaling and population tapered down when the "camel" for transporting vessels over the bar failed, and "the last forlorn whaling bark" sailed from Nantucket in 1870.

The War of the Revolution started a long period of depression affecting the American whaling industry, from which it did not recover until long after the War of 1812. The following statistics give the annual averages of the Massachusetts whaling industry for three periods: (1) prior to the Revolution, (2) before the adoption of the Constitution, and (3) in Jefferson's administration previous to the Embargo of 1807:

Period	Number of Whalers Annually Fitted Out	Tonnage		Gallons of Oil Brought In		
		Total	Average per Vessel	Sperm	Whale	Total
1771-1775	304	27,840	91.6	1,250,785	272,475	1,523,260
1787-1789	122	10,210	83.7	251,370	413,595	664,965
1803-1806	30	9,360	312.0	395,640	677,422	1,073,062

In the latter period, 27 of the 30 whalers were fitted out in the Massachusetts ports of Nantucket and New Bedford, the only other American whaling ports, each of which fitted out one whaler annually, being New London, Conn., and Sag Harbor and Hudson, N. Y. The predominance of sperm oil in the pre-Revolutionary period is significant as is also the pronounced increase in the size of whalers in the first decade of the nineteenth century, which fact caused the eclipse of Nantucket and the rise to leadership of New Bedford. The discovery of new whaling grounds in far distant seas, which required larger ships to handle the products economically, saved the American whale industry from extinction during the first half of the nineteenth century and prior to the Civil War, but the need of bigger and deeper-draft vessels in the industry led to Nantucket's undoing.

For a long period after the War of the Revolution, Nantucket was literally impoverished, and for the first time in its history "beggars were crying for bread in the streets." Nantucket men who did not leave the island were forced to turn their hands to anything that would keep them and their families alive; some turned to codfishing and founded profitless settlements on the south shore of the island; one group attempted an East India trading voyage, with disastrous results. Morison says: "For the most part the people waited for better times 'taking in each others' washing' for a living according to the classic jest—and it was something more than a jest in the Nantucket of 1790 with no less than one hundred and eighty-five widows unable to support themselves." Some whaling continued, and we are told that by 1789 Nantucket had 18 vessels engaged in the northern right-whale fishery and an equal number pursuing the more valuable sperm whale in the South Atlantic. (At this time, the Buzzard's Bay ports—including Nantucket's mainland colonies—and Cape Cod, it is said, fitted out "fifty-seven small right-whalers of sixty tons and nine sperm whalers.")

In 1789 several Nantucket whalers went after sperm whales, which had been seen on several occasions off Madagascar; their long voyage was successful, and we are told that "their pluck and enterprise were abundantly rewarded." In the same year, Capt. James Shields, of Nantucket, sent in command of the British whaler *Amelia* to hunt whales off the coast of Brazil, on his own initiative took his ship on a pioneer whaling voyage around Cape Horn, and his mate, Archilaus Hammond, also of Nantucket, was the first white man to harpoon a whale in the Pacific Ocean. Captain Shields found the southwest coast of the American continent "a greasy ground," so he soon filled his ship with oil and was back in London in September 1790. Word of the newly found good whale-hunting grounds reached Nantucket late in the year, and shortly afterwards six Nantucket whalers (and one from New Bedford) rounded Cape Horn looking for Pacific Ocean fishing grounds. One of them, the *Washington* (Capt. George Bunker), was the first to fly the American flag in the Peruvian port of Callao, which soon became a rendezvous for New England South Sea whalers. The *Beaver*, another of the 1791 sextet of Nantucket Pacific pioneer whalers, has left some interesting records of herself and her historic exploratory whaling cruise. She was of 240 tons, and her "whole cost, fitted for the voyage, was $10,212.00" (i.e., $42.50 per ton). The *Beaver* carried seventeen men to handle three whaleboats with five men each, leaving two "shipkeepers" aboard when all three boats were out "hunting"; she had "four hundred iron-hooped and fourteen hundred wooden-hooped casks" for carrying oil. Food supplies for the voyage of seventeen months consisted of "40 barrels of salt meats, 3½ tons of hard bread, 30 bushels of beans and peas, 1,000 pounds of rice, 40 gallons of molasses, and 24 barrels of flour." During the voyage, the only food supply that the *Beaver* purchased is stated as "200 pounds of bread."

The Yankee Quaker whalers found good hunting along the Chilean South American coast and, we are told, "returned in time to profit by a good market in France." Historian Morison writes:

> From that time [1791] on, smoky glare of whalers' try-works was never absent from the vast spaces of the Pacific. Before the end of the eighteenth century the whalemen began that exploration of the South Sea which is still recorded by islands named for Starbucks, Coffins, Bakers, Folgers, Husseys and Howlands of Nantucket and New Bedford. On the island of Santa Maria in the Galapagos group was the "whalers' post-office"; a box on a tree where letters and two-year-old newspapers were exchanged. Even Australasia lay within their scope. By 1804 our whalemen and sealskinners had made themselves so comfortable along the north coast of Tasmania that the governor of Australia issued a proclamation against their building vessels on his shores.

It was a Nantucket whaler, the *Globe*, which under the command of the adventuresome Capt. George W. Gardner in 1818 discovered the South Pacific "offshore greasy grounds." Arriving at the usual Peruvian and Chilean whale-hunting area and finding no sign of whales after a long search, Captain Gardner sailed boldly and blindly due west into the unknown Pacific to try to find them on some new feeding ground. He succeeded, for twenty-six months after leaving Nantucket he was back in port with 2,090 barrels of sperm oil worth $61,555.73, all taken on the newly discovered hunting grounds. Incidentally, the *Globe* brought home the first cargo of over two thousand barrels of sperm oil ever to reach Nantucket. The famous whaling island was losing its tonnage leadership—because of its depth-of-water handicaps—to New Bedford on the mainland, but positively not its initiative and the leadership of its men, which were acknowledged the world over. On October 26, 1819, the whaling ship *Marco*, with Capt. Joseph Allen in command, sailed from Nantucket for the Pacific via Cape Horn and returned after twenty-nine months with a record cargo of 2,425 barrels of sperm oil aboard and the honor of being the first vessel to deliver at any port oil from the newly American-discovered Japanese whaling grounds.

Nantucket, from the first, operated independently of outside island influences and insisted on handling and marketing its own products, maintaining that all the profits resulting from the distribution and sale of the fruits of its enterprise, initiative, and industry must benefit the island and its inhabitants and no part go into the pockets of "off-islanders." The original co-operative plan of sharing the gains resulting from labor and adventures continued, with the proportion of the various participants being fixed by prior agreement and based on individual risk of capital, responsibility, and relative ability or importance to the success of the enterprise. The captain of a whaler generally knew the record and was well acquainted with the caliber of every man who sailed under him, and it is interesting to read that in the early nineteenth century many whaling skippers preferred Indians as harpooners. Wages were not paid on the whaling ships, but the old plan of a share of the profits for each man, or the "lay" system, was continued and recorded in written contracts.

Prior to the War of 1812, a contemporary commented on the apparent return to prosperity of Nantucket, and the town showed every sign of industry and thrift and of successfully coping with its handicaps of shallow water—lightering and using other ports for discharging—as whaling ships were increasing greatly in size and money was to be made hunting sperm whales in far distant seas with big (250- to 300-ton) ships. It was said that the island had doubled is pre-Revolutionary population and that in 1811 it owned some fifteen thousand tons of shipping, most of which was employed in whaling in the Pacific; that "almost the entire male population of Nantucket followed the sea; and the rest were dependent on it."

Chatterton, the British marine historian, wrote of American whaling communities such as Nantucket, New Bedford, Fairhaven, etc., where "there grew up whole families of whaling people whose life interest was wrapped up in this subject [of whaling], who married and intermarried those who built or sailed or part-owned the ships." He added, "At the beginning of the nineteenth century there were eight or nine thousand people living at Nantucket all practically dependent on the whaling industry." Herman Melville wrote that Nantucket was "more lonely than the Eddystone Lighthouse," and he referred to the people as "so shut up, belted about, every way enclosed, surrounded and made an utter island of by the ocean, that to their very chairs and tables small clams will sometimes be found adhering, as to the backs of turtles. . . . What wonder then, that these Nantucketers, born on a beach, should take to the sea for a livelihood."

The managing owner of a Nantucket whaler has been described as "a well-to-do retired Quaker skipper of the most strict narrow-mindedness, yet possessed of such a knowledge of ocean life as could hardly be surpassed by any other seafarers in the world." Long voyages, religious grounding that affected the personality, an all-permeating economy, untiring industry, and insistence on unwavering discipline created a special type of humanity described as "strong, independent, fanatically conservative, dominant, of an enclosed type of piety, yet most wonderfully wide-awake to the main chance of remunerative whaling and a hard business bargain." The Nantucket Quaker generally passed through the following stages of life: (1) childhood with virtually "salt water for milk," (2) schooling centered about whaling and the sea, (3) cabin boy on a whaler, (4) seaman, (5) harpooner, (6) mate, (7) captain, (8) shipowner, (9) retired capitalist. These Nantucket skippers were the hardest taskmasters. Melville tells that the crew of one God-fearing Quaker skipper had usually to be carried ashore when the whaler made port, as the men were "sore exhausted and worn out," and he adds in regard to this Nantucket captain: "For a pious man, especially for a Quaker, he was certainly rather hard-hearted to say the least. He never used to swear, though at his men, they said; but somehow he got an inordinate quantity of cruel, unmitigated hard work out of them."

The managing Quaker captain-shipowners ashore and retired skipper-capitalists were said to be "the keenest superintendents and the sternest critics of ships and men." Economy was a mania with them, and in "watching the pennies" they were in a class by themselves. Nantucket was built on industry and survived for many long decades because of thrift and "penny-pinching." We read of the farewell shouts of the retired owner-captain to a departing Nantucket whaler. The harpooners are admonished not to stave the boats needlessly, for "white cedar plank is raised full three per cent within the year"; and after a flow of last-minute orders and warnings, "Don't forget your prayers, either, Mr. Starbuck [petition the Lord to look after the Quakers' property]. Mind that cooper don't waste the spare staves. Oh! the sail-needles are in the green locker! Don't whale it too much a' Lord's Day, men; but don't miss a fair chance either, that's rejecting Heaven's good gifts." But if the largest owner of a Nantucket whaler was a retired Quaker sea captain, there were generally numerous other shareholders, some actively engaged in business or watching their investments of money accumulated by hard, tireless work and self-denial; other small fraction owners were often "widows, fatherless children and chancery wards," some owning "about the value of a timber head, or a foot of plank or a nail or two in the ship," but, nevertheless, interested part owners. All money that flowed to Nantucket was invested in whaling.

Whaling between 1775 and 1815, or the period from the beginning of the War of the Revolution to the end of the War of 1812 (and, in fact, for several years thereafter), was on the whole unprofitable and of much less consequence than it had been in the good times before the Revolution. The wars killed both export and domestic trade, but during the peace period of these years—1783-1812 and following 1815—strange as it may seem, the domestic demand for whale oil was quite low per capita per annum as compared with that of the early 1770's; for Americans, we are told, "had become so used to tallow candles during the war that they had to be educated to appreciate the excellent spermaceti article turned out by Nantucket." However, during this period, not only some whalers did well but also a few of "the more enterprising, skilful and fortunate" made good money. Such a one was the Nantucket whaler *Lion,* and the accounts of a voyage made by this ship in 1807 among the papers of the Massachusetts Historical Society show that the owners made a profit on a single whaling cruise of over $24,000, which was much more than the equipped ship was worth.

Samuel Eliot Morison, in MARITIME HISTORY OF MASSACHUSETTS, has written:

> Detached from the mainland, annexed to Massachusetts only in 1691, since held by the slenderest of political ties is a diadem of island jewels. . . . Hardly a spot on the New England coast lacks passionate devotees; but the worshipers of Nantucket form a cult of positive fanatics. Anchored on the edge of the Gulf Stream, this bit of terminal moraine has a unique climate, flora, landscape and population. On her south shore endlessly breaking, the southwest swells impart their surge to the long grasses of Nantucket's flower-starred moors. Under their lee nestles the one unspoiled seaport town of New England; a town in which every house built before 1840—and few were not—was sired out of the sea. For this island, peopled by Quaker exiles from Puritan persecution, created that deep-sea whaling, whose peculiar blend of enterprise, dare-deviltry, and ruthlessness forms one of the most precious memories of our maritime past. New Bedford and the minor ports of Buzzard's Bay were but mainland colonies of Nantucket; although in course of time, like the colonies of ancient Greece, they surpassed their mother state.

England and France Bid for Nantucket Whalers

The British authorities as early as 1764 sought to establish a whale fishery community at Halifax or Quebec in Canada, and unsuccessful efforts were made to get New England and particularly Nantucket whalemen to migrate. The practical Yankees refused to consider Quebec—so far away from the sperm fishing grounds—as a suitable economic location for a whaling port, and all New Englanders had an objection to Halifax as a fishing or any type of commercial or trading home port, as it had a military government, which was something "heartily detested by all Americans." Moreover, the Nantucket Quakers had "so invincible an aversion to the loose manners of the people [of Halifax] that nothing could induce them to remove thither, even supposing them reduced to the necessity of emigration." The story is told of how a young mate named Greene of a Nantucket whaler that had put into Halifax "had the audacity to interfere for the protection of a girl to whom the Duke of Clarence, admiral of the British fleet [and later William IV of England], was giving unwelcome attention, and when nothing else would protect the girl, Greene took the officer by the coat collar and the seat of the trousers and threw him down a flight of stairs." Evidently, the young Quakers were willing enough to exert force when deemed necessary in a worthy cause, such as fighting whales and protecting innocent girls.

After the War of the Revolution, during which Britain had prided itself that it had ruined American whaling for all time and obtained control of "the world's premier and dominant whaling industry," the British Government and leading merchants who had invested in the business were shocked when not one but three Nantucket "Yankee Quaker" whalers in early 1783 appeared in the Thames with full cargoes of oil of excellent quality, which was offered below the prevailing London price. England reacted promptly to this American commercial threat to its whaling industry, which it had imagined was strong, secure, and unassailable, not only by slapping a prohibitive import duty on American whale oil but also by taking vigorous steps to get the surviving Nantucket whalers (whom England described as "peace-loving Quakers, who in their hearts are still loyal to the king") to migrate from their island home to British territory. England's treatment of American whalers during the Revolution and the post-war period and the general respect of all seafarers for the fine qualities of the Nantucket whalemen—for their fame was world wide—caused France also to offer bounties to get them to move from the Massachusetts island and operate under the French flag. Marvin describes this historical period and the migration of certain Nantucket whaling families:

> After the Revolution, both England and France made strenuous efforts to transplant the Nantucket whaling business to their shores. Massachusetts had offered a bounty to restore this important industry which meant so much to the prosperity of state and nation. But England and France, with their greater wealth, held out very flattering inducements to the people of Nantucket. Indeed, a party from the island, persuaded by generous British bounties, did remove in 1786-1787 to the neighborhood of Halifax, Nova Scotia, and there built wharves, warehouses, factories for sperm candles and other accessories of the whaling trade. The new settlement was called Dartmouth, and for a time it was fairly prosperous. But the Nantucketers were not comfortable in their change of residence and change of flag. Some of them returned to their old home; others, led on by still heavier bounties, emigrated to England and settled in Milford Haven. From this Nantucket colony there sprang in after years England's most skilful and successful whalemen. It is a fine example of the power of heredity, which the long supremacy of Nantucket in the whale trade affords.

When Capt. William Rotch sailed from Nantucket in his ship *Maria* for London in July 1785 to develop plans to move many disgruntled Nantucket whaling families with the ships, belongings, and business to a more commercially promising location, he encountered the opposition of many island patriots, and Capt. Alexander Coffin, a Nantucket whaler, wrote to Samuel Adams suggesting legislation to prevent or hamper such wholesale emigration as was being proposed. Coffin said that Rotch "is now taking on board a double stock of materials such as cedar boards (commonly called boat boards) of which they have none in England, a large quantity of cooper's stuff for casks, etc. Neither does it stop here. The house of Rotch has been endeavoring to engage an acquaintance of mine to go to Bermudas to superintend the business at that place. . . . One of the company is now at Kennebeck, contracting with some persons for an annual supply of hoops, staves, and other lumber necessary for the business." As a result of the antagonism of Nantucket patriots to Capt. William Rotch's plans for bodily transporting much of the island's whaling business to a foreign flag under which the Quakers would be able to operate profitably and under protection, Massachusetts forbade exportation of certain materials and sought to curb Rotch's activities and influence. Yet, whereas the wholesale emigration to England, France, and Canada was vigorously discouraged, many families did move (nine at first to Dunkirk, France), but records show that over two hundred Nantucket men, either during or after the Revolution, accepted commands of British or French whalers.

During most of the eighties and nineties and the turn of the century, Britain and France actually bid against each other in efforts to obtain Nantucket whalers, and any of the island fishermen who were disposed to migrate because of economic conditions at home (brought about by foreign restrictions and embargoes and a weak American government) could obtain from either country "any terms within reason." The offers generally made by the British and French governments consisted of free transportation and guarantee of reimbursement of all moving expenses and costs incidental thereto, gifts of money with which to start life and business afresh, and free entry for ships and goods. The records show that the fishing fleet of the United States was paid a national subsidy, which aggregated $72,965.22 in 1793 and $93,768.91 in 1794, in an effort to permit the fleet owners to operate with profit under the Stars and Stripes and encourage them to resist "foreign temptations" and remain American.

A Catalogue of Nantucket Whalers, published later in the nineteenth century, gives a list of 149 Nantucket captains who commanded British whale ships prior to 1812, and large numbers of mates, harpooners, and seamen on foreign whalers were Nantucket or Massachusetts men. It was a British whaler, "manned by exiled Nantucketers," that in 1787 first pursued the sperm whale into the Pacific Ocean, and when the U.S. frigate *Essex* cruised against the British merchant marine in the Pacific during the War of 1812, Commodore Porter found many of the British whalers manned with Nantucket and Yankee Quaker crews. About this same time, the number of Nantucket captains on French whaling vessels was stated at 81. Some Nantucket families moved to Milford Haven, England, and a few to Nova Scotia, but the Yankee whaling community established on Halifax Bay, N.S., named Dartmouth was settled—as its name implies—by Buzzard's Bay whalers from what was virtually a mainland colony of Nantucket.

William Rotch, the Nantucket Whaleman and Quaker Internationalist

William Rotch, a whaler of Nantucket, became well known during the War of the Revolution. Whereas a consistent Quaker pacifist in a religious sense, he was a brave man and an ardent fighter for principles as well as being fearless in hunting whales. Rotch was primarily responsible for influencing the British admiral, Robert Digby, to grant sailing permits to a number of Nantucket vessels in late 1781; he fought with others to save from condemnation by Massachusetts courts two Nantucket whalers that were seized by colonial privateers for sailing under the protection of the enemy, and with Samuel Starbuck he waged a successful fight in Philadelphia before the American Congress, which finally agreed to have the colonies license Nantucket vessels that were furnished with British permits, and this in the interest of humanity, to save the islanders from what otherwise would have been inevitable starvation. Many sincere Quakers of Nantucket "got in bad" with the colonials on the mainland during the War of the Revolution, and this was but natural; for without an armed rebellion there would have been no independence, and pacifistic Quakerism did not contribute to the cause for which the American patriots were fighting. Many Nantucket people were accused of being "loyalists," of whom there were far too many on the mainland, and the religious conscientious objectors to war were repeatedly admonished by the Puritans, "Ye who are not for us are against us." Benevolent neutrality was scathingly condemned, particularly when the non-belligerents were the Puritans' religious arch-enemies, the Quakers, who, with the Anabaptists and Roman Catholics, had been deemed "beyond the pale" in the matter of religious faith.

William Rotch was an able whaler, a brave man, and an ardent advocate of principles before the enemy, Congress, and courts. Also, he consistently refused to let the war put a stop to his peaceful trading operations, and without regard to the attitude of the British or the colonials, he kept his ships cruising for whales, replacing vessels taken by the enemy. His financial losses during the war were said to be in excess of $60,000, which was a goodly sum in those days, when a 90-ton whaler could be built for about $4,000. It has been well said, "For perseverance under adverse circumstances, there was no man more noted in the annals of the whale fishery than Rotch."

The first American ship to cross the Atlantic and resume trade with Britain after the war was the Nantucket whaler *Bedford,* said to have been owned by William Rotch, and this was quickly followed by voyages of the whalers *Industry* of Nantucket (Capt. John Chadwick) and another Rotch ship, the *Maria,* so it was the adventurous Nantucket whalemen who "first spliced the several strands of trade between America and England." For a port that had had its shipping virtually exterminated by enemy raids and seizures during the war, it is surprising that a substantial measure of recuperation was so quickly evident. Moreover, it seems strange that shipments of whale oil should be made so promptly to England in early 1783, when at that time, "having no whale oil, the people of America had turned to substitutes, such as tallow candles," and as Spears says, "Even the lighthouses were in some cases compelled to use substitutes. It is likely that no other industry of the country suffered as much through the war as that of the whalers." William Rotch apparently thought that he could make good money and recover some of his losses from the British if he could get some early post-war cargoes of whale oil into England, and he was evidently too quick for the Englishmen. The British had been led to believe that the whaling industry of America had been smashed beyond hope of recovery during the Revolutionary War; therefore, the early visit of an American whaler—the *Bedford*—to England, loaded with oil (which was offered at a price somewhat below the British market), caused a sensation and much annoyance. This was increased, as the well-laden whaling ships *Industry* and *Maria* from Nantucket soon followed, dropped anchor, and offered their cargoes for sale. A London newspaper announced the arrival of the first American whaler in the Thames as follows:

> The ship *Bedford,* Captain Mooers, belonging to the Massachusetts arrived in the Downs the third of February, passed Gravesend the fourth, and was reported at the custom house the sixth instant. She was not allowed regular entry until some consultation had taken place between the commissioners of the customs and the lords of council, on account of the many acts of Parliament yet in force against the rebels in America. She is loaded with 487 butts of whale oil; is American-built; manned wholly by American seamen, wears the rebel colours, and belongs to the Island of Nantucket in Massachusetts. This is the first vessel which displayed the thirteen rebellious stripes of America in any British port. The vessel lies at Horsely down a little below the Tower, and is intended immediately to return to New England.

The British, who had been striving by every possible means—fair and foul—to develop and extend their whale fishery industry at the expense of the Americans during the War of the Revolution and for many years prior thereto, were of no mind to give any encouragement to Nantucket or "Yankee" whalemen by permitting the importation of "rebel" oil into Britain; so the government promptly laid a duty of £18 a ton upon foreign oil, and as other European maritime nations also strove to foster their domestic whale fisheries by protective duties, the American whalers were soon thrown back almost entirely on their own home market, which was in a sadly demoralized condition. Nantucket men, with William Rotch one of the spokesmen, petitioned the Massachusetts legislature for a bounty to save the whaling fishery and industry from extinction. It was said that oil selling for $85 per ton was costing the whalemen from $110 to $120 per ton to produce for the market. The legislature granted a bounty of £5 per ton on white and £3 on yellow sperm and £2 on whale oil "that may be taken or caught" by vessels "owned and manned wholly by the inhabitants of this commonwealth," following which so many Massachusetts whalers put to sea that the market became glutted with oil, the price fell sharply, the bounty became too expensive a burden for the state, and the whalers were worse off than they were before the bounty was granted them.

With Nantucket whaling in the depths of a depression of such a nature that the extreme thrift of the islanders coupled with their industry and initiative could not make the business pay or even return a new dollar for an old one and with practically all European markets closed to them, William Rotch not only remembered the British pre-war attempts to establish Yankee whaling communities in England and Canada but also heard that the authorities were still anxious to develop such a plan notwithstanding that during the Revolution they had forced many hundreds of competent Yankee whalers to serve on British ships. With England and France offering bounties to whalemen, Rotch and many other Nantucket men came to the conclusion that it would be well to investigate opportunities abroad and look for a chance to operate their business profitably—a condition which was being "denied them at home." William Rotch sailed for England on July 4, 1785, in the *Maria* of 202 tons (built for him at Pembroke, Mass., in 1782 and still whaling in 1872—when ninety years old) and went to London to see William Pitt, chancellor of the exchequer, with the thought of making a deal to transfer many of the Quaker whalers of Nantucket to some suitable port in England where they would be encouraged to operate efficiently and profitably and under protection. Pitt the Younger was not like his father, the Earl of Chatham, in his prime, and while friendly to Americans before the war, Pitt the Younger was somewhat resentful at the loss of the colonies and seems to have been lacking in courtesy. In any event, he kept Rotch waiting in idleness for four months and then turned over the matter of negotiations to Lord Hawksbury, who was known as "a gentlemen not very favorably disposed toward America." Rotch became weary of talk, delays, and indecision, so he stated his minimum terms of emigration: £100 sterling per family for transportation and £100 settlement, with a "take it or leave it" air. He said that, with these terms, one hundred families averaging about five persons per family "of the best blood of the island of Nantucket" would emigrate to the mother country. Hawksbury proceeded to haggle on price, asserted that a family could be transferred for £87-10-0, and offered that sum. Rotch declined and departed for France, where he wrote: "I had a separate interview with all the ministers of state necessary to the subject, five in number, who all agreed to and granted my demands. This was effected in five hours"—as against five months spent in England and getting nowhere.

William Rotch wanted to stay in Nantucket, but if forced by economic conditions to move, he desired to stay within the British Empire and preferably locate in England. Nevertheless, he made a deal with France—seemingly out of necessity. The concessions secured for the settlers, besides absolute freedom to exercise their religion, were a tract of land for homes, warehouses, and a dry dock; the importation of all whaling supplies and food free of duty; the full benefit of all privileges and the payment of all bounties allowed to French fishermen plus an additional premium per ton on the burden of all their vessels engaged in whaling; liberty to command and man their ships without interference; freedom from military duty in times of war as well as peace; and an increased import duty on oil brought in under foreign flags. Several Nantucket families, including that of William Rotch, accepted the proposition made and moved to France. In the meanwhile, Hawksbury, incensed at Rotch for visiting and negotiating with the French, hurriedly sent word to him that Britain would accept his offer and give him all the money and encouragement needed, including free registry of forty Nantucket whalers; but Rotch replied that the British had had their chance and that he would not have anything more to do with them. Thereupon, the British authorities sent a vessel direct to Nantucket to negotiate with the islanders and induce many of the whalers to go to Nova Scotia, but Lafayette stepped into the picture and urged that the Nantucket whalers, with their families, ships, and possessions, move to France and be free of British tyranny. Jefferson's report on this series of episodes says that only nine families of thirty-three persons moved to France at this time and that only two families journeyed in the British ship to Nova Scotia. However, these statements deceive and grossly understate the facts, for Nantucket and Buzzard's Bay whalers between the Wars of the Revolution and of 1812 emigrated in substantial numbers to France, England, and Canada.

Capt. William Rotch lived eight years in France and later wrote:

In the beginning of 1793 I became fully aware that war between England and France would soon take place, therefore it was time for me to leave the country in order to save our vessels if captured by the English. I proceeded to England. Two of them were captured, full of oil, and condemned, but we recovered both by my being in England, where I arrived two weeks before the war took place. My going to France to pursue the whale fishery so disappointed Lord Hawksbury that he undertook to be revenged on me for his own folly, and I have no doubt gave directions to the cruisers to take any of our vessels they met with going to France. When the *Osprey* was taken by a king's ship the officer sent on board to examine the papers called to the captain & said "You'll take this vessel in, sir; she belongs to William Rotch."

Rotch remained a year in England and started a whaling business there that was active for many years, while members of his family continued to live in France, which branch operated a fleet of whalers from there until 1855, a period of seventy years all told. In 1795, William Rotch was back at Nantucket, but he was not pleased with his reception, and a year later he moved to New Bedford on the mainland, where he continued his business as a whaler through many years of depression and discouragement. After surviving the Jefferson administration, including the Long Embargo of 1807-1809, and "Mr. Madison's war" of 1812-1815, he died in 1828. New Bedford was selected by Capt. Joseph Rotch (a member of the Nantucket Rotch family) in 1765 as the home port of his whaling fleet, and it had become a mainland Quaker whaling community destined—because of its deeper water and better harbor and transportation facilities—to supplant Nantucket as the country's leading whaling port as the nineteenth century advanced.

Nantucket, with a crop of young Quakers who fought for their country and for freedom from British oppression in the War of the Revolution, did not take kindly to many phases of William Rotch's internationalism. They remained Quakers as far as religious belief was concerned, but were primarily Americans and dominated by a love of country. These Nantucket men, as patriots, combated Rotch's plans to emigrate to Britain, France, or any other land that was not under the Stars and Stripes. When Rotch, after his nine-year sojourn in France and England, returned to the United States (merely because a Franco-British war was being waged and it was to his interest to live and do business in his homeland, which was a neutral country), they not only did not welcome him with open arms but also plainly showed that they were not pleased with his record of the preceding ten years or with his return and that they preferred his absence to his presence. Many of the Nantucket men who participated in the fight for independence, while retaining their religious belief as Quakers, developed a love of country and refused to live and work under any other flag. They were Americans first and Quakers afterwards, and these patriots influenced many Nantucket families who denounced and branded the voluntary emigrants to France, England, and Nova Scotia as deserters. William Rotch had proved himself to be the leading Quaker internationalist and, in fact, a man who felt the affection for his native land and his obligation to it so lightly that he could live happily in a foreign country and even in the land of his country's arch-enemy if only he were permitted to live in peace, freely exercise his religion as a Quaker, and be protected and encouraged in his business of making money. Rotch may have been a good Quaker, but he was not a heroic figure that appealed to men who had fought to free their native land from foreign oppression and by self-sacrifice, great risks, and the shedding of blood had won their independence.

American Whaling Ports and Fleets—Tonnage of Whaling and Deep-Sea Fisheries

New Bedford, on the mainland (at times referred to as Nantucket's sister town), was relatively late in entering the whaling trade, but it moved into prominence rapidly because of its larger and deeper harbor—as Nantucket's sun set—and, taking over the commanding position that the island had held, became for many long years, during the latter part of the era of wood whaling sail, the principal whaling port in the world. New Bedford, which became virtually the capital of the Cape Cod, Buzzard's Bay, and Vineyard Sound country, had the advantage (in regard to markets) of being on the mainland and was the center of a district of seafaring families that, it has been said, "bred the ablest deep-sea fishermen of any clime or era."

The pioneer New Bedford whaling merchant was Joseph Russell, who in 1755 sent out "several small sloops of fifty tons to hunt and capture whales." It is significant that, at this date, New England whalers had to travel far to get a catch, as the butchery of whales off the northeastern coast of the continent had driven the mammals into deep waters to the east, north, and south. Some of Russell's fleet sailed in the summer of 1755 "down the coast to Hampton Roads." These craft were primitive and very small with no furnaces aboard, so they could not boil or, as it was termed, "try out" their own oil. With holds jammed full of chunks of blubber stripped from whales, they sailed homeward through warm waters, and the reeking whale fat was transferred to the large kettles of the owners' "try houses" ashore. It was a messy, odoriferous business, and it is evident that the early New England whalemen in their quest for whale oil were by no means squeamish.

Following the War of 1812, the American whaling industry seemed to scatter itself among many northeast Atlantic Coast ports. We are told that of 68 whalers that went to sea after peace was restored in 1815, 50 sailed from Nantucket, 10 from New Bedford, 3 from Sag Harbor, Long Island, 2 each from Fairhaven, Mass., and Hudson, N.Y., and 1 from Westport, Mass., and that 14 of these ships returned to port "clean" (without oil). Whaling "dragged" in 1816 and 1817, and fewer ships were sent out, but in 1817 whalers that had sailed in 1815 and gone out to the Pacific returned with big "takes," and the recorded catch of sperm went over the million-gallon mark for the first time. The success of the Pacific whalers that returned home in 1817 really started the whale fisheries boom, which continued to the Civil War. The reported "take" of 1817 was 1,028,475 gallons of sperm oil, 561,830 gallons of whale oil, and 19,444 pounds of bone (for which there was but little demand), and the total income of the whalers for the year was $1,091,576.88.

Philadelphia turned to whaling in 1818, New York in 1819, Perth Amboy, N.J., in 1824, Edenton, N.C., in 1831, Poughkeepsie, N.Y., in 1832, Gloucester, Mass., in 1833, Newburgh, N.Y., in 1834, and Portland and Wiscasset, Maine, in 1835. The total number of American whaling ports had increased to thirty-two by 1835, but practically all the skippers of the vessels sent out to hunt whales had family names closely identified with the Quaker communities of Nantucket and New Bedford. While many seaports entered the whale fisheries, the real growth of the industry centered around Buzzard's Bay. In 1822, Nantucket sent 40 whalers to sea and New Bedford 33. In 1823, however, Nantucket sent 19 and New Bedford 26, and "the sceptre had departed from Nantucket forever." The advantages of New Bedford as a harbor and a shipping point on the mainland caused many home-loving Nantucketers to migrate to New Bedford, and the refining business increased there with greater rapidity than at Nantucket, as the island whale shipowners found it more economical and convenient to carry their oil to New Bedford even while they fitted out their ships at their home port. Nantucket's whaling fleet, which according to available statistics consisted of 23 ships in 1815, had increased by 1820 to 72, aggregating 20,449 tons, and New Bedford, Cape Cod, New London, Long Island, New York, and Boston were engaged in the fisheries with vigor and determination. At the end of the thirties, the Nantucket whaling fleet consisted of 81 bottoms, and the tonnage had risen to 27,364 tons; but while Nantucket was the second most active whaling port in the country, its number of whaling vessels was only 45.8 per cent, with a registered tonnage of only 48.7 per cent, of that of the rival mainland port of New Bedford.

New Bedford profited by the lesson of concentration in whaling and extreme economy taught by Nantucket and went further and lasted longer because of (1) its spacious harbor in contrast to the bar-blocked entrance to Nantucket and (2) its advantages in transportation due to mainland railroad connections. New Bedford Quakers saw a future in whaling, refitted their merchant vessels as whalers, and abandoned for all time the general carrying trade, which was at low ebb after the War of 1812. They "went out after oil" with the spirit and perseverance of Nantucket—and with less scrupulousness—and made New Bedford within a few years the leading whaling port of North America and, soon after, of the entire world. Emerson wrote: "New Bedford is not nearer to the whales than New London or Portland, yet they have all the equipment for a whaler ready and they hug an oil cask like a brother." Morison, in MARITIME HISTORY OF MASSACHUSETTS, says: "They were as tight-fisted, cruel and ruthless a set of exploiters as you can find in American history, these oil kings of New Bedford. But they were canny as well. By intelligent specialization they escaped the commercial extinction that overtook the smaller Massachusetts seaports."

Nantucket was first settled because of the persecution of the Quakers by the Massachusetts Puritans, and we are told that as the isolated island increased in population, "nine-tenths of the inhabitants were of that liberty-loving sect." Nantucket whaling families migrated to New Bedford, and the people in that region were for the greater part Quakers. The settlement first acquired notoriety in New England by its persistent refusal to support a Puritan pastor. When the General Court levied a tax of £100 on the citizens of the community, presumably to be paid to a Puritan minister, the Quakers refused to pay it, but promptly raised seven times the amount of the assessed tax to combat it as a matter of principle, and they won their appeal to the home authorities. Spears says:

> It was this band of stiff-necked religious independents that established the whale industry at New Bedford. One may suppose that the bull-dog persistence of the Quaker in his fights for principle was at the foundation of his success in the whale fishery. A friend of the sect might go further, perhaps, and say that while the standards of right and wrong of those days differed widely from the modern, yet even then the Friends chose whaling rather than the slave trade and coastwise smuggling. And since they could not in good conscience sail on either a naval ship or a privateer, their innate love of a good fight had to find vent somewhere, and the whale fishery proved the most exciting resource.

The New Bedford Quakers may have been actuated by high principles and "spiritual promptings" in very early days, but they were notoriously stubborn and unreasoning and apparently quite willing to cultivate a spirit of avarice that developed into the most grasping and unscrupulous organized system of exploitation of labor that the so-called Christian world has ever known. The New Bedford oil barons may have considered themselves good Quakers, but in their steady and maintained acts of injustice, deception, inhumanity, and cruelty they profaned their faith and crucified the religion they professed.

The whaling fleet of 1858, the all-time record tonnage year, included 329 ships out of New Bedford alone, 98 ships out of the various towns about Buzzard's Bay, and about thirty ships hailing from Long Island Sound ports. The golden era of whaling, said to have commenced about 1830, began in fact as the second decade of the nineteenth century neared its close, when American whalemen and American-commanded whalers rounded Cape Horn and found good "greasy grounds" in the Pacific, returning to North Atlantic ports well loaded with profitable oil and bone. In 1829 the whaling fleet of the United States consisted of 203 vessels, and the registered whaling vessels totaling 57,284 tons had about one-tenth the total tonnage (592,859 tons) of the vessels of the merchant fleet registered for foreign trade. Nantucket continued to send out whaling ships for many years after the twenties and thirties, but as whaling ships increased in size Nantucket whalemen sailed more and more in ships out of New Bedford and other whaling ports, which gradually grew quite numerous as is evidenced from the following published list of whaling towns with the number of whalers owned in 1839-1840. (All towns owning fewer than six whalers—and there were many of them—are omitted.)

Port	Number of Whalers	Port	Number of Whalers	Port	Number of Whalers
New Bedford, Mass	177	Rochester, Mass.	15	Hudson, N. Y.	8
Nantucket, Mass.	81	Salem, Mass.	14	Falmouth, Mass.	8
Fairhaven, Mass.	44	Stonington, Conn.	12	Mystic, Conn.	8
New London, Conn.	39	Newport, R. I.	11	Fall River, Mass.	7
Sag Harbor, N. Y.	31	Edgartown, Mass.	11	Poughkeepsie, N. Y.	6
Warren, R. I.	21	Westport, Mass.	9	Bristol, R. I.	6

The above accounts for 508 vessels, or about 92 per cent, of the national total stated as 554 ships, which, it was said, "brought home [during the year] 126,745 barrels of sperm oil, 227,018 barrels of whale oil, and 800 tons of bone." The sperm oil was worth at the wharf about a dollar a gallon; whale oil, about forty-eight cents per gallon; and whalebone, about twenty-five cents a pound.

The tonnage and types of vessels engaged in the whaling business at each of the four leading United States whaling ports at the end of the fourth decade of the nineteenth century are stated as follows:

Whaling Port	Number of Vessels			Total Tonnage	Whaling Port	Number of Vessels			Total Tonnage
	Ships and Barks	Brigs and Schooners	Total			Ships and Barks	Brigs and Schooners	Total	
New Bedford	169	8	177	56,118	Fairhaven	43	1	44	13,274
Nantucket	77	4	81	27,364	New London	30	9	39	11,447

Sag Harbor, Long Island, was close behind New London, Conn., for fourth place, its 31 whalers—all ships and barks—totaling 10,605 tons.

Fairhaven, which in the early forties was the third whaling port in the United States, was on the opposite side of New Bedford on its spacious harbor and really part of the same general community. Every little seaport on Buzzard's Bay was interested in whaling—Dartmouth, Mattapoisett, Westport, Marion, Wareham, Wood's Hole, and Rochester. Edgartown on Martha's Vineyard has a whaling history dating back to 1738, when Capt. Benjamin Chase, of Nantucket, tried to locate there, and he was followed by three other Nantucket adventurers who failed to make a success. Later, the luck turned, and for a century Edgartown was a moderately prosperous whaling port, sending out at one time as many as twenty whalers. (Whales were killed alongshore at Martha's Vineyard as early as 1702.) Provincetown, on Cape Cod, was a whaling port of note and for a brief period had as many as thirty whalers. The coast line south of the Cape down to Sag Harbor, Long Island, and New London, Conn., on the Thames became the highly concentrated area, housing most of America's whaling activities, with New Bedford, Mass., the metropolis. The population of New Bedford, which was about four thousand in 1820, trebled during the next twenty years and almost doubled again in the next two decades preceding the Civil War. New Bedford, with its oil refineries, coopers' shops, tool works, and "the hundred-and-one industries subsidiary to whaling," was a hive of activity. It became a builder of note of whaling craft and the fifth port for shipping in the United States, challenging Baltimore for fourth place.

Chas. M. Scammon, in THE AMERICAN WHALE FISHERY, says that in 1842, out of 882 vessels comprising the world's total whaling fleet, 652 (74 per cent) were American ships. This fleet of 652 American whalers is said to have been valued at "more than twenty million dollars and to have given employment to not less than seventy thousand persons, including those who kept occupied ashore."

New London is known to have been interested in whaling as early as 1647, and there is a record of the voyage of a deep-sea whaler, the sloop *Rising Sun* (Captain Squire), that sailed from the Thames on May 20, 1784. The *Commerce* (Captain Ramsom), the *Dauphin,* the *Leonidas,* and the *Lydia* are historic New London whalers, but the embargo, Non-intercourse Act, and the War of 1812 killed the Thames whaling industry, which was not renewed until 1819, when the ship *Carrier* (Captain Douglas), brig *Mary Ann* (Captain Ingles), and brig *Mary* (Captain Deshon) were "sent out after whales." These voyages were successful, and the New London whaling fleet gradually grew. In 1837 the community owned 36 whaling vessels, which, it was said, represented "an investment of more than a million dollars," and "almost every resident was connected wholly or in part, directly or indirectly, with the whaling industry." Moreover, in the forties, New London sea captains, "because of their navigation competence and records of successful voyages," were in demand in other whaling ports. In 1846, New London has been credited by historians as being "the second largest whaling port in the world." It had a fleet of 72 ships and barks, 1 brig, and 5 schooners, or 78 whalers all told, aggregating 26,200 tons and representing a capital of two million dollars. In 1845, 21 whalers arrived at New London with 53,987 barrels of oil; in 1846, only 16 vessels with 28,747 barrels; but in 1847 (the year of the biggest cargo) 37 vessels arrived loaded with 76,287 barrels of whale oil and 4,765 barrels of sperm—a total of 81,052 barrels of oil—besides large quantities of whalebone. The Gold Rush to California lured many of the twenty-five hundred whalemen and twenty-five whaling skippers from New London to the West Coast. By 1859 only nine whalers were owned in New London. The first steam whaler was sent out from New London, and the schooner *Charles Colgate,* which sailed from the Thames June 1884 and returned April 1885, was the last vessel of New London's fleet to make a whaling voyage, although the *Margaret,* owned and manned upriver at Norwich, made the last whaling voyage from the Thames in 1909.

In 1846 the American whaling fleet is said to have consisted of 735 vessels (678 ships and barks, 35 brigs, and 22 schooners). The aggregate tonnage was given as 233,189 tons (an average of 317 tons per vessel), and the total value of the ships as $21,075,000 (an average of $28,700 per vessel). These so-called "authoritative" figures are erroneous or, in any event, not comparative with other available statistics; for the total tonnage of the whale fisheries fleet as reported by the United States commissioner of navigation for 1846 was 187,420 tons, of which 186,980 tons were registered for deep-sea work and 440 tons "enrolled." The stated value is also far too high for floating tonnage alone and must include property, equipment, or money invested in the marine enterprise, although historians say that "the total investments requisite to conduct the whaling industry represented many millions more" (than the $21,075,000 herein quoted). Yet contemporary writers refer to whaling as the "most adventuresome and flourishing of American industries" at that time and state that, "in the exciting warfare against the whale, with voyages sometimes lasting four years, New England shipowners make tremendous profits and, besides contributing many of the most stirring chapters in the seafaring history of nations, give employment to forty thousand people in an industry in which they have invested forty millions of dollars."

In 1846 the largest vessel hunting the whales under the Stars and Stripes was the *Atlantic* of 699 tons hailing from New London, and the smallest was the schooner *Garland* of 49 tons, which was at work on the coasts of Desolation Island.

The "Whalemen's Shipping List" of London, referring in March 1849 to the dominance of American whalers, said, "The United States, whose flag was to be found on every sea, had 596 ships of 190,000 tons and manned by 18,000 seamen, while the number of English ships engaged in the whaling trade was only fourteen."

It has been said that the United States whaling fleet was "the celebrated catchall" of old sailing packets from the twenties to mid-nineteenth century. The first transatlantic packet line (Black Ball) made its initial sailings in 1818, and three of the original four packets were converted into whalers in 1819, 1820, and 1832, respectively. One of these vessels, the *Pacific I* of 384 tons, built in 1807 by A. & N. Brown, New York, has the longest service record of any packet whaler; she hailed from New Bedford and from 1819 to 1882, a period of sixty-three consecutive years, saw steady service as a whaler until at the age of seventy-five years she unfortunately was sunk in Panama Bay. The other original Black Ball transatlantic packets to become whalers were the *Courier* of 381 tons, built by S. Wright, New York, in 1817, which for forty-one years (1820-1861) sailed from Newport, R.I., and New Bedford, and the *James Monroe* of 424 tons, built by A. Brown, New York, in 1817, which was a successful whaler hailing from Hudson, N.Y., and Fairhaven, Mass., during the seventeen years 1832-1849, following which she participated in the California Gold Rush and was then sold in San Francisco. Among other old Black Ball packet liners that joined the whaling fleet were the fast *William Thompson* of 495 tons, built by S. Wright, New York, in 1821, which sailed out of New Bedford as a whaler for thirty-three years (1830-1863); the *Hibernia* of 551 tons, built by Brown & Bell, New York, in 1830, which made her first voyage as a whaler sailing from New London, Conn., in 1844, was later owned in New Bedford, and was still registered there in 1870; the *South America,* built by Brown & Bell in 1832, which, after eleven years in the packet service, operated out of Providence, R.I., and New Bedford for seventeen years (1843-1860) as a whaler except for one voyage made in the California Cape Horn run during the Gold Rush. For a while, this vessel claimed the honor for the biggest take on a single voyage, and she was bought by the government and sunk in 1861, during the Civil War, as a member of the northern Stone Fleet.

Four out of the five original vessels of the New York-Liverpool Red Star packet line (the second transatlantic line), which commenced its service in 1822, became whalers. The *Hercules* of 334 tons, built by J. Lozier, New York, in 1816, was a New Bedford whaler from 1827 to 1865, a period of thirty-eight years; the *Meteor* of 325 tons, built at Newburyport in 1819, was a whaler hailing from Hudson, N.Y., New York City, and Mystic, Conn., during the twenty-six-year period 1830-1856; the *Manhattan* of 390 tons, built by S. Wright, New York, in 1818, became a whaler after she left the packet service in 1826; and the *John Wells* of 366 tons, built by Brown & Bell, New York, in 1822, commenced whaling in 1834 and after thirty-seven years spent in the trade was one of the fleet of New Bedford whalers destroyed in the ice inside Bering Strait in the great catastrophe of 1871. Other early Liverpool Red Star packet liners to become whalers were the *John Jay* of 502 tons, built by Brown & Bell, New York, in 1827, which hailed from Sag Harbor from 1842-1849, when she was bought for the California trade, and the *Sheffield,* built by Smith & Dimon, New York, in 1831, which was sailing for whale out of Cold Spring, N.Y., for fifteen years (1845-1860).

Three out of the first five packets put in the Liverpool Blue Swallowtail Line service, which made its first passages in 1822, later became whalers. The *Cortes* of 381 tons, built at New Bedford in 1820, was engaged in whaling from 1827 to 1857, when she was burned by her crew at Cape Crusade in the Indian Ocean. The *Corinthian* of 401 tons, built by Smith & Dimon, New York, in 1822, whaled out of New Bedford for thirty-seven years (1831-1868) and was finally wrecked on Blossom Shoal in the North Pacific with a big cargo of oil aboard. The *Silas Richards* of 454 tons, built by Isaac Webb & Company, New York, in 1824, sailed from Sag Harbor and New Bedford as a whaler during the thirteen-year period 1841-1854.

The first packet line to run between a United States and a European continental port was the New York-Havre "Old Line," and both of its pioneer vessels went from the packet into the whaling service. These were (1) the *Stephania* of 315 tons, built by N. Brown, New York, in 1819, which hailed from Fairhaven, Mass., went whaling for forty years (1828-1868), and when forty-nine years old was sold to the British at Sydney and renamed *Onward;* and (2) the *Montano* of 365 tons, built by N. Brown, New York, in 1822, which sailed out of the whaling port of Nantucket for twenty years (1829-1849) and was sold in California during the height of the Gold Rush.

Three of the first five and five of the first ten packets to see service in the New York-London Black X Line, which started its transatlantic service in 1824, later were in the whaling trade. The earliest three, which left the line before 1833, were (1) *Acasta* of 330 tons, built in 1818, which was a whaler for twelve years (1828-1840); (2) *Hudson* of 368 tons, built in 1822, which saw service from four different American whaling ports during the thirty-year period 1833-1863, following which she was sold at Honolulu; (3) *Cambria* of 362 tons, built in 1826, which after thirty years' service as a New Bedford whaler, was "sold foreign" in 1862 when thirty-six years old. The first two packets that sailed in the New York-London Red Swallowtail Line, which inaugurated service in 1824, later became whalers. They were the *Brighton* of 354 tons, built in 1824, which was in the whaling trade for twenty-eight years (1831-1859) and the *York* of 433 tons, built in 1824, which sailed as a whaler out of Edgartown, Mass., during the years 1841-1847.

There were thirty-eight transatlantic and ten sizable deep-sea coastal packet ships—a total of forty-eight vessels—that, when their arduous driving days were over as liners operating on a fixed schedule of sailings, entered the whaling trade, where they generally gave splendid service after they had become uneconomic for the exacting and highly competitive packet lines. The packets were splendid sea boats, and until the transatlantic sailing packets became too big for the whaling trade, these vessels, when they were discarded by the "shuttle" lines, made ideal whalers. These one-time packets were built during the period 1807-1835 and entered the whaling service from 1819 to 1851 and were operating as whalers as late as: *Pacific I,* 1882 (sunk after sixty-three years of whaling); *Illinois,* 1876 (sunk by collision in Arctic after forty-three years of whaling); *John Wells,* 1871 (lost in arctic ice after thirty-seven years of whaling); *Corinthian,* 1868 (wrecked after thirty-seven years of whaling); *Stephania,* 1868 (sold after forty years of whaling). The latest sailing packets to enter the whaling service were:

Name of Packet	Whaling Service		Tonnage	Year Built	Age on Entering Whaling Service	Age on Discontinuing Whaling Service
	Began	Ended				
			Tons		Years	Years
EMERALD	1851	1859	518	1835	16	24
NATCHEZ	1851	1856	523	1831	20	25
GLADIATOR	1850	1854	649	1835	15	19
MONTREAL	1850	1862	542	1833	17	29
ERIE	1847	1862	451	1829	18	33

The *Gladiator* of the London Red Swallowtail Line was the largest packet to enter the whaling trade, and after four years she was withdrawn by her New Bedford owners as "too big." The *South America* (605 tons) of the Liverpool Black Ball Line began her career as a whaler in 1843 and was in the trade for seventeen years. The *Sheffield,* built in 1831, was of 578 tons and the third largest old transatlantic packet to serve as a whaler, she being operated in that trade for fifteen years (1845-1860). The *Hibernia,* another Black Ball liner, was considered a big whaler, being of 551 tons, when in 1844 she sailed from New London in search of whales. It is known that she operated for seventeen years in the trade (1844-1861), and in 1870 she was registered at New Bedford when forty years old. Other transatlantic packets of over 500 tons register that became whalers were: *Canada* of 525 tons, built in 1823 and in the whaling trade thirteen years (1843-1856); *Florida* of 522 tons, built in 1822 and a whaler for sixteen years (1845-1861); and the *John Jay* of 502 tons, built in 1827, which was a registered whaler for seven years (1842-1849) out of Sag Harbor and was hailing from San Francisco in 1870.

Of twenty-eight transatlantic sailing packets that became whalers and whose records have been obtained, the average registered tonnage measurement was 418 tons, the smallest of these vessels being:

Name of Packet	Tonnage	Year Built	Whaling Service Began	Whaling Service Ended	Whaling Service Years	Hailing Port
CADMUS	306	1818	1831	1842	11	Fairhaven, Mass.
STEPHANIA	315	1819	1828	1868	40	Fairhaven, Mass.
METEOR	325	1819	1830	1856	26	Hudson, N. Y., New York City, Mystic, Conn.
ACASTA	330	1818	1828	1840	12	Stonington, Conn.
HERCULES	334	1816	1827	1865	38	New Bedford, Mass.
BAYARD	339	1819	1835	1853	18	Greenport, N. Y.

A still smaller transatlantic packet, the *Desdemona* of 294 tons, built in 1823 at Middletown, Conn., and operated in the New York-Havre Second Line, became a whaler in 1833. Her length of service in the trade is unknown, but she was still registered at New Bedford in 1895 when seventy-two years old and sixty-two years after her first voyage from New York as a whaler.

It has been said that the smaller sailing packets lasted longer in the whaling service than did the larger packets, but this was primarily due to the fact that the smaller packets entered the whaling trade at an earlier date—in the twenties and thirties (the record holder for long service, the *Pacific I*, became a whaler in 1819); whereas the larger packets of from 502 to 649 tons did not become whalers until 1842-1851, and the trade depression and Civil War seriously affected the whaling business in the early 1860's. The whaling service seems to have operated actually to preserve the timbers and planking of the wood vessels steadily engaged therein, as the oil impregnated the structure and prevented rot and general deterioration. Many an old packet that, with the years, became too small and slow for the transatlantic "shuttle" or that showed signs of feeling the stress of long, hard driving over the most severe trade route in the world gave splendid satisfaction for many years in the more leisurely whaling business, and the nature of the cargo undoubtedly added to her life of usefulness.

The following is a record of old packets that operated as whalers for over a quarter of a century. All had been in the most exacting and difficult transatlantic "shuttle" service except the *Illinois*, which was built in New York in 1826 for the New Orleans Holmes Line, in which she operated seven years with success. Following this, she engaged in the whaling trade, hailing from Newburgh, N.Y., Sag Harbor, and New Bedford in succession, until she sank in the Arctic after a collision in 1876 when fifty years of age.

Name of Packet	Year Built	Tonnage	Dimensions in Feet and Inches: Length	Beam	Depth	Whaling Service: Began	Ended	Number of Years
PACIFIC I	1807	384	110	28	14	1819	1882	63
ILLINOIS	1826	413	117	28	14	1833	1876	43
COURIER	1817	381	103- 6	29	14- 6	1820	1861	41
STEPHANIA	1819	315	97	27- 3	13- 7	1828	1868	40
HERCULES	1816	334	103	27- 1	13- 6	1827	1865	38
CORINTHIAN	1822	401	112- 6	28- 3	14- 1	1831	1868	37
JOHN WELLS	1822	366	107	27- 9	13-10	1834	1871	37
WILLIAM THOMPSON	1821	495	120	30- 5	15- 2	1830	1863	33
HUDSON	1822	368	106	28	14	1833	1863	30
CAMBRIA	1826	362	108- 2	27- 6	13- 9	1832	1862	30
CORTES	1820	381	106- 6	28- 6	14- 3	1828	1857	29
BRIGHTON	1824	354	105- 4	27- 6	13- 4	1831	1859	28
METEOR	1819	325	106- 5	26- 1	13	1830	1856	26

The *Lafayette* of 341 tons, built in 1824 for the New York-Charleston Ship Line, after seventeen years of service as a coastal packet, became a whaler in 1842, and she was still registered at New Bedford in 1883 (i.e., forty-one years later) after having previously hailed from Warren, R.I., and Nantucket.

The whaling industry was not a success in Britain except during the years that the government supported it with bounties and warships and when the shipowners copied American methods and employed New England whalemen. Before the South Sea bubble burst in the 1720's due to unsound financing and fraud, "when sane men seemed suddenly to go mad," there had collapsed in England a much-advertised and promising big British whaling company named "The Company of Merchants of London trading in Greenland." This venture, with a subscribed capital of £40,000, went bankrupt within a decade, and every penny invested was lost because of bad management and equipment, a lack of competent direction and supervision, and in fact a combination of ignorance of modern whaling procedure and a lack of the necessary industry to make profits. In 1725 the South Sea Company, of Britain, which originally held a monopoly of British trade with South America and the Pacific islands, built a dozen large whalers. They completed their first voyages and returned to port with only twenty-five whales, which, it was said, "hardly paid the cost of equipment." In 1730 the company sent out twenty-two ships, and they took only twelve whales, resulting in "a loss from operations for the year of £9,000." After struggling for eight years to keep going, the South Sea Company gave up whaling, which was "a sad blow to British enterprise." In 1732 the British Government offered a bounty of 20 shillings a ton to every ship exceeding 200 tons engaged in the whaling trade, and as this bonus proved unattractive to shipowners, "the dying industry was still further helped" by increasing the bounty to 40 shillings a ton in 1749. By 1769 the British Government had spent £600,000 as an artificial stimulant to promote whaling, but the War of the Revolution, followed by the conditions existing in the United States during the post-war years, gave Britain a whaling business, much of it with New England seamen, that Britain alone could not procure. The industry prospered, so that in 1787 the bounty was reduced to 30 shillings and in 1795 to 20 shillings a ton. An English marine historian has said that "thanks to American tuition," British shipowners and seamen learned the art of whaling and the future lay between British and American ships until the end of sail. This is only partly true, for after the United States recovered from the effects of the War of 1812, America quickly rose to pre-eminence as a whaling power. The U.S. registered whaling tonnage of 12,016 tons in 1804 was down to 4,874 tons in 1817, but was 35,391 tons in 1820, 57,284 tons in 1829, 101,158 tons in 1833, 144,681 tons in 1836, 157,405 tons in 1841, and 190,696 tons in 1845.

Gradually, American whalers forced British whalers from the seas, and British historians tell us that in the mid-forties "the British whaling industry was moribund." Between 1838 and 1845, British statistics give the produce of the American whale fishery as averaging "37,459 tuns per year, but during 1845 it had risen to 43,064 tuns or the equivalent of £1,420,447"; whereas in that year (1845) "the entire British whaling did not amount to more than 5,564 tuns or £249,181"—or less than 13 per cent of the tonnage of the American whalers.

In 1849, Charles Enderby, of Britain's greatest family of whaling merchants, formed the Southern Whale Fishery Company to rehabilitate British whaling. It was a patriotic venture given much support and backed by propaganda, but it failed; its much-heralded Auckland, New Zealand, station, which was to be a very economic center of operations, was abandoned after twenty months' occupation and all the subscribed capital had been exhausted. The causes attributed to failure of the last large attempt of the British to re-establish themselves in the whaling business, which they admitted had been "almost entirely transferred to the United States of America," are of peculiar interest. Enderby charged mismanagement on three counts: (1) The whalers had not been built to carry the proper amount of oil. (2) The cost of the ships was £8,200 each, whereas they could have been built and equipped in America for £5,000 each. (3) The personnel was inexperienced and incompetent. The company had only four "headsmen," which were not enough for one vessel, not to mention eight, and in America there were plenty of these expert whalemen, who, if they had been employed, would "have made all the difference between success and failure." The Southern Whale Fishery Company admittedly went bankrupt because this British company did not use American ships, American methods, and American whalemen.

Whereas the American whaling fleet suffered grievously during the War of 1812, it was not the only sufferer, for many British whalers fell a prey to American privateers and naval vessels. Because American whalers were generally engaged in long voyages to whaling grounds in distant seas and the multitudinous British frigates and sloops scoured all trade routes and known fishing areas, it was but natural that many American vessels fell an easy prey to armed British craft before American whalers knew that war had been declared. Again, whaling craft were easy prizes for fast-sailing armed vessels, for whalers were full-modeled with relatively heavy but short masts and spars and no great spread of canvas; they were splendid sea boats but slow and rather clumsy sailers. The exploits of the U.S. 32-gun frigate *Essex* under Captain Porter in the South Pacific are worthy of mention. Sailing from the Delaware in October 1812 to strike a blow at British commerce far away, Porter decided to abandon the original plan of a cruise in the Indian Ocean, in company with the *Constitution* and the *Hornet,* and go to the Pacific. After a terrific passage around Cape Horn, he reached Valparaiso and learned that armed British ships had already played havoc with unsuspecting American whalers. Porter promptly put to sea again and set himself the task "to recapture the seized American whalers and sweep the South Pacific of all the whaling vessels of the British" and of the armed ships (privateers and letters of marque generally) that had taken American vessels as prizes. The *Essex* was successful and did a very thorough job of catching the armed British marauders, recovering captured American whalers, and fitting out seized British whaling craft to cruise under the Stars and Stripes. Farragut, who was on the *Essex* at that time as midshipman, said that some of the British whalers were captured without any great measure of resistance because the greater part of their crews were Yankees who had been pressed into the British service. The Pacific whale fishery of the British never recovered from the destruction wrought by Porter in the *Essex,* and the Stars and Stripes once more became dominant in the whaling trade in those waters.

The annual product of the American whaling fleet went over the six-million-dollar mark for the first time in 1835. During that year, the Yankee whalers brought home 9,131,818 gallons of oil (5,181,529 gallons of sperm and 3,950,289 gallons of whale), and in 1837 the total "take" of oil rose to 11,705,133 gallons of oil (but the quantity of sperm, with 5,319,138 gallons, had been passed by whale oil with 6,385,995 gallons). It is said: "In 1840 the whale oil 'take' reached record figures with 11,593,483 gallons. In 1845 the sperm-whale fishery reached its highest point in amount of product, the total import being 4,967,550 gallons. In 1853 the product of bone reached 5,652,300 pounds, the record amount." Figures previously stated, however, give the "take" of sperm oil in 1835 and 1837 as well over five million gallons for each of these years. In 1845 the sperm oil "take" sold for $4,371,500 (i.e., 88 cents per gallon). In 1855 the oil saved from the catch was down to 2,228,443 gallons, but it sold for $3,949,000, or $1.772 per gallon. The volume of oil obtained had decreased 55 per cent in ten years, but as the demand was great, the price had doubled during the period. The oil saved from the American whaling fleet's right whale record catch in 1840 realized only $3,826,000, as the price was down to 33 cents per gallon. The highest revenue from sales of oil and bone received by the whalers was $10,802,594 in 1854, but the realization from the catch for the five-year period 1853-1857 inclusive (during the clipper ship decade) totaled $51,063,660—an average of $10,212,732 per year. The average catch, Spears says, prior to the development of the petroleum industry, sold for "about half the estimated value of the fleet, or, say, near the actual value."

American whalers of early days and during the era that Nantucket was pre-eminent were short, beamy, and full-bowed "stubby" vessels that could not be other than slow and unwieldy, but they were undoubtedly big carriers and good sea boats. They were uncoppered, and in the tropics or warm latitudes barnacles and marine vegetable matter soon grew in profusion on their bottoms, so that it is surprising that the vessels at the end of a long voyage were in a physical condition even to crawl home. In later years, when whaling ships were larger and Pacific voyages were of three and sometimes four years' duration, the vessels were coppered and better built; they carried thirty to forty men, manned out four whaleboats (with spare boats for emergency), and called at rendezvous islands or ports to overhaul the hull, spars, rigging, and sails and to obtain fresh water, supplies and provisions, including fruits and fresh vegetables.

As before mentioned, whale oil was evidently an excellent preservative for ship timbers and planking, for the longevity of the whalers is phenomenal. Many ships were engaged in this service for fifty years and more, and when withdrawn the cause was seldom, if ever, decayed or rotten hulls. The long life of ships in the whaling trade is amazing. Whaling vessels were never raced from port to port with their spars, rigging, and hulls strained by driving; they merely jogged along at their ease in the quest of hunting grounds, and continual watchfulness was far more important than speed. Moreover, it was but natural that, after a few years' service, a whale ship's timbers, planking, decking, and ceiling would all become saturated or even impregnated with oil. Whalemen used to say that the oil soaked into the wood of their ships and "kept water and rot away." Whereas a "good life" of a merchant vessel in the last half of the eighteenth and first half of the nineteenth century was figured at "some twelve to fifteen years," whaling ships of that age were declared by New England shipowners and captains as "not having yet reached their prime."

The whaler *Maria,* a ship of 202 tons, built in 1782 at Pembroke, Mass., for William Rotch, made twenty-seven whaling voyages over a period of seventy years and in 1863, when eighty-one years old, was sold to a Chilean merchant "in good, serviceable condition" and continued to be operated for many years. In 1872, when ninety years old, she was still in service. Among other whalers that reached a phenomenal, venerable age were the *Rousseau,* which busily sailed the seas for ninety-seven years, and the *Triton,* which operated for seventy-nine years. A famous and most profitable whaling ship was the *James Arnold,* built in New Bedford, Mass., in 1852. Between May 1853 and October 1894 (a period of about forty-one and a half years), this vessel made twelve long whaling voyages, some of them lasting over four years, and she brought home to her owners oil and whalebone that sold for $876,425. In 1894, when the price of oil was down to 56 cents a gallon, the "old *Arnold*" was sold for about $5,000 at New Bedford, fitted out and sailed for Chile, where she commenced a second career. E. Keble Chatterton, the British marine writer, said of the "*Arnold*" in 1925:

> Ever since she has been under the Chilean flag [thirty-one years to that date] she has made whaling voyages each year, with a brief interlude as a merchantman, and is still engaged catching whales in the old-fashioned manner with harpoon and lance. Her catch has averaged twelve hundred barrels and in twenty-six whaling years sailing out of Valparaiso she has made for her new owners about £70,000. Thus, up to date [1925], the *James Arnold* has produced the magnificent sum of £245,285 [about $1,220,000] from whaling alone. . . . As long as they [American captains] lasted the *James Arnold* had a New Bedford captain even after passing under the Chilean flag.

The *James Arnold,* which was seventy-three years old in 1925 and "still going strong," being proclaimed "tight and staunch," was constructed of oak and copper-fastened. She was ship-rigged, of 345 tons register (115 ft. long, 27.6 ft. beam, and 17.6 ft. deep), and was built by Jethro and Zachariah Hillman. The old whaling bark *Charles W. Morgan,* built in 1841, also by the Hillman brothers of New Bedford, is still afloat and was lately (1941), when a century old, towed to Mystic, Conn., having been acquired by the historical society of that old shipbuilding town for preservation as an historical exhibit and a whaling museum. The *Charles W. Morgan* was last used as a whaler in 1906, when sixty-five years of age.

E. Keble Chatterton, in WHALERS AND WHALING, tells us of the *Truelove,* an American vessel that commenced her career as a British whaler when 20 years old, made her last voyage as a whaler when 104, was at Philadelphia when 109, and was over 110 years old before she was broken up in England. This would seem to be the all-time record for longevity as far as useful work at sea is concerned. We are told that the *Truelove,* built at Philadelphia in 1764, made "the very last whaling voyage from the English port of Hull, Yorkshire" (on the River Humber), and Chatterton continues:

This vessel was one of the most remarkable craft that ever sailed the seas, and it would be difficult to find many ships in all maritime history which so ably justified the builders. Seventy-two was the number of whaling voyages which the *Truelove* made and 500 were the whales which she captured, and besides all this activity she put in a good deal of time in such voyages as the Oporto wine trade and even as a "Letter of Marque." During the American War of Independence she was captured by the British and that was how she came to be owned in Hull, and in 1784 began her career from the Humber as a whaler. It was in 1806 that at the age of forty-two she made her first trip to the Davis Straits and went off there again in 1831. Her last voyage as a whaler was in 1868, but five years later she visited Philadelphia where she was given a hearty welcome and returned across the Atlantic to be broken up.

The United States Bureau of Navigation gives the tonnage of the registered whaling fleet as 190,696 tons in 1845; this was the first year that it reached the 190,000-ton mark (having jumped from 168,294 tons in 1844 and 152,375 tons in 1843). The heyday of whaling—and the tonnage peak of the century and of all time—was in 1858, when the registered vessels engaged in whale fisheries totaled 198,594 tons; but the tonnage engaged in this division of marine activity exceeded 190,000 tons in the seven years 1845, 1847, 1848, 1852, 1853, 1857, and 1858, respectively, and during the fifteen-year period 1845-1859 inclusive, the average annual documented whaling tonnage was 186,437 tons. The drilling of "Drake's Folly" at Titusville in 1859 brought in petroleum and the practical use of mineral oil and gas as illuminants, and this fact coupled with the Civil War ruined the whale fisheries for all time. Not only mineral oil and illuminating gas affected the whale oil market but also the development of the cottonseed oil business. It has been said that after the Civil War, the demand for and prices realized from the sale of whalebone rather than from whale oil (either sperm or ordinary whale oil) kept the whaling industry alive. The marine tonnage engaged in the business was 117,714 tons in 1862, a drop of 80,884 tons in four years, and after the Civil War it ranged from 78,486 tons in 1868 to 39,116 tons in 1876, showing a steady decline each year.

The record high-tonnage year for the deep-sea fishing fleet (cod, mackerel, etc.) was 1862, and the tonnage then enrolled was 193,459 tons—about the same as the record high of the whaling fleet. Including all the small licensed vessels (under 20 tons), the total tonnage engaged in cod and mackerel, or deep-sea, fisheries in the record year of 1862 was 204,197 tons, and this was the only year that the aggregate tonnage in this one of the two prime divisions of the fisheries exceeded 200,000 tons and the only year that its enrolled vessels went over the 190,000-ton mark. In 1865 the total cod and mackerel fisheries tonnage was down to 112,677 tons (of which 100,436 tons were enrolled and sizable vessels), and in 1867 it had dropped to 76,065 tons (68,207 tons enrolled). In 1880 it was 77,538 tons; in 1890, 68,367 tons; and in 1900, 51,629 tons (of which 545 vessels totaling 43,694 tons—an average of 80 tons—were enrolled and 890 boats totaling 7,935 tons were licensed and under 20 tons).

The earliest years for which we have official records of the tonnage of the United States whale fisheries commence with the statistics for 1794 as later reported by the commissioner of navigation. The tonnage of the whaling fleet for each of the six years 1794-1799 is stated herewith, and all tonnage figures are given under the category of "enrolled" vessels except in 1799, when 5,055 tons are classified as "registered" and 592 tons as "enrolled."

Year	Tonnage	Year	Tonnage	Year	Tonnage
1794	4,129	1796	2,364	1798	763
1795	3,163	1797	1,104	1799	5,647

The tonnage of the U.S. fishing fleet was reported as 9,062 tons in 1789, 28,348 tons in 1790, 32,542 tons in 1791, and 32,062 tons in 1792. (Other records give the tonnage of 1789 as 19,185 tons.) During this period, no whale fisheries tonnage was given, and all fisheries were apparently included in one category and whale fisheries not separated from cod and mackerel fisheries as far as tonnage records are concerned until 1794. Joseph Nourse, register of the treasury, on February 1, 1812, stated: "As there were not any accounts kept at the treasury of the district tonnage of the United States prior to the operation of the acts of 31st December 1792 and 18th February 1793 the statement in which is exhibited the tonnage for the years 1789, 1790, 1791 and 1792 has been formed from the accounts of tonnage on which duties were collected for those years." The following is the official record of the tonnage of the sea-going vessels of the American (cod, mackerel, etc.) fishing fleet for each year 1793-1800 inclusive:

Year	Enrolled Vessels	Licensed Vessels under 20 Tons	Total	Year	Enrolled Vessels	Licensed Vessels under 20 Tons	Total
1793	28,974	1,985	30,959	1797	33,406	7,222	40,628
1794	17,498	5,550	23,048	1798	35,477	7,269	42,746
1795	24,887	6,046	30,933	1799	23,933	6,046	29,979
1796	28,509	6,453	34,962	1800	22,307	7,120	29,427

Following the adoption of the Constitution in 1789, the tonnage of vessels engaged in deep-sea fisheries (popularly known as the New England "codfish fleet") increased, and although the fluctuation in tonnage used per year is significant and the prosperity of the fishermen varied greatly, the trend of increase is conspicuous up to the time of the Jefferson embargo, the tonnage reaching 60,690 tons enrolled and 70,306 tons total in 1807 and dropping abruptly during the embargo and war years. (It was 26,110 tons enrolled and 34,487 tons total in 1809 and only 8,863 tons enrolled and 17,855 tons total in 1814.) After peace with Britain was declared, both the codfish and whaling fleets commenced to grow steadily. They reached the peak in 1852 and practically held their high tonnage until the Civil War, from which period they steadily declined until, at the end of the nineteenth century, the codfish sailing fleet was only 25 per cent, the whaling fleet only 5 per cent, and both fleets combined only 14½ per cent of the 1852 tonnage. (The record tonnage year for whalers was 1858; for general deep-sea—cod, mackerel, etc.—fisheries, 1862; but for all deep-sea fishing tonnage it was 1852.) The following table of American fisheries tonnage, with whaling, general deep-sea (cod, mackerel, etc.), and total, gives a year-by-year record of American deep-sea whaling and enrolled deep-sea fishery tonnage (excluding licensed vessels under 20 tons) for the years 1800-1901 inclusive as set forth in United States Government reports. (The tonnage of "licensed vessels under 20 tons" in the cod and mackerel fisheries was 8,102 tons in 1801, rose to 11,214 tons in 1823, was down to 3,515 tons in 1830, reached an all-time record high of 13,342 tons in 1879, and was 8,370 tons in 1901.)

Year	Fisheries Tonnage			Year	Fisheries Tonnage		
	Whaling	General Deep-sea	Total		Whaling	General Deep-sea	Total
1800	3,466	22,307	25,773	1813	2,942	11,255	14,197
1801	3,085	31,280	34,365	1814	562	8,863	9,425
1802	3,201	32,988	36,189	1815	1,230	26,510	27,740
1803	12,390	43,416	55,806	1816	1,168	37,879	39,047
1804	12,334	43,088	55,422	1817	5,224	53,990	59,214
1805	6,015	48,479	54,494	1818	16,750	58,552	75,302
1806	10,507	50,353	60,860	1819	32,386	65,045	97,431
1807	9,051	60,690	69,741	1820	36,445	60,843	97,288
1808	4,526	43,598	48,124	1821	27,995	51,352	79,347
1809	3,777	26,110	29,887	1822	48,583	58,405	106,988
1810	3,589	26,251	29,840	1823	40,503	67,041	107,544
1811	5,299	34,361	39,660	1824	33,346	68,239	101,585
1812	2,930	21,822	24,752	1825	35,379	70,626	106,005

Year	Fisheries Tonnage: Whaling	Fisheries Tonnage: General Deep-sea	Fisheries Tonnage: Total
1826	41,984	63,535	105,519
1827	45,992	73,709	119,701
1828	54,801	74,765	129,566
1829	57,284	97,889	155,173
1830	39,705	94,014	133,719
1831	82,797	103,450	186,247
1832	73,246	99,153	172,399
1833	101,636	107,295	208,931
1834	108,424	113,555	221,979
1835	97,649	136,817	234,466
1836	146,254	104,838	251,092
1837	129,137	121,866	251,003
1838	124,860	120,623	245,483
1839	132,285	101,151	233,436
1840	136,927	96,196	233,123
1841	157,405	71,877	229,282
1842	151,990	66,039	218,029
1843	152,517	66,677	219,194
1844	168,614	94,350	262,964
1845	190,903	91,240	282,143
1846	187,420	108,979	296,399
1847	193,859	101,629	295,488
1848	192,613	126,210	318,823
1849	180,186	116,824	297,010
1850	146,017	143,758	289,775
1851	181,644	138,015	319,659
1852	193,798	175,205	369,003
1853	193,203	159,840	353,043
1854	181,901	137,235	319,136
1855	186,848	124,553	311,401
1856	189,461	125,703	315,164
1857	195,842	132,901	328,743
1858	198,594	140,490	339,084
1859	185,728	147,647	333,375
1860	166,841	153,619	320,460
1861	145,734	182,106	327,840
1862	117,714	193,459	311,173
1863	99,228	157,579	256,807
1864	95,145	148,244	243,389
1865	84,233	100,436	184,669
1866	105,170	89,386	194,556
1867	52,384	68,207	120,591
1868	78,486	74,763	153,249
1869	70,202	55,165	125,367
1870	67,954	82,612	150,566
1871	61,490	82,902	144,392
1872	51,608	87,403	139,011
1873	44,755	99,532	144,287
1874	39,108	68,490	107,598
1875	38,229	68,703	106,932
1876	39,116	77,314	116,430
1877	40,593	79,678	120,271
1878	39,700	74,560	114,260
1879	40,028	66,543	106,571
1880	38,408	64,935	103,343
1881	38,551	66,365	104,916
1882	32,802	67,015	99,817
1883	32,414	84,322	116,736
1884	27,249	72,609	99,858
1885	25,184	73,975	99,159
1886	23,138	73,445	96,583
1887	26,151	73,237	99,388
1888	24,482	69,146	93,628
1889	21,976	67,669	89,645
1890	18,633	61,507	80,140
1891	17,231	61,912	79,143
1892	17,052	61,819	78,871
1893	16,604	62,737	79,341
1894	16,482	63,493	79,975
1895	15,839	60,838	76,677
1896	15,121	60,107	75,228
1897	12,714	58,103	70,817
1898	11,496	43,996	55,492
1899	11,017	42,901	53,918
1900	9,899	43,694	53,593
1901	9,534	44,074	53,608

The Lay System—Fostering a Spirit of Enterprise

Nantucket was responsible for making American whaling one of the "oldest and most thoroughgoing of co-operative industries." The lay, or share, system for compensating officers and men was in effect at Nantucket from early days, and the general scheme was used effectively in obtaining crews for privateers, with the pay of the men for services being a stated and predetermined fraction of the prize money. Papers of the Massachusetts Historical Society illustrate the co-operative method in vogue during the first decade of the nineteenth century by the preserved original accounts of a whaling voyage made in 1807 by the ship *Lion* of Nantucket. The oil from captured whales realized $37,661.00. After certain charges were disposed of and each of the officers and crew had been paid the fractional lay mutually agreed upon before the commencement of the voyage, the balance of the proceeds, recorded as $24,252.74, went to the owners of the vessel, who had "provided, equipped, provisioned and risked the ship." The debits and credits for the voyage are set forth as follows:

Dr.

To am't charge		$ 362.75	Share of boy	1/120	$ 310.82
Sundry acc'ts in clearing ship		43.38	Share of 5 blacks, each	1/ 80	2,331.14
Share of captain	1/18	2,072.13	Share of 1 black on 400 bbls	1/ 80	108.36
Share of mate	1/27	1,381.41	Share of 1 black	1/ 90	414.42
Share of second mate	1/37	1,008.06	Share of 1 black	1/ 85	438.80
Share of 2 ends men, each	1/48	1,554.10	Share of 1 black on all but 400 bbls.	1/ 90	318.10
Share of 5 ends men, each	1/75	2,486.55	Owners' share		24,252.74
Share of cooper	1/60	621.64	Total		$37,661.02

Cr.

By 37,358 gals. body oil [average 52.9 cents per gal.]	$19,766.14
By 16,868 gals. head matter [average $1.06 per gal.]	17,849.73
By 150 gals. black oil [average 30.1 cents per gal.]	45.15
Total	$37,661.02

The owners' share was 64.40 per cent of the net "take," the captain's lay was 5.50 per cent, the first mate's 3⅔, and the second mate's 2⅔ per cent; the two leading ends men (who were petty officers) each received 2.06 per cent, the cooper 1.65 per cent, the other five white able seamen (boat-steerers, harpooners, or ends men) each 1.32 per cent, the boy 0.83 per cent, and each of eight Negroes from 1.10 to 1.24 per cent. Much has been written about drawing the color line in the Nantucket lay system, but on the *Lion* five experienced white seamen classed as ends men each obtained $497.31 for the voyage, and five Negroes—husky but most probably less competent—drew $466.23 each, which looks like a reasonable and not a bigoted emotional and unjust differentiation.

Generally, "the owners" constituted a variety of individuals and interests. There were those who had furnished money, others who owned a share in the vessel to cover services and materials. The builders were likely to be part owners with the rigger, sparmaker, sailmaker, blacksmith, blockmaker, ropemaker, etc., who owned a fraction of the ship as part payment for their bills of work. Equipment and even certain supplies were sometimes obtained on a limited time percentage basis, and quite often the parties publicly named as owners actually owned a very small part of the equity and total investment in a ship and received only a small percentage of the reported profits of a certain voyage. The practice of selling small fractions of a ship to parties with money to invest and of allotting fractions to builders and contractors in lieu of cash for services and materials originated early in the history of American shipbuilding and continued to the end of American sail—both wood and steel.

In 1804 the lay on a whaler carrying three boats and twenty-one men is stated as three-fifths of the catch to the owners (who furnished the vessel and her equipment and supplies and completely financed the expedition) and one-eighteenth to the master, and the balance, which was about one-third of the total "net take," was divided among the crew, each member obtaining a fraction that was clearly set forth and agreed to when he signed up for the voyage. It is said that in the first years of the nineteenth century, the "worker's share" of the profits "was far more generous than in the so-called golden age of whaling a generation later." Chatterton, in WHALERS AND WHALING, says that in 1832 "whaler ships of 350 tons from New Bedford, Nantucket and New London were working to the following 'lay' or scale of remuneration: The captain received one-fifteenth, chief mate one-twenty-fifth, second mate one-forty-fifth, third mate one-fiftieth, boat-steerers one-hundredth each, ordinary seamen one hundred and seventy-fifth each in the South New Zealand whaling." In WHALING MASTERS (published at U. S. Government expense in 1938), we read that the average shares, or lays, paid American whalemen were: captain 1/8 to 1/15, first mate about 1/18, second mate 1/28, third mate 1/36, fourth mate 1/60, cooper 1/60, boat-steerers 1/80, steward 1/90, cook 1/110, seamen 1/150, green hands 1/175.

The spirit of enterprise was undoubtedly developed by paying the crews of whalers in accordance with the lay system as it was operated in early days and before the era of exploitation. John R. Spears, in THE STORY OF THE AMERICAN MERCHANT MARINE, says:

> Every man received a share of the oil instead of set wages. The system sharpened the eyes of the lookout, gave strength to the arm of the man at the oars, and cooled the nerves of the man who thrust the lance under the shoulder-blade of the whale. When Capt. James Shields reached the Brazil grounds too late in the season, the system of "no oil, no pay" drove him around Cape Horn in search of a new ground. When, in 1818, Capt. George W. Gardner found the grounds on the west coast of South America barren, he boldly headed across the unexplored Pacific in search of others—with success. In 1819 a merchantman from China stopped at the Sandwich Islands and told a number of whalemen there that he had seen great schools of whales on the coast of Japan. Thereupon the whalemen raced away for the new grounds.

The lay system, or co-operative plan, in effect on whalers was for many decades very successful and popular with both officers and seamen, although there are known instances where some sailors received a mere pittance for a year's work. Seldom would a whaler—unless severely injured or her operating staff impaired by disastrous accidents—return to the home port without her holds well filled with oil, even though she roamed the Seven Seas for years. The gamble of profit appealed to whalemen as it had to crews of privateers, and whalers and privateers were alike in that they hunted and combed the seas for prizes.

As originally planned and applied, the lay, or share, system was so fair, just, and stimulating of enterprise that it was declared to be "the best co-operation of capital, capitalizer, and laborer ever accomplished." It is regrettable that the old lay system, which gave each Nantucket whaleman a fractional share of the proceeds of the voyage, degenerated in equity, honesty of purpose, and application as the years advanced and, as practiced at New Bedford, became so corrupted that in the second quarter of the nineteenth century the original system of partnership—with a fair share in the profits for each—had been perverted into what was for many of the men aboard a whaler "a foul system of exploitation." The whale shipowners of New Bedford (and other ports to a less noticeable degree) became conspicuous for "devilish extortion" and the whaling skippers notorious for cruelty. With a market that steadily showed advancing prices, the "take" on a voyage came to be computed on oil prices arbitrarily fixed by the owner, in advance, at a rate well below the actual realization. The lay, or proportion, of an artificial or "doctored" low statement of the profits granted an able seaman was gradually reduced from 1/50 or 1/60 to 1/75 and later to 1/95 or 1/100, and the lay of an able-bodied green hand was made as low as 1/150 or 1/200 by the false statements made by whaling hiring agents, who worked on the lure of the sea and of possible big and profitable quick catches to farm boys, unemployed immigrants, mill hands, etc. Among the many stories told of the old-time whaling hiring agents is the following classic: In reply to the protest of a "raw rustic" that a lay of 1/175 was not enough for a young man of his strength and willingness, the agent said, "Well maybe so, now what would you say if I made it a 1/275th," and the unschooled farm hand, we are told, accepted the more "liberal" offer and signed up. After a whaler had shipped its required complement of able and experienced officers, boat-steerers, harpooners, or ends men, coopers, etc., it did not want experienced seamen for its crew, for such would not have stood for the practices of the owners and skipper, so the shipping agents were ordered to get rugged young men who were ignorant of ships and could be quickly broken in at sea in a rough and cruel way. It is said that during the first months of a whaling voyage the green hands "were 'learned' the ropes with a ropes end" and taught by hard knocks to row the whaleboats.

The following is an account of the voyage of the whaling ship *Benjamin Tucker* of New Bedford, made between 1839 and 1843, with the debits and credits set forth for each of the men aboard who completed the voyage:

	Share of Proceeds of Voyage			
	Fractional Lay	Share in Dollars	Charged for Outfit	Captain's Bill (slop chest and cash advances)
Captain	1/ 16	$2,358.75	—	—
First mate	1/ 24	1,572.50	—	—
Second mate	1/ 43	1,023.95	—	—
Third mate	1/ 65	677.38	—	—
Fourth mate	1/ 78	564.48	—	—
Boat-steerer	1/ 87	506.09	—	$ 38.98
Boat-steerer	1/ 95	463.47	$ 74.36	64.12
Boat-steerer	1/ 95	463.47	—	82.03
Boat-steerer	1/ 95	463.47	—	90.68
Cook	1/150	293.83	90.00	123.48
Seaman	1/160	275.12	107.00	76.66
Seaman	1/170	259.00	21.00	66.02
Seaman	1/170	259.00	36.40	52.12
Landsman	1/190	231.73	107.57	63.46
Landsman	1/190	231.73	100.70	76.10

The owners charged the men 25 per cent interest on the outfit supplied, and all items that they acquired from the captain's "slop chest," or "skipper's store," during the voyage, such as replacing worn-out clothes or replenishing their tobacco supply, carried a profit of from some 54 to 150 per cent (generally about 70 per cent) to the captain. The New Bedford idea seems to have been to agree to pay the men the lowest possible percentage share of the "take" of a whaling voyage, then to falsify the reported profits by manipulating accounts, and by various devious means to rob them further of some of the money begrudgingly admitted as due for their services. Morison says:

On many ships ten per cent was deducted for "leakage" and three per cent for insurance; yet if the ship and cargo were lost, all the insurance money went to the owners. Certain owners charged against each lay the value of the casks and a commission for selling the oil in spite of judicial decisions against the legality of such practice. Each whaleman was charged eight to ten dollars for fitting out, and the same for discharging the vessel; and a dollar and a half for his share of the medicine chest. For his "expenses" and "outfit" some "land-shark" outfitter at New Bedford was given a good round sum, on which the owners charged the men twenty-five per cent interest; and the "slop-chest" [of the captain on board] absorbed a good part of the rest.

The record of the debits and credits for the 1839-1843 whaling voyage of the *Benjamin Tucker* of New Bedford shows that the men had charged against them fees for fitting out, discharging cargo, and medicine chest, but apparently no insurance. As was usual, some of the original crew could not "stomach" the conditions encountered and did not complete the voyage, while the two landsmen and one of the seamen who "stuck it out" left the ship, after about a four-year voyage, owing money to the owners. It also appears that "after another voyage on the same ship, one green hand was paid off with $1.31 and another with $16."

Hunt's MERCHANTS' MAGAZINE (an organ of American merchant-ship owners), in September 1849, published an article written by United States Consul F. M. Ringold, from Paita, Philippine Islands, which, referring to the conditions on American whalers, said:

All hands are huddled on board without a chance of looking at their chests, for the contents of which they have given a receipt which is to be deducted from their share or "lay." Each sailor is charged upon the owner's books with an average outfit of seventy dollars. By many owners interest is charged on this outfit from the day of sailing until the return of the vessel. When the sailor opens his chest he feels as we may suppose the man did who "fell among thieves." He finds that the contents of the chest are insufficient for his comfort, and that they are not worth twenty-five dollars in all. To compensate for this want of comfortable clothing, he may procure supplies from the owner's slop chest, which has been placed on board, by paying a handsome profit.

The lay or share of a green hand is from a one hundred and eighteenth to a two hundredth. . . . But from this [stated or admitted profit from the voyage], ten per cent is to be deducted for leakage, and frequently three per cent for insurance, although, if the vessel is lost, and is fully covered by insurance, the owners recover all and the men get nothing, because the charge is not made upon the men until the vessel gets home. The owner plays an open and shut game. If the vessel gets home the sailor pays the insurance, but if she is lost the owner pays the insurance and pockets the profits.

The following is the result of one seaman's voyage for four years:

Item	$	Item	$
Sailor's share reduced to money	262.25	Cash advanced during voyage	30.00
Less fitting, shipping and medicine chests	10.00	Interest on same one per cent per month	7.20
Ten per cent discount on $262.25	26.22	Clothing which he was compelled to draw owing to his bad outfit	40.00
Three per cent insurance on $262.25	7.86	To be deducted from sailor's share	208.03
Money originally advanced	70.00	Amount to be received at the end of the voyage	54.17
Interest on same	16.80		

This compensation figures about $13.54 per year and $1.13 per month. U.S. Consul Ringold continues: "From 3,000 to 4,000 young men yearly sail from the United States, and, becoming disgusted, desert, and either from shame or moral corruption never return. The cause is small pay and bad treatment." Natives of the islands were signed on in the Pacific to take the place of the deserters for a ridiculously low wage or "microscopic lay," and the ship generally benefited in an economic sense by deserters. Francis Wayland, in a lecture delivered before the New Bedford Port Society on November 20, 1842, told his whaling shipowner audience almost identically the same facts as were later written by U.S. Consul Ringold. The men, Wayland declared, were "grossly imposed upon in the matter of outfit," and a sailor "at the close of his long service finds himself as poor as at the beginning."

There seems to have been an organized conspiracy in effect on New Bedford whalers to tie the men to the ships by means of debt and fear. On some vessels, the only way for an ordinary member of the crew to obtain money to spend in a foreign port was for him to buy "slops" at inflated prices from the captain's store and sell them cheap for cash ashore; therefore, it is no wonder that so many whaling ships returned to New Bedford after a voyage lasting several years "with every green hand's 'lay' eaten up by his debts to the ship." It has been said that during the golden age of whaling—from, say, about 1830 to the Civil War—the ships making the money for the "oil barons," with New Bedford the metropolis, seldom, if ever, returned to the home port manned by the same crew aboard with which they had sailed. Until a whaler had taken a substantial amount of oil aboard, the captain was often under orders from the owners not to make port. Charles W. Morgan instructed the skipper of his whaling bark *President* on April 23, 1830, "We are in advance to all your crew from 70 to 80 dollars it will therefore be necessary to obtain some oil before going into port, as they may be likely to desert—in which case we are losers." Many American seamen left whaling ships in the Pacific and sacrificed their lay, as they could not put up any longer with life on "greasy floating hells," and skippers were at times accused of encouraging men who kept out of debt to the ship to desert, so that their lays might be forfeited. Morison, writing of New Bedford whalers, says: "The most impressive fact in the ships' disbursement accounts I have examined is the large number of men who deserted at outlandish ports, although money was coming to them. If a deserter was apprehended, the local police fees were charged up to him, with 25 per cent interest to boot."

Chatterton, in "Aboard an American Whaler" (WHALERS AND WHALING), says that "out of a crew of say thirty-seven, twenty-four would be ordinary seamen," and only hope, with expectation of profits in the future because of the lay system of compensation, kept the men in these ships. Some "ordinary seamen" received one-two hundredth share of the profits, "but a greenhorn might be allotted only one-two hundred and seventy-fifth share of the clear net profits. This was just better than nothing and referred to as 'a long lay.' But from that would have to be deducted the charge for the assortment of fairly good but high-priced clothes which the captain issued from the ship's slop chest; in addition to the tobacco, matches and soap, also bought from the ship at extortionate terms." An old American whaling chantey contains the following significant lines:

> They send you to New Bedford, that famous whaling port
> And give you to some land-sharks to board and fit you out.

In WHALING MASTERS (recording the research of members of the Federal Writers Project of the W.P.A. and published by the Old Dartmouth Historical Society of New Bedford, Mass.), we read:

> Seamen received an advance against their share at the start of the voyage, in the form of an outfit of sea-clothes for which a charge of $70 was usual. The actual value of the outfit seldom exceeded $25, but the men were charged interest on this $70 plus the $10 commission paid the land "shark," an agent who beguiled them into signing up for the voyage, plus charges for extra clothes at top prices. This usually ran a seaman's initial indebtedness up to something like $125. The sum of $225 was an average lay for an ordinary seaman after a successful two-year voyage. Deducting the $125 indebtedness from their proceeds, this left the "greenie" with $100 for his two years' toil if the voyage was a success. If it was not, he found himself in debt. And the chances were that within 48 hours after he landed, whatever money he had would be squandered in the grog shops and brothels to which he would be enticed by a "shark."

The above statement is erroneous in detail, but in final outcome, nevertheless, close to the truth. The original average indebtedness of a seaman or greenhorn to the ship is overstated; however, the inevitable charges of the captain's slop chest throughout the voyage are ignored, and at times such charges exceeded those of the original outfitting. Moreover, whaling, at best, was a gamble, and unless the ship made money on a voyage, there was none available to be spread among the crew, the officers, or the owners. Whaling voyages were at times financially disastrous to the owners, and this fact undoubtedly originally caused "protective tactics" on the part of both owners and skippers that led to unscrupulousness and exploitation of the crew. Most whalers occasionally had what was termed a "saving voyage," in which the vessel cleared expenses, but made little, if any, profit. But the business continued and thrived, and officers and crew were shipped for voyages on the lay system of compensation because of the occasional and at times frequent lucky or "greasy" voyages, when the profits made were large and likely to be tremendous.

Records have been preserved showing the results of a "greasy voyage" of the whaling ship *Charles P. Phelps* of Stonington, Conn. The ship sailed (and it was her maiden voyage) on August 29, 1842, and returned on March 30, 1844, after an absence of nineteen months, with the following oil and bone aboard, which was valued by Charles P. Williams, to whom it was consigned, at the prices here set forth:

2,600 barrels of whale oil at $11 per barrel	$28,600
140 barrels of sperm oil at $29 per barrel	4,060
2,600 pounds of whale bone at 33½ cents per lb.	8,710
Total value	$41,370

On this voyage, thirty-four whales were taken, thirty-three of which were captured by boats, and one was found dead. Of these whales, twenty-nine were right and five sperm whales. The ship's boats lost six other whales to which they were fastened, but the lines broke. Ten whales, after being killed, sank and were not recovered; from twelve the irons "drawed," and the number of irons lost was thirty-four. It is interesting to note that of forty-nine whales harpooned by the boats, only thirty-three, or two-thirds, were actually captured and the oil and bone taken therefrom to contribute to the ship's "take."

Documents show that $41,410.10 was disbursed to owners and crew, the owners taking $28,120.33, or about 68 per cent of the total, and the crew $13,289.77, or 32 per cent. Capt.

Palmer Hall received $2,544.59 for his services, which was 6.2 per cent of the total profit distributed and 19.1 per cent of the total amount paid the officers and crew. The other members of the ship's complement who each received a sum in excess of $300 for nineteen months' work were:

Name	Amount	Name	Amount	Name	Amount
First Mate Gilbert Pendleton, Jr.	$1,624.56	A. Verhoff	$625.08	S. Fletcher	$449.31
Second Mate Thomas Burtch, Jr.	942.29	Amos P. Wendleton	453.88	C. W. Austin	441.33
Third Mate John C. Nichols	661.36	Silas Fitch	453.88	Gurdon Hall	371.16

The next highest amounts paid to crew members were: William Greenman, $297.64; E. P. Berry, $255.22; and William Cole, $234.05. A greenhorn, Harry Baker, received $125.12; the cabin boy, $56.23. No man except the captain actually received in cash the amount set opposite his name, for all of the men were in debt to the skipper's slop chest for tobacco, supplies, etc., during the voyage, and most of them had had some money and an outfit advanced to and charged against their lay on boarding the ship. On this voyage, 580 days were occupied at sea, which, eliminating the time taken in getting the ship ready and discharging, etc., gave the captain (excluding the profit from his slop chest) a pay of $4.39 per day, and an expert boat-steerer (C. W. Austin) worked for 76 cents per day.

The share, or lay, system has generally been used in the deep-sea fisheries, and although the net return to the fishermen has generally been pitiably small, yet cod and mackerel fishing has given a larger share of the profits to the men than has whaling, and the share system used never became what Morison described as "the caricature of communism that it did in New Bedford." At Gloucester the fishing craft were owned by hard-working tradesmen, who were fish dealers, wholesale distributors (or merchants), and operating shipowners. These men kept general stores and outfitted, equipped, and supplied the fishing vessels with all that they and their crews needed, and in return for services and the use of the fishing craft, outfit, supplies, and food, the fisherman retained half of his catch, with the captain obtaining an additional bonus of six to eight per cent on the gross "take." In other Massachusetts fishing communities, the vessels were generally owned in sixteenth shares, with members of the crew often owning a fraction, and everyone fished "on his own hook," furnishing his own lines and gear and part of his food. The owners of a fisherman supplied general essential foods and ship chandlery and deducted the cost from the gross "take" before any division of the proceeds of a voyage was made. These important or essential items of food, chandlery, or supplies furnished by the owners were designated "great general," and in some sections a "small general" was used, which consisted of firewood, beans, potatoes, and meal, the cost of which was divided among the men aboard. Having deducted the "great general," the owners took one-quarter to three-eighths of the net proceeds from a fishing voyage. The rest was divided among the crew "in proportion to the amount each man caught." In mackerel fishing, where it made a difference from what part of the vessel one fished, it appears that "every man's station was allotted beforehand."

The record of the "settlement" made following the close of a voyage (or fishing trip) in 1843 of the schooner *Boundbrook* of the Wellfleet (Cape Cod) mackerel fleet has been preserved, from which the following figures are gleaned: The "take" was sold for $836.11; the bill for outfitting was $83.92, and the food furnished by owners ("great general") cost $87.65. The owners took one-quarter of the net proceeds of $664.54, or $166.13, leaving $498.41 to be divided among the eleven members of the crew, three of whom—the skipper and two others—each received $54.09 and the other eight men and boys aboard smaller amounts according to their catch, the lowest share being $18.78 as against an average for all the eleven members of the crew (including the captain and mates) of $45.31 each.

Profitable Whaling Voyages and Record "Takes"

As sperm oil was much more valuable than ordinary whale oil, the value of the cargo of a whaling ship depended on the type of oil brought home; also the quantity of whalebone and, of course, the market prices in effect at the date of the return. Among the outstanding profitable voyages of whaling ships can be cited the following:

Name of Whaling Vessel	Hailing Port	Secured on Single Voyage: Barrels of Oil	Secured on Single Voyage: Value in Dollars	Name of Whaling Vessel	Hailing Port	Secured on Single Voyage: Barrels of Oil	Secured on Single Voyage: Value in Dollars
ONWARD	New Bedford, Mass.	5,740	417,000	FAVORITE	Fairhaven, Mass.	4,600	116,000
PIONEER	New London, Conn.	1,391	151,000	WILLIAM HAMILTON	New Bedford, Mass.	4,181	109,000
MONTREAL	New Bedford, Mass.	4,018	136,000	SOUTH AMERICA	Providence, R. I.	5,500	89,000
CORAL	New Bedford, Mass.	3,350	126,000	SARAH	Nantucket, Mass.	3,497	89,000
SHEFFIELD	New Bedford, Mass.	7,000	124,000	UNCAS	Falmouth, Mass.	3,468	88,000

The above list of high-profit whaling voyages is not complete, as publicity was not given many voyages when the realization was either high or low. Some owners, skippers, and communities boasted of achievements, whereas others kept more out of the public eye. It is known that the whaler *Georgiana,* under the command of Capt. John Orrin Spicer, of New London, on a 1866-1867 voyage returned stowed with oil and bone that sold for $98,000, and Capt. Erasmus Darwin Rogers took out the whaling topsail schooner *Charles Colgate* of New London in 1863 and "returned with a full cargo of oil which sold for $1.35 a gallon, bringing $90,000." The family records of Capt. Franklin F. Smith (1803-1874), of New London (one of five brothers—all whaling skippers), state that Capt. Franklin F., on seven successive voyages, stowed cargoes of sperm and whale oil valued at about $650,000. A brother, Capt. James Smith (1800-1877), on each of three voyages on the *Columbia* (he took her out in 1836, 1838, 1840, and 1842), "stowed more than 4,000 barrels of oil." The most profitable recorded voyage of a Nantucket whaler was that of the *Loper,* which had a "take" of 2,280 barrels valued at $50,000. The record voyage of the *Onward* of New Bedford, under the command of Capt. William H. Allen, of New London, was of 2 years 10 months and 8 days' duration (from June 2, 1863, to April 10, 1866) and was made largely during the period of the Civil War, with the Confederates seeking "to burn, sink and destroy every Union vessel." The *Onward's* "take" was unusually large, consisting of 5,600 barrels of whale oil, 180 barrels of sperm oil, and 62,100 pounds of bone (all taken from 134 whales), and she was lucky to reach port and enjoy the benefit of high war prices as had the *Pioneer* of New London. Capt. William H. Allen must have been a part owner of the *Onward* on her record voyage, for his share of the profits was $39,836, or 9.55 per cent, according to personal and family records; whereas the lay of a skipper was usually 1/18, or some 5.3 per cent. Capt. William H. Allen was one of several Captain Allens operating whalers out of New Bedford contemporaneously. He had gained a fine reputation with New London whalers and had previously taken out the *Onward* from New Bedford in 1858 and the *Huntress* and other vessels in the earlier fifties. Capt. William H. Allen's "luck" was a by-word among old whalemen, the old salts declaring that when his ship appeared, "the whales rose to the surface and swam around waiting patiently to be caught."

The much-publicized "record" voyage of the whaling bark *Pioneer* (Capt. Ebenezer Morgan, of Groton) was a short one made during the Civil War. The "take" was a moderate one, but it sold in a high war market at prices that brought her owners about four times the cost of the fortunate vessel and her outfit. After this record voyage, the *Pioneer* (originally constructed at Charlestown, Mass., as a government transport) was rebuilt with auxiliary steam, and Captain Morgan's second voyage on her (April 28 to November 14, 1866) was the first to be made by a steam whaler. A comparison between the two most profitable voyages of American whalers is of interest. Both benefited by Civil War high prices for oil and bone, but the bigger *Onward,* on a 34-1/4-month voyage, secured over four times as much oil and nearly three times as much bone and made 2-3/4 times the revenue from sales as the *Pioneer* realized from her 15-1/2-month voyage, which was only 45 per cent of the length of the amazing voyage of the record-holder *Onward.*

The *Montreal* unloaded 3,823 barrels of whale oil, 195 barrels of sperm oil, and 31,700 pounds of bone. The *Coral's* cargo of 3,350 barrels was all sperm oil, and the vessel was at sea about three years; whereas the *Sheffield's* "take" in a four-year voyage consisted of 7,000 barrels of whale oil and 115,000 pounds of bone. Incidentally, the whaler *George Washington*—not mentioned in the table—in 1851, with Capt. Pardon C. Edwards in command, sailed from New Bedford and in the course of her voyage (which continued until 1855) also took 7,000 barrels of whale oil, 75 barrels of sperm oil, and 50,420 pounds of bone; a large part of this "take," however, was sent home in other bottoms. The *Favorite* (Capt. Eben Pierce), sailing in 1850, carried to her home port 4,300 barrels of whale oil, 300 barrels of sperm oil, and 72,000 pounds of bone. The *William Hamilton* (Capt. William Swain) cleared New Bedford in 1834 and returned in 1838 with a cargo reported as consisting of 4,181 barrels—all of sperm oil. It would seem, however, that the whaler had on board when she reached New Bedford 4,060 barrels of sperm oil, as 121 barrels had been sent home on another vessel, but the oil she herself brought to port is proclaimed as the record "take" of sperm oil on a single voyage.

The *South America* (Capt. R. W. Sowle) sailed in 1847 and returned to port in 1849 with 5,300 barrels of whale oil, 200 barrels of sperm oil, and 50,000 pounds of bone. As it had cost $40,000 to fit out the vessel, her owners received from a twenty-six months' voyage more than the price of the vessel twice over; incidentally, this whaler had a "take" of four times that of the record money-earner *Pioneer* for a single voyage, although because of the prevailing market price, the realization from the cargo of the *South America* was a scant sixty per cent of that of the lucky *Pioneer.* The *Sarah* (Capt. Frederick Arthur), with 3,497 barrels of sperm oil, brought to Nantucket the largest sperm oil cargo ever landed at that island port; she sailed for the Pacific on May 26, 1827, and reached home again on April 19, 1830, after an absence of 2 years 10 months and 24 days. The *Uncas* (Capt. Henry C. Bunker) sailed in 1831, and her "take" on a voyage of 2 years and 8 months was 3,468 barrels—all sperm oil. The *Loper,* with Capt. Obed Starbuck in command, made three voyages out of Nantucket in 1824, 1827, and 1829, respectively. Her 2,280-barrel record "take" was made in a cruise that occupied only fourteen months; yet the "take" gave a realization of $3,570 per month, which is approaching a record return and, it has been said, "is suggestive of the finds occasionally met in gold mining." Records are available stating that the whalers *Lowell* (Captain Benjamin) and the *General William* (Captain Holt) "brought into New London from voyages of less than two years about 4,500 barrels of oil and 43,000 pounds of bone, each 'take' selling for $61,000." It was said that the *Lowell* at one time had "sixteen dead whales alongside awaiting their turn for the blubber spades and the kettles."

Possibly the record for profit made by a ship—and her commander—on one voyage (or absence from the homeland), considering the value and investment in the ship and the return to the owners "per cent, per annum," should go to the whaler *Envoy* of New Bedford. This vessel, built in 1833 for Amherst Everett, of Providence, R.I., was a ship of 392 tons register and sailed from home on her first voyage December 26, 1833, under Capt. J. C. Clark for the Pacific. She was back on January 1, 1838 (4 years and 6 days later), with 2,100 barrels of sperm oil worth $57,887, having paid for her cost and outfit and yielded a handsome profit to her owners. On her last cruise for Everett, which ended in February 1847, she brought home a cargo worth $56,000, and it is said that during the fourteen years that he had title to her, the original owner of the *Envoy* and his friends "cleaned up $12,000 a year on an investment of some $35,000 all told."

Capt. William C. Brownell, of New Bedford, then bought the *Envoy* "for a song," as she had not been well kept up, and he planned to break her up for the metal in her hull; but Capt. W. T. Walker, on the lookout for a cheap ship, acquired her, and she cost him $8,000 when repaired, outfitted, stored, and ready for sea. Captain Walker was unable to obtain any insurance on his vessel, but he shipped a crew and sailing from New Bedford July 14, 1848, went to Wytootacke, where he had a thousand barrels of oil that had been salvaged from a wreck and that he had bought on speculation. This oil the *Envoy* carried to Manila, whence Captain Walker shipped it to London and sold it at a profit of $9,000. The *Envoy* then made two whaling cruises out of Manila. On the first, in only 55 days, she took 2,800 barrels of whale oil and 40,000 pounds of bone and shipped 1,800 barrels of the oil and all the bone to London, where they were sold at a net profit of $37,500. On the second cruise, in the North Pacific, the "lucky old whaler" took 2,500 barrels of oil and 35,000 pounds of bone, and "loaded in every nook and corner," Captain Walker took the *Envoy* into "gold-crazed" San Francisco in early 1851, where oil and bone were sold at a profit of $73,450, and bone that added $12,500 to his gain was shipped to New Bedford. Captain Walker then sold his ship for $6,000, and his original investment of $8,000 had brought him $138,450 in return, giving a net profit of $130,450, or 17.3 times the amount of the initial capital ventured.

The whaling ship *Lagoda* of New Bedford, belonging to Jonathan Bourne and associates, was of 371 tons (length 107 ft. 6 in., beam 26 ft. 9 in., depth 18 ft. 4 in.) and, built in 1840-1841, cost her owners about $22,000, for the average cost of a whaler of this type built in 1841 was stated as $20,120, of which about half was the value of the vessel and the other half equipment and outfit. The *Lagoda* was a uniformly lucky or "greasy" ship. She made six voyages during the period 1841-1860, which yielded an average profit of 98 per cent per voyage; the lowest percentage of profit for a single voyage was 29.6. On her next two voyages, made during the Civil War, the *Lagoda* returned a net profit to her owners of 219.0 and 363.5 per cent, respectively, making a record of profitable returns for eight consecutive whaling voyages.

New London claims the honor of bringing in the largest whaling cargo "that sold for the highest price and gave the largest profit above the cost of vessel and outfit." Capt. Ebenezer Morgan, of Groton, Conn., sailed from the Thames River on June 4, 1864, in the whaler *Pioneer* and returned on September 18, 1865, after an absence of 15 months and 14 days with 1,391 barrels of oil and 22,650 pounds of bone. This was by no means a large "take," but because of a most favorable market, it was sold for $151,060. The cost of the ship and outfit was stated at $35,800, and the return on a voyage of 15-½ months was 4.2 to 1. However, New London whalemen assert that if the depreciation of the ship and equipment was considered and deducted from the stated whole cost and the time factor and profit per annum taken into account, then the net return on invested capital per dollar per annum was above the record set by the *Envoy*. New London, in making its claims for the *Pioneer*, evidently ignored the amazing money-making record voyage of the *Onward* of New Bedford, which under the command of a New London skipper, Capt. William H. Allen, realized $417,000 in 34-¼ months at sea—equivalent to about $146,000 per year for a vessel probably worth, with outfit, not in excess of fifty to sixty thousand dollars.

The size of the vessel, with the capacity of holds for carrying oil and the number of officers and crew required, and the length of the voyage were naturally important factors that had to be considered in comparing the profits of cruises; for, after all, it was then, as now, the percentage of return per annum on each dollar invested and the compensation received per year for one's time and services that counted. The Nantucket and certain other whalers were generally small; whereas some of the New London and New Bedford whaling vessels were quite sizable ships. The market prices in effect when a whaler returned home was the prime factor in the making of records of profitable voyages, but the size of the vessel and the "take" in barrels and bone and the kind of oil secured were also important factors in the money return from a single voyage of a whaler. Records of the "take" in barrels of oil per whaler in relation to registered tonnage and the length of voyage would be of much more merit than those accepted for realization per voyage, with the cruises of the record-makers varying from some fifteen months to four years. Successful voyages are recorded occupying from some nine months to about five years, but during the longer periods from the home port the whalers invariably sent back a good part of their total "take" by other vessels. The average length of a whaling voyage during the golden era of whaling (a period when relatively big whalers journeyed to distant seas) can be gleaned from the statistics of 1847, when fifty-two sperm whalers returned to port after voyages that averaged 45 months 12 days and fifty right whalers arrived home after an absence that averaged 31 months 7 days.

For size and length of voyage, the Nantucket schooner *Watchman,* Capt. Charles W. Hussey, has been credited with some sort of record profitable cruise. This little craft sailed in September 1857 and returned to port eleven months later with 386 barrels of whale oil, 41 barrels of sperm oil, and a moderate amount of bone aboard. The "take" in the usual whale products for this small vessel was not worthy of mention, but the *Watchman* had been lucky to find a quantity of the valuable ambergris (a morbid secretion found in the bowels of a sperm whale), which sold for $10,000. This fortunate addition to the "take" made the short voyage of the little schooner, with its small crew, an outstandingly profitable one. Ambergris (grey amber) is supposed to be a product caused by disease. It has been found afloat at sea and washed ashore on beaches in various parts of the world, but usually it has been obtained from whales that were not in good physical condition. It is highly valued in the perfumery business, selling for "more than its weight in gold," for it has the property of thoroughly uniting the ingredients used. In 1878 the *Adeline Gibbs* of New Bedford brought home 132 pounds of ambergris, which sold for more than $23,000, and Starbuck says that in 1836 the bark *Wade* of Dartmouth, Mass. (Capt. Charles B. Ray), obtained the incredible quantity of "50 barrels" (apparently the unit of measurement is in error). Spears says that between 1836 and 1880 the American whalers saved 1,667⅞ pounds of ambergris and that the finding of this valuable product was "so much velvet" and can be likened to finding pearls in ordinary American oysters.

Considering the cost of ship provisions, supplies, and outfitting, several whaling shipowners doubled, and in a few cases trebled, their invested money on a single lucky voyage. Whalemen vied with each other for the honor of the largest and quickest catch, for the best string in number caught; but of far more importance was the oil yielded by a string or by an individual whale. A 100-barrel whale was a big mammal, and Captain Davis, in NIMROD OF THE SEA, writes that the largest whale that he ever took in his extensive career was 79 ft. long and made 107 barrels of oil. But Davis' record catch was a small whale compared with some of the leviathans that were captured, as the following statistics of yield of oil from a single whale clearly show:

Name of Whaling Vessel	Yield of Oil	Name of Whaling Vessel	Yield of Oil	Name of Whaling Vessel	Yield of Oil
	Barrels		Barrels		Barrels
ISAAC HICKS	350	GENERAL PIKE	274	MONKA	145 (sperm)
(Capt. John Potter Rice)...	337	ADELINE	250		
(Capt. William H. Allen).	287	WAVE OF NEW BEDFORD	162 (sperm)	ONEIDA	142 (sperm)
ROBERT BROWNE	275	HARVEST	156 (sperm)	JAMES ARNOLD	137
				OCMULGEE	130

Capt. William H. Allen, of New London, who holds the record for making the most profitable of all whaling voyages in the *Onward* of New Bedford (1863-1866) was an officer on the *Robert Browne* when she took a right, or black, whale at Kamchatka in 1845, which yielded 275 barrels. However, Captain Allen's biggest catch was a polar whale 18 ft. broad that "made 287 barrels." Allen, writing of his personal experience with big whales of different types, says that the largest sperm whale (caught on the *Charles Phelps* of New London) was 95 ft. long and made 105 barrels; the largest humpback made 111 barrels, the largest California gray whale made 101 barrels, while the largest finback, which was 90 ft. long, gave only 30 barrels. A sulphur bottom whale galleyed, or run over, by his vessel made 80 barrels. "I've caught all kinds of whales living," said Captain Allen, "but we don't usually hunt sulphur bottoms. They are the largest type of whale; the one we struck was about 125 feet long, but I've seen larger."

Capt. John Potter Rice (1798-1873), of New London, in addition to killing a whale which yielded 337 barrels of oil when in command of Joseph Lawrence's *Isaac Hicks* during a voyage that lasted from September 26, 1844, to May 24, 1848, is also credited with killing the largest bowhead ever taken in the Arctic; this whale was "20 feet broad, measured 60 feet around her and she stowed down 350 barrels." New London vied with New Bedford for honors in whaling as far as big catches, "takes," and profits were concerned. However, of the vessels listed above that killed large individual whales giving a big yield, the *Harvest* hailed from Nantucket, and the *Ocmulgee* was owned in Edgartown.

The large whale captured by the *Oneida* (Captain Vincent) was one of a "string" of ten that yielded, all told, 1,140 barrels of oil (an average of 114 barrels per whale), and the 137-barrel whale killed by the *James Arnold* (Captain Sullivan) was the largest of a "string" of eight that collectively "tried out" 815 barrels (an average of 102 barrels per whale). Both of these big catches were made on fishing grounds off New Zealand. The *Harvest* captured her record big whale in 1853, the *Adeline* (in the Okhotsk Sea) in 1855, the *General Pike* in 1861, and the *Wave of New Bedford* (Captain Briggs) in 1876.

Whales are generally divided into two prime classes, which can be designated as bone whales and toothed whales. The bone whales include the species known as the right and the bowhead, the finback (or rorqual), the humpback, the gray whale of the Pacific, and a rare pigmy whale that had very valuable bone. The toothed whales have no whalebone, but they have teeth which the whalebone genus has not, and this class includes species known as the sperm, or cachalot (with its large head measuring about one-third of its length), the bottlenose, the grampus, and the narwhal. The sperm whale is the most valuable of all whales because of the quality of the oil and the spermaceti contained in a cavity of the great head, or case. It goes about in schools, can remain under water for twenty minutes at a time, and does not frequent the polar regions. Ambergris is an extremely valuable commodity occasionally found in the sperm whale's intestine; the teeth, moreover, make valuable ivory. The sperm whale, generally the largest of the toothed cetaceans, was both the most dangerous to hunt and the most valuable to its captors. This whale frequented temperate and tropical waters. The right whale, including the bowhead (or polar variety), was found in the arctic and antarctic seas. Sperm oil had generally two to three times the market value of right, or ordinary, whale oil. In addition to the great quantities of fluid oil found in the head of the sperm whale, which is the most highly developed species of Cetacea, a waxy solid known as spermaceti (in demand for making candles, cosmetics, ointments, etc., and highly valued) was obtained. The value of whale oil was not apparently affected as much as has been generally supposed by the rivalry of the cheap and easy production of mineral oils and illuminating gas, and sperm oil especially tended to rise in price as the whale industry declined. Sperm oil was distinctly preferable to mineral oil for lubricating and other purposes; the trouble was that the expense of securing it increased more heavily than the price, and the element of relative scarcity gradually crept into the picture. When the whalers first returned from the Pacific hunting grounds in 1817 (following the close of the War of 1812) and the golden age of whaling was about to begin, whale oil sold at 60 cents and sperm oil at 72 cents per gallon, but whalebone fetched only 12 cents per pound—hardly enough to warrant bringing it in.

The relative market value of sperm oil, ordinary whale oil, and whalebone for certain years during the period 1835-1872 inclusive is stated herewith:

Year	Price per Gallon		Price per Pound
	Sperm Oil	Whale Oil	Whalebone
1835	$0.84	$0.36	$0.24
1850	1.20	0.49	0.34
1860	1.41	0.49	0.80
1865 (Civil War)	2.25	1.45	1.71
1872	1.45	0.65	1.28

Other records show prices of 39 cents per gallon and 21 cents per pound for bone in 1835. Sperm oil was stated at 88 cents per gallon in 1845 and as high as $1.77 per gallon in 1855. Whale oil was reported as 33 cents in 1840, at 71 and 73 cents in 1855, and 79 cents in 1856; whereas whalebone jumped to 50 cents a pound in 1852, but dropped to 34-1/2 cents the following year. It was reported as high as 97 cents in 1855-1856, and it is said, "Two and a half million pounds were landed in this pre-war year of high prices as against 20,000 pounds in 1817 when the price was only 12 cents per pound."

It can be said that the prices of all whale products in the period of twenty years immediately following the Civil War were, on the average, higher than they were during the several decades that preceded the war, and the price of whalebone increased tremendously during the latter period. According to Spears, "Sperm oil was selling at 73 cents in 1842 and at 82 in 1886. It was $1.45-1/2 in 1860 and $2.55 in 1866. Bone sold for 20 cents in 1841, 80-1/2 cents in 1860, $1.71 in 1865, and $2.68 in 1885." Spears also gives average income from the sale of all products per ship engaged in the whaling trade as $8,428 in 1846, "something over $16,000" in 1854, $15,550 in 1885, and "about $19,000" in 1905. The American whaling fleet, which numbered 508 vessels (166,841 tons) in 1860, was reduced to 226 (84,233 tons) in 1865 and 199 (105,170 tons) in 1866, although the prices of whaling products were advancing. In 1868 there were 349 registered whalers totaling 78,486 tons; in 1872, 217 vessels totaling 51,608 tons; in 1880, 174 vessels totaling 38,408 tons; in 1885, 113 vessels totaling 25,184 tons; and in 1900, 42 vessels totaling 9,899 tons.

Whaling a Hazardous Enterprise

But there is another side to this profit picture of whaling. It was a grim trade of stern and iron men, in little wood ships, negotiating the most turbulent and dangerous waters in the world—quite often uncharted. The result was that whalers were occasionally lost on unknown reefs, crushed in polar ice, or overwhelmed by terrific hurricanes and gigantic seas. New Bedford suffered a great calamity on September 12, 1871, when a fleet of its whalers, valued at a million and a half dollars, was crushed in the ice in Bering Strait. Five years later (1876), arctic ice caught twenty American whalers and crushed twelve of them, with a resultant loss of many lives and physical property valued at eight hundred thousand dollars. Marvin has said:

> Just as the Spartan mother warned her son to return with his shield, or on it, so the merchants of Nantucket, New London, or New Bedford caused their captains to understand that they must return with a full hold or not at all. The success of every voyage was, of course, largely a matter of chance, and beyond all human calculations. No foresight could sometimes fathom the shyness of the whale schools or their eccentricities. A captain who had been out a year or two and still had most of his casks empty felt as might a condemned man riding in a tumbril to the guillotine.

Notwithstanding the custom of the times and the psychology in effect, whaling ships did return to their home ports at times with not enough oil aboard to pay expenses. An extreme case is that of the brig *Emmeline* of New Bedford, which arrived home in September 1843, after an absence of two years and two months, with only 10 barrels of oil. The vessel had encountered extremely bad luck, and among the list of unfortunate occurrences was the loss of her captain, "killed at his post of duty." About the same time, a mutiny on the *Clifford Wayne* of Fairhaven broke up her voyage, and she returned home "with so little oil that her owners had to take a loss of ten thousand dollars." Another ill-starred voyage was that of the Warren, R.I., whaler *Benjamin Rush* (Captain Munroe), which sailed in 1852 for the Pacific and returned the following year with only 90 barrels of oil in her hold. The captain and his entire boat crew had perished in a fight with a whale off the Japanese coast, and the cooper was the only surviving member of the ship's complement that could navigate the ship. On this unfortunate voyage, the *Benjamin Rush* circumnavigated the globe and sighted land only twice —Cape Verde Islands outbound and Trinidad when homeward bound.

Historians have said that in 1837, out of eighty-one whalers, fifty-three made a profit, eight paid expenses, eleven lost a little money, and nine a good deal of money. An analysis of available figures would suggest that three-quarters of the voyages were profitable (many of them very much so) and one-quarter unprofitable, all things considered, but much less than ten per cent could be deemed "disastrous voyages." In 1858, with competition keen and whale oil prices falling rapidly due to the fact that petroleum oil became a market factor, it is said that of the sixty-eight ships out of New Bedford and Fairhaven, forty-four (or about sixty-five per cent) fared badly, their combined losses reaching up to a million dollars. Marvin has written that it was the "possibility of quick and great gain which drew shrewd merchants and intrepid seamen into the whaling trade and kept them there even through years of disappointment and disaster"; that if the exceptional lucky voyages had been typical, "the whole nation would have gone a-whaling," but "while the gains were sometimes prodigious, the risks were great, and the failure of a voyage meant ruin to the owners unless they were men of large wealth." Yet it has been said that "nowhere except in gold or diamond mining could so much money be so readily made as by fortunate whaling voyages."

Whaling, as courageously practiced by Americans, was a hazardous business. Maddened hunted whales attacked and smashed whaleboats and often maimed and drowned their crews. Occasionally, a wounded whale deliberately rammed a stout oak whaling ship and severely injured or sank her. The whaler *Essex* (Capt. George Pollard, Jr.), which sailed from Nantucket August 18, 1819, when off the west coast of South America near the equator on November 20, was rammed twice by an infuriated sperm whale (said to have been ninety feet long), thrown on her beam ends, and destroyed. Of the three boats of the *Essex* carrying officers and crew—all of which had on board but little food and water—one (the second mate's) was never heard from. The first mate's boat was picked up by the brig *Indian* of London on January 18, 1820, and the survivors reached Valparaiso February 25. The captain's boat was found—with its occupants in delirium—by the whale ship *Dauphin* and taken to Valparaiso, where they arrived March 17; the men saved had all resorted to cannibalism to keep alive. Three of the seamen of the *Essex* who had landed at Ducies Island, where the ship *Elizabeth* of London had been wrecked (and eight of her crew who got ashore starved to death), were fortunately also rescued by a "mercy ship" before life was gone, but only after they had endured terrible suffering.

The whale ship *Ann Alexander* of New Bedford (Capt. John S. Deblois), on the "offshore ground" in the South Pacific in 1850, was sunk by the charge of a maddened whale after the whale had attacked and smashed two of the ship's boats hunting it. Five months later, this belligerent whale, with two of the *Ann Alexander's* harpoons in its carcass and fragments of the ship's timbers embedded in its head, was killed by the whaler *Rebecca Simms* of New Bedford; the whale was not of very great size, as it yielded 75 barrels of oil. The bark *Kathlene* of New Bedford, with Capt. Thomas H. Jenkins in command, cleared port in 1901 and was sunk by a fighting whale a little north of the equator in the Atlantic on March 7, 1902. In 1850 the whaler *Pocahontas* of Holmes Hole was rammed by a whale off the Brazilian coast and, with her bow badly stove and leaking beyond the capacity of her pumps, barely stayed afloat long enough to make Rio de Janeiro. The *Osceola 3rd* cleared New Bedford in 1866 with Capt. Martin Mallory in command. Two boats were lowered to attack a bull whale, which, after destroying both boats, attacked the ship and badly damaged the bow. In a third boat, with a picked crew, Captain Mallory finally killed the fighting whale, but only after a desperate battle that lasted twelve hours. Starbuck says that thirty-one bombs were fired into this whale before it was killed and that it yielded 115 barrels of oil.

It was common for a sperm whale to attack a ship's boat hunting it, but the *Emerald* of New Bedford (Capt. Abraham W. Pierce), which sailed from her home port on July 15, 1857, fought one whale for nine hours in the North Pacific, lost three good whaleboats, five harpoons, and seven (lance) bombs, and in the end lost the whale itself, for both lines parted when the whale was killed and the dearly paid for prize sank in forty fathoms of water. Capt. William Barney, Jr., sailed from Nantucket in the *Barclay* for the Pacific on October 9, 1832, and shortly thereafter, off the Azores, there was a battle to the death with a ferocious fighting sperm whale that shattered the boat and killed the first mate, who had struck it with both irons. A few days later, the whaling ship *Hector* of New Bedford (Capt. John O. Morse) attacked a whale that destroyed both the captain's and the mate's boats and scattered the crews, which were fortunately rescued. A third boat escaped a similar fate by inches, as the cachalot attacked it repeatedly with snapping jaws; but when the whale turned over to get its nose out of water to breathe, Mate Norton was fortunate to be able to drive his lance into the "life" of the belligerent mammal, killing it almost instantly. On cutting in the blubber, two harpoons from the *Barclay* were found in its body, proving that this was the fighting whale that a short time before had killed that whaler's mate.

In NIMROD OF THE SEA, by Captain Davis, the battle put up by a ferocious sperm whale encountered by Captain Huntting is described:

> When the monster was struck, he did not attempt to escape, but turned at once on the boat with his jaw, cut her in two, and continued thrashing the wreck until it was completely broken up. One of the loose boats picked up the swimmers and took them to the ship; the other two boats went on, and each planted two irons in the irate animal. This aroused him, and he turned his full fury on them, crushing in their bottoms with his jaw and not leaving them while a promising mouthful held together.

Twelve demoralized men were then in the water, and when Captain Huntting himself fired a bomb-lance into the whale, the infuriated monster thereupon tore right through the boat "like a hurricane, scattering all hands right and left." Four boats and their gear had been demolished by a whale that successfully resisted capture, and as most of the men were greenhorns and terrified, Captain Huntting sailed for Buenos Aires to refit and re-equip his vessel and, he said, also to allow some of the men who were inexperienced whalemen and badly shaken to desert the ship—which the green hands apparently promptly did. Every skipper of a whaler well knew that, in the hazardous game of hunting and fighting whales, once a seaman lost his "nerve" he was useless ever after.

Occasionally, a small boat hunting a whale traveled out of sight of the mother ship and became lost at sea without stores and equipment to take care of herself and crew for the time needed to make the nearest land. Many American whaling ships sailed optimistically forth on a cruise and were never heard from again; some left a foreign port and "disappeared." Many others ended their careers on uncharted reefs of the mid-Pacific, and the crews of some whalers were butchered by savages. How many of the whalers and their crews that were lost met their dooms will never be known, for "the port of missing ships does not report arrivals."

The whaler *Lady Adams* of Nantucket vanished soon after being spoken off the Japanese coast. Another American whaler, the *Lawrence,* was wrecked on the Japanese coast in 1846. Out of the thirty odd hands aboard, only the second mate and seven men survived the wreck, and they were treated inhumanly by the natives and officials, being jailed in dungeons and holds of junks, beaten, hung in cages in public, and abused for seventeen months. Of the eight men who landed, seven were eventually deported, after being compelled as the price of freedom to insult the Christian religion and trample on a cross, and the eighth man was executed barbarously because he protested. This episode of outrageous treatment of American sailors by the Japanese occurred when Commodore Biddle's squadron lay in the harbor of Yeddo and the United States Government imagined that it "had broken the crust of Japanese exclusiveness and conservatism." Also, it followed by only a year the call at Yeddo of the Sag Harbor whaler *Manhattan* (Captain Budd). Acting in a spirit of humanity and without any selfish thought of gain, Captain Budd had carried twenty-two shipwrecked Japanese sailors back to their home. He was censured for his uninvited visit and told that, whereas he would not be molested this time and would be permitted to leave, he must promise never to return to Japan and that, if he did return, the punishment for himself and all of his men would be death.

Capt. George Pollard, Jr., of Nantucket, was a brave and capable whaling skipper, and yet of his two commands, the first, the *Essex,* was rammed and sunk by a fighting whale and the survivors of the destroyed vessel resorted to cannibalism to keep alive. His second command, the *Two Brothers,* in which he sailed from Nantucket in 1821 (two years after clearing in the *Essex*), was lost on an uncharted coral reef in the Pacific while searching for whales. This time all the complement of the vessel was saved, but Captain Pollard was so distressed by his bad luck that he gave up the sea. However, another Nantucket whaler, Capt. Benjamin Worth, boasted of his good luck. Born in 1768, the skipper writes:

I began to follow the sea in 1783 being then fifteen years of age and continued until 1824. During this period of forty-one years I was shipmaster twenty-nine years. From the time when I commenced going to sea until I quitted the business I was at home only seven years. At the rate of four miles an hour while at sea I have sailed more than 1,191,000 miles. . . . I have assisted in obtaining 20,000 barrels of oil. . . . While I commanded a vessel not one of my crew was killed or even had a limb broken by a whale.

Dame Fortune certainly smiled on Capt. Benjamin Worth, of Nantucket, and his record, if not unequaled, was most unusual. The first command of Captain Worth was the *Hector* in 1797, following which he was skipper of the *Brothers* on two voyages sailing in 1808 and 1809, the *George* 1811, *Charles* 1815, *Rambler* 1818, and *Congress* 1826. Generally, an aggressive whaling skipper had fierce combats with whales practically every voyage.

Whalemen often underwent fearful experiences as they explored the Seven Seas and found new lands inhabited by savages and warlike as well as treacherous natives; their business, often that of pioneers, was very different from that of ordinary merchant trading vessels, for which they blazed a trail, and the hazard of their voyages in uncharted seas and among unknown peoples was infinitely greater. The whaler suffered great danger from shipwreck, with the survivors cast away among cannibals or belligerent natives or on uninhabited desolate islands, sometimes to die of starvation. The danger of mutiny was also greater on a whaler than on an ordinary trader, and it must be admitted that there was often far more provocation for rebellion on the part of the crew against cruel, inhuman, and arbitrary treatment. The terrors of the Arctic and Antarctic were in the ultimate much greater than those of the generally unfrequented tropics and more than crashing into an iceberg or being crushed with ice. In August 1775, the whaler *Greenland* (Captain Warrens), when drifting among icebergs off the Greenland coast, saw a vessel badly dismantled aloft with a weather-beaten hull and no one visible on deck, so a boat was lowered and Captain Warrens, his curiosity aroused, boarded her. In the cabin was found a corpse, well preserved by the intense cold, sitting at a desk, pen in hand, and before him lay a logbook in which the last entry, still decipherable, read:

Nov. 14, 1762. We have now been enclosed in the ice seventeen days. The fire went out yesterday and our master has been trying ever since to kindle it again without success. His wife died this morning. There is no relief.

In the principal cabin, the dead body of a woman reclining on a bed was found, and seated on the floor was the corpse of a man holding a steel in one hand and a flint in the other, with some tinder near by. In the forward part of the ship, several sailors were found lying dead in their berths, and the body of a dog was crouched at the bottom of the gangway stairs. This ship, with her dead crew, had been preserved in the arctic ice for thirteen years and during that time had evidently not contacted or probably been sighted by any other whaler. Capt. George E. Tyson tells of a somewhat similar affair in his ARCTIC EXPERIENCES.

An instance of the abandonment of a fine vessel in the Arctic by a well-disciplined and competent British crew came to light when Capt. James Monroe Buddington, of Groton (New London), Conn., sailed from the Thames in the whaling bark *George Henry* on May 20, 1855, to the Arctic and when near Cape Mercy, Davis Strait, sighted a ship several miles away amid dangerous floating ice. At great risk, Captain Buddington took his bark near the stranger, which had no canvas set and showed no sign of life. Upon being boarded, she was identified as the *Resolute,* one of a fleet of five ships sent out from England under Sir Edward Belcher to search for Sir John Franklin and his lost polar expedition. The *Resolute* had been caught in an ice-pack, and her crew had abandoned her in an orderly manner and taken refuge in the other vessels of the fleet, which returned home without locating the *Erebus* and *Terror.* They had become ice-beset in September 1846 and were deserted by the surviving members of their crews in April 1848, and subsequently all perished trying to reach civilization. Captain Buddington split up his crew, put men aboard the salvaged *Resolute,* and notwithstanding ice and "terrific weather" got both vessels to New London, arriving December 23, 1855. The *Resolute* was taken over by the U.S. Government and after being repaired was "sent to Queen Victoria." Many years later, when the *Resolute* was broken up, a flat-topped desk made from her timbers was presented by the queen to President Grover Cleveland.

Truly brave men are generally gallant men, and American whalingmen have a record for humanity and self-sacrifice as well as for heroism and daring in battles with the elements and "monsters of the deep" for gain. An instance of this all-pervading spirit, which showed "warm hearts beneath their rough garb," is the experience of the whaler *Monmouth* of Cold Spring, Long Island (Capt. Isaac Ludlow). Sighting a lonely island in the Indian Ocean and sensing that some people were on its desolate rocks, the captain sailed in close to investigate and found over a hundred of the passengers and crew of the wrecked British bark *Meridian.* The American whaler promptly gave up all ideas of a voyage for profit, but got the British castaways aboard, fed them, and sailed for the Mauritius—the safest civilized port in which they could be landed and given care. THE MERCANTILE GAZETTE, commenting on this fortunate, timely rescue, said: "By this act of humanity, Captain Ludlow lost a season of whaling where he probably would have taken five or six hundred barrels of oil, but he saved the lives of one hundred and five human beings." In this act of mercy, the captain and every member of the crew (as they were employed on the lay system) donated all their time gratis in the interest of a common humanity.

Wars persistently treated United States whalers badly—the War of the Revolution, the War of 1812, and the American Civil War—and in all three wars it was Britain, America's only real rival in the whaling industry, that was responsible for the depredations and ravages that sought to destroy or drive American whalers from the seas. The humanity of the United States seafaring men was frequently expressed at sea toward unfortunate Britishers both in times of peace and in times of war, but it did not always receive the recognition given the unselfish act of Captain Ludlow in rescuing the crew and passengers of the British bark *Meridian* marooned on a desolate island. In 1814 an American captain, J. Barnard, engaged in the fur seal trade, came across some thirty British subjects who were the surviving members of a wrecked English ship cast ashore on an uninhabited and inhospitable rocky island. Captain Barnard, notwithstanding that Britain was at war with the United States, was moved with compassion at the distress and suffering of fellow human beings, and he was good enough to take this big crowd of Britishers aboard his relatively small vessel and head for a Brazilian port where they could be landed. With the larger number of persons aboard to feed, it became necessary for Captain Barnard to obtain more food, and occasional hunting parties were organized to land on various islands and search for needed supplies. When Captain Barnard, with four of his men, was ashore on one of these missions, to the shame of the British, it must be said that the ungrateful rescued men aboard the "Good Samaritan" American vessel watched their chance, stole weapons, overpowered the unsuspecting crew, took possession of the ship, and, leaving Captain Barnard and his men behind, sailed from New Island for Rio de Janeiro and thence to North America. The cause for this devilish act was said to be the fear of the British that Captain Barnard might break his solemn word of honor, which had been voluntarily given, that he would land them at the first suitable neutral port and, instead of doing that, might cause them to be made prisoners of war. Captain Barnard, four American sailors, a dog, and a boat were cruelly left by the British on a lonely island in a remote corner of the world, with no equipment and with no supplies except what they themselves could find. At one time, Captain Barnard lived absolutely alone on the desolate island in winter without even a boat, but his men, unsuccessful in finding a way to escape or a more hospitable spot, returned. It was not until the war was over that a sail was sighted, and the five emaciated men were rescued in December 1815 by a whaler bound for the Pacific. Captain Barnard had saved the lives of over thirty Britishers, who returned good with evil, deserted their benefactor, and left him with four of his men to the fate from which he had nobly rescued them; they also stole the "Heaven-sent American ship," imprisoned her crew, and justified their acts by saying that there was a war on between Britain and the United States and that it was not to be expected that they would believe the word of a "damned Yankee."

Whaling Catastrophes in the Arctic—the Bering Strait Calamities of 1871 and 1876

There was a great disaster in the Arctic at Baffin's Bay in 1830, when nineteen British and one French whalers were lost and over a thousand men had to shift for themselves and fight against nature for survival on the ice, but a calamity on a much greater scale overtook the American whaling fleet in the Bering Strait area in 1871. Through the strait at the end of June sailed thirty-nine whaling ships and barks destined for Cape Barrow at the extreme northern end of Alaska, where whales were known to be plentiful. It is said that the movement of the Bering Strait ice-packs gave a comparatively easy passage to these vessels, and "their skippers in their combined knowledge and judgment of this part of the world were unequalled." It was reported that, in all, forty-two whalers had gathered at the edge of the ice south of the strait in May 1871 and worked their way north as the ice retreated or opened. It appears that during July thirty-eight vessels followed the Alaska coast until within a few miles of Icy Cape, and finally early in August some of them were able to reach up past Wainwright Inlet and almost to Point Belcher. During all this time, the whaling fleet was never out of sight of the unbounded ice of the Arctic Ocean except when the fogs shut it in, and the open water—generally three to six miles wide—never exceeded ten miles. Small icebergs floated in the open water, and the vessels anchored every night and sometimes remained at anchor for days at a stretch. Whales appeared and were hunted between cakes of ice, and the boats pulled in and followed the narrow leads, or cracks, in the main field itself if wide enough for their oars.

On August 11, the wind shifted suddenly to the southwest, and the ice began to close in on the ships and boats. Many boats were caught, but their crews clambered up on the ice, hoisted the boats up, and hauled them over the frozen surface to their ships, where in haste the anchors were raised and such sail set as would keep the vessels ahead of the irresistible icefield. On August 14, shallow water was reached and the ice-pack, which extended some four or five fathoms below the surface, grounded. The ships again anchored and resumed whaling, but the open water in which they were imprisoned "was in no place more than half a mile wide, while the breadth was in places two hundred yards." For two weeks, the crews killed whales in the pocket-like openings found in the icefield, and the skippers, officers, and crew were determined to lose no opportunity to get a good "take" of oil and bone merely because the ice was threatening. A northeaster was expected, and if it came, the danger of the pack ice would be removed and the ships would proceed still farther north.

A strong northeast gale commenced to blow on August 25, the ice-pack was driven away to a distance of from four to eight miles, and the whales came from under the ice in great numbers. Any but intrepid mariners would have taken advantage of the newly opened channel to freedom and moved south, particularly when the local Eskimos strongly advised it and prophesied that the clearing would not last long, for the wind would change. It is said that the Yankee skippers were "too plucky to be scared," but in fact they and their crews were too intent on the numerous whales now being struck to heed the friendly warning and take seemingly sensible precautions against being frozen in. For four days, the whalers prospered, but on August 29 the proof of the Eskimos' sagacity began to manifest itself, for the wind swung round to west-nor'-west and blew freshly. The next day the wind was back to southeast, and it was blowing hard and snowing. Thirty whaling vessels were in sight, with their spars all frosted, anchored to the southwest of Cape Belcher and busy boiling out oil, while the merciless ice, "like the approach of doom," began crowding in from the west. A good deal of bravado was manifested by the whalemen, coupled with an all-permeating optimism and confidence that the wind would change, "as it should at this time of the year," and they would all get out into open water with big and profitable "takes" to make the risk fully worth while. They were there for oil, and they were not to be frightened away from getting it when whales were so plentiful. The Eskimos urged immediate departure and then, when their admonitions were unheeded, declared the Yankees to be crazy.

On September 2, the gale increased in fury, and the disaster began. The *Comet* was caught between two huge floes and squeezed until all her frames were broken and her stern forced out "until it hung in a bulging mass above the ice." The crew was fortunate enough to escape and found refuge in other ships. Many of the captains were now willing to leave for home, but they could not take their ships out, so they continued to hope for a strong northeaster, and while praying for a favorable gale to liberate them, they continued whaling with undiminished energy. On September 7, while the crew of the bark *Roman* was cutting in a whale, the swirling ice surrounding the vessel, under the impulse of the wind, "literally ground the old vessel to kindling wood," and she had to be abandoned. The next day, the old *Awashonks* was destroyed in like fashion. (This vessel was attacked by the natives of Namorik Island in 1835, and Capt. Prince Coffin, two mates, and four seamen were killed.) Still, whaling operations continued on the other ships, and boats went out hunting in the narrow lane of water that existed, but soon, under the force of the gale, the ice began to rise up over the shoals near the beach, and it became clearly evident that it would sweep across the beach itself before many days.

After a consultation of shipmasters and an exploration of a possible exit by water was made, it was found that not even the smallest vessel could be towed out under favorable wind conditions and that there was only a lead just wide enough for small boats for a distance of about eighty miles. Beyond the ice, seven whalers had been located which were safe and would stand by until the crews of the beleaguered vessels could reach them. On September 11, it was decided to abandon all the surviving frozen-in thirty ships, as they did not have provisions and supplies aboard to carry them through a winter and the ice would probably destroy most and possibly all of them. The prospect of the return of a northeaster to liberate them was now deemed virtually impossible—"not one chance in a million." Some ship's boats took provisions and some equipment and deposited them at Icy Cape about fifty odd miles away, and the exodus of all living persons in the fleet was planned to commence at the earliest possible time, as ice was forming on the channel water. At noon on September 14, every vessel set her ensign with the union down, the crews climbed over the rails and helped what women and children there were into the boats, and, when all was ready, a flotilla of some hundred and eighty boats carrying 1,219 souls headed away for the open sea and safety. At Icy Cape, a landing was made and big fires built. It was cold and snowing, and a tent was erected for the women and children. As the journey in overloaded small boats continued in the Arctic Ocean, a heavy wind sprang up, and the last stage of the journey to the seven waiting whaling ships became most hazardous. Only the *Daniel Webster* and the *Progress* were found at anchor, the others being under way, and all were pitching badly and difficult to approach in a heavy sea. However, every man, woman, and child from the frozen-in fleet of thirty-two whalers was got safely aboard the seven whaling vessels of the rescue fleet. The small boats were then cast adrift, and they soon smashed themselves to pieces against the ice-pack. On September 16, the surviving whalers, in an unprecedented rescue role, each with more than two hundred persons aboard, sailed for the Hawaiian Islands and arrived safely at Honolulu after a passage of 30 days, without a single life being lost during any stage of the journey and adventure. Chatterton, the British marine historian, referring to this major catastrophe to a whaling fleet, says:

> Thirty-two ships lost and everyone saved! How was it done? The answer is pluck and good seamanship. Those whaling men possessed both, and one of the surest tests of the latter is the bringing a boat alongside a big vessel in a jumpy seaway. There they came, some under oars, some under dipping lug, others rigged with jib and spritsail; in each case with the steersman controlling her standing with his oar at the stern as if going after a whale. Yes, the organization and handling of that open-boat flotilla is something to be remembered.

It was the custom of the New Bedford owners of the arctic whalers to go to Honolulu in the fall to meet the returning fleet and audit the accounts. One of the returning members of the crew of a frozen-in whaler said: "The owners were down on the beach to welcome. Instead of casks of oil and stacks of whalebone, we discharged twelve hundred sailors, penniless and with one shift of clothes each, before the expectant owners." New Bedford alone, it was said, lost over a million and a half dollars in the catastrophe, and in this greatest calamity of whaling craft in history the total loss was later reported at "$2,600,000 including 14,030 barrels of oil and 100,000 pounds of whalebone." But the spirit of Yankee whalemen was not daunted, for in the very next year twenty-seven (possibly twenty-eight) American whalers again steered up through Bering Strait, and in 1873 there were twenty-nine whaling vessels in this Yankee arctic fleet. The 1872 whalers surprisingly found the *Minerva* of the 1871 squadron afloat in Wainwright Inlet as sound in hull as on the day her crew left her, but all the other abandoned vessels had been crushed or wrecked, and many had been burned by the natives. On the *Minerva,* a lone sailor was found who had made the ship his home, with ample food and fuel during the winter. The ship had been thoroughly looted by the Eskimos, and the American would have been killed had it not been for the pity and interception of their women. The *Minerva* was manned by members of the crews from several of the 1872 Yankee fleet of arctic whalers, taken south, and used as a freighter to carry oil from the Hawaiian Islands to New Bedford.

Once more, in 1876, the Yankee arctic whaling fleet was overwhelmed. Twelve out of twenty ships and barks were lost in the ice, and the personnel did not fare nearly as well as the Americans who abandoned their vessels when in a somewhat similar plight in 1871 (five years before). The investment loss was placed at $800,000, but unfortunately the loss of life was heavy. Goode's Whale Fishery says: "Several men perished in journeying from one beleaguered vessel to another, apparently more safe, and many died on the toilsome, perilous march to the rescuing ships." Fifty-three remained on board their embayed vessels, rather than risk the travel on the ice in search of ships that were clear of the ice, and we read that these men "were unequal to the exertion necessary to save their lives" and that only "about three hundred escaped" from the twelve ice-imprisoned and battered vessels.

After the catastrophe of 1876 so closely following that of 1871, whaling sailing vessels with auxiliary steam power were generally advocated for the extremely hazardous Bering Strait-Arctic Ocean whaling grounds; they were handier and safer, and San Francisco was deemed a good rendezvous for such craft. In 1883 the whale fishery of the United States, according to the report of the commissioner of navigation, numbered 141 vessels aggregating 32,414 tons, but the national whaling press gave the number of vessels as 125 all told, with 19 of them hailing from San Francisco. At the end of the century, San Francisco owned 18 whalers—12 steamers and 6 sailing vessels.

The Adventuresome and World-exploring Yankee Whalers

The scope of the American industry was extended to the ancient Greenland grounds about 1760; to the Brazil Banks—first visited by the Nantucket brig *Amazon*—in 1774; to the South Pacific grounds beyond Cape Horn, to which at least six ships had been by 1791; and to the rich offshore grounds well west of the Peruvian coast, which were opened about 1818. The first whaler to return to port after operating in Japanese waters was the American ship *Marco* (Capt. Joseph Allen), which sailed from Nantucket in October 1819. Captain Allen was one of several whalers lying at Honolulu who received a tip from the Boston nor'west merchant skipper, Capt. Jonathan Winship, of the presence of whales in quantity off the islands of Japan and promptly raced west across the Pacific to hunt them. In 1821 seven other New England whalers were in that service, and it is said that in 1822 there were thirty American whale ships off that "inhospitable coast in those rough and stormy waters." In 1818, Capt. Geo. W. Gardner, of Nantucket, discovered the "offshore" west coast of South America hunting grounds between 5° and 10° S. Lat. and 105° and 125° W. Long., and by 1821 there were five recognized whaling grounds in the Pacific: (1) the "onshore," off the coast of Chile; (2) Gardner's "offshore"; (3) "country whaling" among the Pacific reefs and islands; (4) Indian Ocean; (5) off the islands of Japan.

The first American ship to take up bay whaling on the "greasy" hunting grounds in the South Island region of New Zealand was the *Erie,* which sailed from Newport, R.I., bound for the South Pacific in April 1832, found the new area in which whales abounded, and returned home in June 1835 with "200 barrels of sperm and 1,800 of black oil" and news of her discovery. In 1828 four Nantucket ships went to the east coast of Africa and hunted sperm whales around Zanzibar and the Seychelle Islands; one of the quartet, the *Columbus,* sailed into the Red Sea after whale. In the years following, Yankee whalers, after visiting the off-coast East African grounds, hunted in and crossed the Indian Ocean and used St. Paul and Kerguelen Land as stopping places on an easterly route to the Pacific, and they met among the islands American whalers that had rounded the Horn and were journeying west.

The northwest coast fishery (Gulf of Alaska) was opened up when the Nantucket whaling ship *Ganges* (Capt. Barzillai T. Folger) in 1835 captured the first right whale on the Kodiak (Alaska) ground. Penetrating still farther north into the frozen polar regions, the New Bedford whalers *Hercules* (Captain Ricketson) and *Janus* (Capt. J. K. Turner) took the first bowhead whales off the coast of Kamchatka (Siberia) in 1843. The *Hercules* (*Herkules*) reached home on April 3, 1845, with 1,900 barrels of whale oil, 200 barrels of sperm oil, and 12,000 pounds of bone; while the *Janus* returned to New Bedford on June 9, 1845, with 1,600 barrels of whale oil, 270 gallons of sperm oil, and 20,000 pounds of bone. At about the same time that Kamchatka whaling grounds were opened up, another New Bedford whaler, under command of Capt. George A. Coville, found fortune in the Okhotsk (Siberia) Sea, and a whale that yielded 150 barrels of oil was killed. There were three claimants to the honor of taking the first whale in this region, the other two being the American whaler *Huntsville* and a French ship named the *Asia,* which was commanded by an American. In this sea, it was said, bowhead whales were plentiful and "so tame and easily killed that slaying them was like slaughtering pigs in the barnyard at home."

In 1848 the bark *Superior* (275 tons) of Sag Harbor (Captain Royce) sailed through Bering Strait and attacked with success the great and dangerous bowhead whales of the Arctic. The *Superior* cleared Sag Harbor for the faraway Asiatic whaling grounds on October 22, 1847, and at the end of nineteen months was back home with all flags flying. She was "loaded to the hatch coamings with oil and carried bone wherever it could be stowed." The cargo was reported as "2,400 barrels of whale oil, 80 barrels of sperm oil, and 20,000 pounds of bone, the whole worth $33,945.30." It is said that the year following the passage of the *Superior* through Bering's "icy gates," 154 ships entered these waters. Starbuck estimated that this fleet was worth $4,650,000, and the "take" was said to have sold for $3,419,622. We are told that within three years of the time that the *Superior* showed the way to the whale fisheries north of Bering Strait, 250 whaling ships had drawn cargoes of oil from arctic waters, which region became the final hunting grounds of American whalemen. When whalers followed the *Superior* through the "icy gates" to hunt for whales in the hazardous waters of the Arctic, Melville was quite justified in writing that the Yankee oil fleet was "penetrating even through Bering's Strait and into the remotest secret drawers and lockers of the world." A summer cruise in the Arctic presumably pleased both owners and skippers during the era of exploitation, as the "midnight sun" enabled them to work their crews twenty-four hours a day.

The combing of tropical and temperate zone waters for whales gradually scattered the schools of cachalot, lessened their numbers, and made the survivors more difficult to capture. It was the growing scarcity of the valuable sperm whale that drove whalemen into the unknown and hazardous polar regions in search of right and bowhead whales and inaugurated the last phase of whale hunting. The arctic proved to be a much more profitable whaling ground than the antarctic zone. Although the oil from these varieties of whale brought usually only about half as much in the market as that of the sperm whale, the bone in their mammoth jaws proved very valuable, and for many years there was a great commercial demand for it. The bowhead and right whales were less aggressive and did not have the vicious toothlined jaw of the sperm whale, which was apt to be used with telling effect in the attacking and shattering of boats by a fighting whale; but these two species possessed even more damaging flukes than the sperm whale, and they were apt to use them viciously when aroused or in the "flurry" (death agony). When a whaling boat was smashed by a whale's flukes in polar regions, the exposure of the crew in the icy waters was likely to prove fatal even if the seamen did not drown.

Spears has said: "The whalemen were the frontiersmen of the sea. Their life was at least as rude and as dangerous as that of the homemakers who built log huts between the villages of hostile savages in the West. And on a whale ship as on the frontier, the man who had ambition and energy and endurance always won out at last."

The governments of Europe fitted out and dispatched vessels and squadrons at great expense to explore the oceans, coast lines, and islands of the globe. New England whalers, at their own expense and making good money in the quest, explored the Seven Seas more thoroughly and in a more practical, if less scientific, fashion. The command of many a foreign vessel, when about to announce proudly the "discovery" of a new island, harbor, or bit of land, was deeply chagrined to find that the "unpredictable Americans" and "exasperating Yankees" had been ahead of his expedition and had probably known of the location—and used it—for years. It has been said that the day of the explorers was the golden era of the whalers and of all American seamen. "Often adventures which Vancouver [the British explorer financed by his government] dedicates three chapters to, these men accounted unworthy of being set down in the ship's common log." In a volume of the American state papers is a list of more than four hundred islands in the Pacific that were admittedly discovered by New England whalers.

It was the venturesome, exploratory voyages of whaling ships toward the poles and around Cape Horn and the Cape of Good Hope into "the wide spaces of the Pacific" that led inevitably to bigger ships, with larger cargo space, to make such longer voyages of two, three, and four years profitable. As bigger and still bigger ships—drawing more and still more water—were demanded by the new phases of the whaling trade, the "handwriting was on the wall" which decreed that Nantucket's reign of leadership and dominance would soon be over; for its harbor had a sand bar at its mouth with only some eight or nine feet of water over it, and this naturally limited the size of vessels that could come into the port.

Steam Auxiliary and Modern Pelagic Whaling

Whalers with steam auxiliary power were felt by many experts to be very suitable for the arctic regions, where there was a constant danger of a vessel's being frozen in and crushed because of lack of wind and inability to maneuver. The first American steam whaler was the bark-rigged *Pioneer* of 212 tons register (Capt. Ebenezer Morgan, of New London), built for a transport during the Civil War and rebuilt as a whaler in 1865 by Williams and Havens, of New Bedford, who sent her to Davis Strait. The vessel reached home on November 14, 1866, with only 340 barrels of oil and 5,300 pounds of bone, and on her next cruise the steam power helped her but little, if any, for she was crushed in the ice.

Henry Hall, in his report to the government on the shipbuilding industry of the United States, dated November 1882, says:

> Within a few years, steam has been employed in whaling with great advantage. In July 1879 the propeller *Mary and Helen* was launched at Bath, Maine, for Captain Lewis of New Bedford, being the pioneer of its class. The vessel was 138 ft. long on deck, 30¼ ft. beam, and 16⅔ ft. deep in the hold, registering 420 tons, and was rigged with a full suit of sails, having 2,850 yards of canvas, but carried coal bunkers and a small engine with a screw propeller capable of driving her at the rate of from 6 to 8 miles per hour. The hull was made a trifle fuller to bear the increased weight. The *Mary and Helen* was built of oak, yellow pine, and hackmatack, cost $65,000 when ready for sea, and was a successful vessel. With her steam power she could push her way among the ice floes and was not dependent on a favorable wind while cruising in the fishing grounds.

This pioneer steam auxiliary sailing vessel, designed and built for arctic whaling and the first craft equipped with steam power deemed successful in operations, was dispatched by her owners, William Lewis and associates, from New Bedford on September 9, 1879, for the North Pacific. Capt. Leander C. Owen (formerly of the whalers *Three Brothers, Jireh Perry,* and *Contest*) was in command, and on October 10, 1880, the vessel was at San Francisco with 2,350 barrels of whale oil worth $16 per barrel, 265 barrels of sperm oil worth $28 per barrel, and 45,000 pounds of bone worth $2 per pound—a total "take" of $135,000. The *Mary and Helen,* upon the completion of her maiden whaling voyage, was sold to the United States Government, which used her in the search for the survivors of the Jeanette expedition, and she was accidently burned on November 30, 1881.

With the *Mary and Helen* afloat and en route to the arctic whaling grounds, her New Bedford owners had ordered a similar but slightly larger vessel of her builders, and in 1880 the steam whaler *Belvidere* of 440 tons was launched into the Kennebec and promptly completed and put in service; this vessel measured 140-½ ft. in length, 31-¼ ft. beam, and 17 ft. depth of hold and was deemed successful in operation. Upon the sale of the *Mary and*

Helen, Captain Lewis had a second steam whaler built bearing this name, and the vessel constructed in 1882 was of 508 tons register, 151 ft. in length, 31 ft. beam, and 17 ft. depth of hold; she was merely a lengthened *Belvidere,* but was heavily timbered in the bow as an ice-breaker. Bartlett & Son, of New Bedford, were responsible for an innovation when they equipped their whaling bark *Rainbow* (Capt. Bernard Cogan) with a 28-foot steam propeller cutter, which proved successful in the arctic fleet in 1887 both in capturing whales and in towing vessels.

Of late years, whaling has been carried on by power vessels of foreign ownership, and the hunting grounds have been generally toward the poles. It has been authoritatively said that "tremendous North European whaling ships of factory type are rapidly completing the job of thoroughly exterminating the whale." In 1937 the United States entered into a treaty with other principal maritime nations whereby the taking of whales is regulated so as to permit a continuance of the industry through conservation of its quarry; it is significant that Japan declined to participate in the treaty.

Dalzell, in 1940, wrote: "Whales are still hunted with steam and dynamite; indeed the kill for 1939 was the largest in history. Friends of the whale fear his extermination is in sight. The oil is used in oleomargarine and has a military use as constituent of glycerine. But the industry is not peculiarly American. The air of Nantucket and New Bedford is no longer fortified with the tang of tried-out blubber." Of late years, pelagic whalers, or big, expensive, floating power-driven steel whale factories, capable of embarking and treating the whale in the open ocean have been generally employed. Whales breed slowly, and although certain governments have regulations in effect to endeavor to save them from extinction, no regulations deal with operations in the open ocean, and the end of whaling seems to be in sight.

The leading European whaling interests operate through a fleet headed by a large "mother," or factory, ship, and the hunting units that have replaced the old oar-propelled small whaleboats are as large as seagoing tugs and carry a small cannon in the bow. This cannon shoots an explosive harpoon, which sinks deep into the whale. Compressed air is then pumped into the carcass until it floats like a balloon. It is then towed to the floating factory and drawn aboard through an opening in the stern, up an incline, to the cutting room. The modern process of utilization is such that "every ounce of the oil is salvaged," and every other part of the whale becomes a by-product that is turned to commercial account. The whales being taken by modern whalers are primarily the sulphur bottom and finback species, scorned by the old-time whalers because of the thinness of the blubber, the general poorness of the catch, and the habit of sinking when killed; such whales in the golden era of whaling, with wood sail and small hand-manipulated boats and equipment, were deemed "not worth the time and trouble to kill."

The interest of the United States in whaling practically terminated with the end of wood merchant sail, and America has taken no active part in the modern impressive and destructive pelagic whaling, although a few small power craft have been used for whaling on the Pacific Coast. The great American whaling saga is a thing of the past. Gas, petroleum, electricity, new inventions, the changes in fashions, the increased cost and difficulties of whaling, and the ruthless slaughtering of the huge mammals—the butchery of extermination—have put an end to "the most adventurous peace-time occupation ever devised by man."

The Rise and Fall of United States Whaling

Whaling—and the fisheries in general—has been from early days a tariff-protected American industry. Under the act of April 27, 1816, a duty of 25 cents per gallon for sperm oil and

15 cents for whale oil was assessed on all foreign importations. The specific duty was changed to an ad valorem duty in later years, but substantially the same measure of protection was given. The market value of whaling products advanced with the years notwithstanding the competition of cheap and easily obtainable petroleum and gas. Kerosene gave a good, economical light, but for many purposes whale oil was deemed preferable. Whale oil and bone gained in value as the whaling industry waned, and whaling ships gradually disappeared from the ocean as did the wood sail in other departments of the American merchant marine.

Whaling ships grew larger and more expensive with the years. When the American Constitution was adopted, a whaling ship of 2,000 barrels in capacity, fitted out for a two-year cruise, represented an investment of eleven or twelve thousand dollars. At the end of the clipper shipbuilding decade and immediately prior to the Civil War, a moderate-sized whaler equipped for a similar voyage involved an investment of some sixty thousand dollars or more. Meanwhile, whales had become scarce, "shy," and difficult to find and catch, and the time required for a successful voyage had greatly increased—practically doubled. Moreover, as the years advanced, it became impossible to obtain crews for whalers, and the quality of men obtainable declined deplorably. Deterioration of crews was an important factor contributing even more to the end of whaling than to the end of American merchant sail in general. America's whaling had risen not only to prominence but also to unquestioned world leadership because the ships were manned with venturesome and daring, courageous and resourceful, ambitious and intelligent American-born men and youths, with possibly a few coast-bred Indians and Negroes mixed in; but all were of good, stalwart stock and made stout, willing, and homogeneous crews unequaled in ability and practical achievement in the annals of sail.

In the early days, American whalers were manned to a great extent by youths who were spurred on by the lure of the sea and a gambler's hope for wealth and by a love of adventure, of romance, and of anticipated worth-while achievement. The following article in a New York newspaper printed in early April 1831 is of interest:

> Hudson New York March 29
>
> Huzza for the *Mansfield*—The gallant ship *Alexander Mansfield* which fitted out of this port last May for a two years' voyage has returned in a short space of nine months and a half with a full cargo having on board 2,020 barrels of whale oil, 180 br. sperm oil and 16,000 lbs. whale bone. On Saturday evening [March 26, 1831] she arrived at this place and safely moored at the company's dock amidst the loud huzzas of the citizens, and the firing of cannon. . . . The *Mansfield* will be immediately refitted for a second voyage. . . . We have also at the company's docks a beautiful, substantial vessel of about 1,800 barrels burthen, called the *Washington,* which is fitted for a whaling voyage. Such is the spirit of the young men in this vicinity that there are already more applications for berths than will be wanted to man her.

It was because the whalemen "were of the boldest and most enterprising men of the nation that the fishery was spread over unknown seas and to the uttermost parts of the earth within a period of time that was astonishingly brief." Unfortunately, however, the early cooperative spirit of Nantucket did not persist and prevail in the golden era of whaling, which New Bedford oil barons turned into an age of increasingly unscrupulous exploitation and abuse, with the capitalists, who were making "from 25 to 50 per cent per year clear profit on their investment in the ships," stooping so low as to increase their gains avariciously by deliberate robbery of the seaman whose hard and risky work at sea was primarily responsible for the "take" and the profits. Young Americans with enterprise and enthusiasm gradually became disillusioned and increasingly disgusted with whaling in the thirties and forties, and when the supply of American youth failed in the forecastle, the supply of men for the cabin was lessened and a shortage of competent and experienced American whaling officers and skippers detrimentally affected the whaling guild and the counting room. When life became unendurable in the forecastle of a whaler, the berth of the higher officers on the ship was scarcely worth seeking, and during the latter part of the "golden era," even the skippers felt the pinch of the oil barons, who grabbed the slop-chest rights, and a captain's 1/18 lay on a good average "take" of $16,000 a year gave him an income of only $75 per month. It is no wonder that as some of the American merchant shipowners felt the lure of the development of the West, lost their sea habit, and turned from risky adventures afloat to more promising and secure investments ashore, ambitious and industrious young men turned their thoughts and applied their energies in the same direction. Spears, in THE STORY OF THE NEW ENGLAND WHALERS, truly says:

> The old-time shipowners learned the business astride of the weather-topsail yard-arm. They looked the gale in the eye. . . . In the old days we had, and we had to have, sailors before we had ships. The glory of the Golden Era of the Yankee clipper as of the Yankee whaler, was due to the superiority of the Yankee sailor—the young men who waded barefooted through the snow in order to secure opportunity for a career that began in the forecastle and ended in the counting room. And the American flag will never regain its old-time place upon the Seven Seas until the ambitious, adventurous young American can find a more attractive career afloat than ashore.

In the fifties, conditions changed rather abruptly in whaling, with the demand for seamen for clipper ships and the lure of California gold; about this time, whales became scarce, and the profits from whaling voyages grew more precarious as the forecastles of whalers became filled with foreign riffraff, the "flotsam of the world," and harpooners (or boat-steerers) and officers drifted into other lines of marine merchant service. For years, American whalers operated with polyglot foreign crews—Portuguese, Negroes, Hawaiians, South Sea Islanders, and the scum of European ports, and it was said that an American whaler was "a kaleidoscope of colors as well as a babel of tongues"; but whereas many of the Portuguese and the Hawaiians developed a surprising aptitude, the quality of both command and crew declined, and the substitution of aliens for Americans caused an inevitable, pronounced drop in efficiency of operations and in the profits of the trade.

The War of the Revolution dealt a terrific blow to American whaling, and when the war began, the American fleet, it was said, consisted of "three hundred and sixty-five vessels of an aggregate of about 33,000 tons, manned by about five thousand seamen." The annual product of this fleet was estimated as at least "45,000 barrels of spermaceti oil and 10,000 barrels of right whale oil and of bone nearly or quite 75,000 pounds." Head sperm oil sold for about $150 per ton, or $18.75 per barrel, ordinary sperm oil for $100 per ton, right whale oil (which was of a darker color and had a rank odor) for $50 per ton, and whalebone brought about 15 cents per pound.

In early post-war days, the U.S. whale fishery was not deemed of sufficient importance to be classed separately as were the vessels of the cod and mackerel fisheries, and the official reports of the U.S. commissioner of navigation, which give marine tonnage figures for each year from 1789 on, first mention whale fisheries in 1794 and report a total of 4,129 tons for "enrolled" vessels in the whaling trade. This dropped to only 763 tons in 1798, but by 1803 the tonnage was up to 12,390 tons (11,247 tons "registered" and 1,143 tons "enrolled"). Whaling tonnage dropped pitifully during Jefferson's pacifistic administration, and the embargo drove it down so that it was only 3,589 tons in 1810. In 1814 the War of 1812 had caused it to drop to a record low of only 562 tons; it reached 16,750 tons in 1818 and 32,386 tons in 1819, when it had apparently recovered its pre-Revolutionary tonnage importance and vigor. The tonnage passed the 50,000-ton mark with 54,801 tons in 1828, the 100,000-ton mark with 101,636 tons in 1833, and the 150,000-ton mark with 157,405 tons in 1841. In 1840 the United States exported four and a half million gallons of whale and half a million gallons of sperm oil and two million pounds of whalebone. From 1845 to 1859 (the year of the drilling for mineral oil), the U.S. registered whaling tonnage was around the 190,000-ton mark, and the decline commenced just prior to but was rapidly accelerated by the Civil War.

In the decade ending with 1861, the United States whaling business was at its peak; the annual "take" of whale oil ranged from 84,000 to 328,000 barrels, of sperm oil from 69,000 to 103,000 barrels, and of whalebone from 1,000,000 to 5,500,000 pounds. The prices during this period fluctuated, we are told, "from 44-1/8 to 79-1/2 cents per gallon for whale oil, $1.207 to $1.772 for sperm oil, and from 32 to 96 cents per pound for whalebone." The whaling fleet consisted of 594 vessels in 1843 and 668 vessels in 1854, but in 1860 a recession had set in from the banner year of 1858, and the number of whalers had declined to 596.

It was during the period of the Civil War that the whaling and general deep-sea fishing industry of the United States definitely collapsed, and never after that time did the industry make even a halfhearted attempt to return to its former glory. In the late fifties, there were about 200,000 registered tons of shipping in the whaling trade, and in 1862 there were well over 190,000 tons employed in deep-sea fisheries other than whaling. By 1867 the combined tonnage in the fisheries (excluding small craft under 20 tons) had dropped to only 120,000 tons (whaling 52,384 tons, general fisheries—cod, mackerel, etc.—68,207 tons), and the once conspicuous, dominant, and profitable whaling fleet gradually but surely disappeared.

By 1861 and the start of the Civil War, the whaling fleet had definitely commenced to decline in tonnage primarily because of the wholesale butchery of whales for over a century and a half (which had naturally tended toward extermination), the increased cost of and less profitable return from whaling, the necessarily longer voyages of whaling ships, and the great difficulty of obtaining competent crews. By 1861 the whaling tonnage was 52,860 tons below the 1858 record high tonnage of 198,594 tons, a drop of 27 per cent in three years, and 24 per cent less than the average tonnage of the whaling fleet during the years 1852-1858 inclusive. The average American registered whaling fleet tonnage during the seven-year period 1852-1858 was 191,400 tons, and the decline with the years was as follows:

Year	Registered Tonnage	Percentage Decline from Tonnage of 1852-1858	Year	Registered Tonnage	Percentage Decline from Tonnage of 1852-1858	Year	Registered Tonnage	Percentage Decline from Tonnage of 1852-1858
1859.......	185,728	3	1864......	95,145	50	1880......	38,408	80
1860.......	166,841	13	1865......	84,233	56	1885......	25,184	87
1861.......	145,734	24	1867......	52,384	73	1890......	18,633	90
1862.......	117,714	39	1870......	67,954	65	1895......	15,839	92
1863.......	99,228	48	1875......	38,229	80	1900......	9,899	95

At the close of the Civil War, energetic efforts were made to put a large whaling fleet back on the seas. In 1866 the tonnage engaged in this service was about 21,000 tons over that of 1865, but this was promptly followed the next year by a drop in tonnage of 50 per cent. In 1868 about half of this "flop" in tonnage had been put back in whaling, but from 1868, when the registered tonnage of the whaling fleet was 78,486 tons, the decline was steady and fairly uniform to the end of wood sail, to the end of the century (being 9,534 tons in 1901), and to the end of American whaling.

The drop in American whaling activities during the Civil War was very conspicuous due to the war itself notwithstanding the fact that market prices for both whale oil and bone sharply advanced, and the "take" of whalers returning to port proved unprecedently profitable. The deep-sea whalers—all of which were northern owned—in both the Atlantic and Pacific suffered greatly from the depredations of Confederate armed raiders. The shipping activities of the United States were detrimentally affected to an amazing extent by two factors: (1) The inability of the North, or Union, to render any measure of armed naval protection to its merchant fleet and marine deep-sea trade or its unconcern certainly left them, without defense, "to shift for themselves." (2) The fear of shipowners to send their vessels to sea because of the highly publicized presence of a few Confederate British-built and manned commerce raiders on the trade routes and the jacking-up by the British of insurance rates resulted in the scurrying of American vessels to neutral harbors and, as the war continued, in forced sales to foreign owners and "the flight from the flag." On Sunday morning, June 19, 1864, when the Confederate armed screw raider *Alabama* rounded the mole, or breakwater, at Cherbourg, France, and headed to fight the U.S.S. *Kearsarge,* which was lying in wait for her seven miles away, Capt. Raphael Semmes mounted a gun carriage and, in addressing his crew and futilely urging it on to victory, said:

Officers and seamen of the *Alabama!* You have at length, another opportunity of meeting the enemy—the first that has been presented to you since you sank the *Hatteras* [an out-dated, clumsy, and poorly armed Union-purchased side-wheel merchant ship unfit to be a man-of-war sunk some 20 miles off Galveston, Texas, during the night of January 11, 1863]. In the meantime you have been all over the world, and it is not too much to say that you have destroyed and driven for protection under neutral flags one half of the enemy's commerce, which at the beginning of the war covered every sea. This is an achievement of which you may well be proud. . . . The name of your ship has become a household word wherever civilization extends.

The *Alabama* captured sixty-eight merchant vessels, released three of them, bonded eleven, sold one, commissioned one as a cruiser, and burned the other fifty-two. The first time the Confederate-British cruiser encountered a real Union warship, she was decisively beaten and sunk by a vessel of approximately equal size and power. But from the date that the British S.S. *Enrica* became the Confederate warship *Alabama* (August 24, 1862) until she sank beneath the waves from the effect of Yankee guns (a period of 21 months 26 days), the much-vaunted "Falcon of the Seas" had met only one Union warship during all her peregrinations at sea aimed at destroying the defenseless United States merchant marine. The Union warship that she encountered was not hunting her or protecting Union shipping, but was one of a squadron at Galveston engaged in naval operations that the *Alabama* enticed by deception away from her delegated duties.

It is said that "Confederate cruisers damaged United States whalers to the amount of £310,000 including £100,000 oil," but this is only a small percentage of the damage done the American whaling industry, direct and indirect, and losses to United States whaling were only an insignificant part of the total suffered by the American merchant marine. Another tonnage loss to the American whaling fleet during the Civil War resulted in the acquiring and sinking of some forty-six whalers by the Union, or Federal, Government, which were loaded with stone and sunk in attempts to blockade the entrances to southern harbors. Of the two big "Stone Fleets" purchased in 1861 and sunk in the approaches to Charleston Harbor, the first contained twenty-four and the second fourteen whalers.

The Confederate commerce raiders, built and backed by Britain, destroyed American whalers with evident gusto and much satisfaction. The famous *Alabama* commenced her first cruise by capturing and destroying, soon after leaving England, nine American whalers working the Azores hunting grounds in the autumn of 1862, and she destroyed a dozen Yankee whalers, all told, in the Atlantic. In July 1864, the S.S. *Florida,* built on the Mersey, England, as was the *Alabama,* burned the 331-ton New Bedford whaling bark *Golconda* in the North Atlantic as she approached home with 1,240 barrels of sperm, 600 barrels of whale oil, and a good load of whalebone aboard, a part of which was being shipped home from the whaler *Gipsey,* later to be destroyed by the Confederate raider *Shenandoah.*

The most destructive work on the American whaling fleet was performed by the Scotch composite-built steamship *Sea King* of 1,160 tons, 450 horsepower, and 10-knot speed—renamed the *Shenandoah.* This vessel, British-built and British-manned, sailed from London October 8, 1864. She was laden with coal and cleared for Bombay. Near Madeira, she took aboard an armament, ammunition, and stores from the British steamer *Laurel,* which had cleared from Liverpool, and the British S.S. *Sea King* was quickly transformed to the Confederate cruiser *Shenandoah.* Captain Waddell of the Confederate Navy, who had been a passenger on the S.S. *Laurel,* took charge. The *Shenandoah* sailed for the North Pacific, and her orders were to intercept and destroy the peaceful, unarmed, unsuspecting, and helpless "Yankee whaling fleet" bound from the arctic hunting grounds to Oaku with the products of the summer cruise. The Confederate-British raider destroyed her first whaler, the bark *Edward,* off Tristan da Cunha. After being conditioned, provisioned, and fueled at Melbourne, Australia, the *Shenandoah,* further fortified with British subjects and supplies, steamed north "to wipe out the Yankee whaling fleet." At Ponape, three American whalers and one Hawaiian believed to be an American were captured and burned. One whaler, the *Abigail,* twenty-three months out from New Bedford, was destroyed in the Okhotsk Sea. Later followed the capture of three whaling ships and six barks, but on June 28 the "pirate" *Shenandoah* bagged eleven Yankee whalers in seven hours in the Bering Sea. This was followed by the taking of two more whaling ships and three barks. Two months after Appomattox, the *Shenandoah* reached her farthest point north and turned south when blockaced by ice "at the hem of the Arctic Circle." Word was received of the complete collapse of the Confederacy from a British bark on August 2, 1865. The *Shenandoah* headed for England and anchored in the Mersey on November 6 after an absence of approaching thirteen months, during which she had traveled over 58,000 miles at sea without making any contact with a combatant enemy; during this cruise the Confederate-British pirate raider had taken thirty-eight prizes—of which thirty were whalers—and 1,058 prisoners.

There is no doubt that the *Sea King* was fitted out by the British expressly to destroy the American whaling fleet in the Japan Sea and Arctic Circle, where it had always been a most annoying and formidable barrier to the trade prestige of the "Mistress of the Seas." Even though the fast British steam-powered East Indiaman, armed with British guns and manned by British sailors, did go "through the formality of lowering the British flag and raising that of the southern Confederacy and of changing her name from the *Sea King* to the *Shenandoah*" before she sailed on her destructive mission to the North Pacific, she remained thoroughly British, and the depredations of the camouflaged British destroyer on unarmed American trading vessels continued after the Civil War ended until Captain Waddell, fearful that he would be branded a pirate, "scuttled away to the shelter of the British flag." As Marvin says, "It is some consolation that the ravages of the *Shenandoah* entered into the *Alabama* claims and figured into the $15,500,000 award of the Geneva arbitration" as reparations to be paid by Britain to the United States for damages to American shipping wrought by British ships during the Civil War.

George W. Dalzell, in THE FLIGHT FROM THE FLAG, says:

> There was never a time after the [Civil] War when the whaling tonnage afloat was more than half of that of 1860. The *Shenandoah* merely accelerated a decline which began with the discovery of petroleum in Pennsylvania in 1859. Kerosene and its derivatives rapidly supplanted whale and sperm oil; umbrella ribs and fishing rods were made of steel or bamboo; corsets later went out of style. What remained of the Pacific fleet was obliterated by Arctic ice in 1871 and 1876.

According to the "Whalemen's Shipping List" of March 5, 1901, the American whaling fleet consisted of forty vessels, or only 1/15 the number of 1846, with an aggregate tonnage of 8,746, or only 1/22 that of 1846 and 1/23 that of the record year of 1858. The number of vessels and the tonnage employed in whaling were steadily lessening from these reported figures, the decline in tonnage for the first year of the twentieth century being 18 per cent from that of the preceding year. New Bedford, Mass., at the turn of the century (1900), still held first position in the industry, having fourteen square-riggers and eight schooners aggregating 4,250 tons (practically one-half the national total) in the trade, and San Francisco held second place with twelve square-riggers and one schooner totaling 3,673 tons. The only other ports with registered whalers were Provincetown, on Cape Cod, with four small schooners aggregating only 438 tons, and Boston, Mass., with one bark of 385 tons. The logbook of this one surviving Boston whaler, the *Josephine,* showed that the whaling trade to the end was beset with its traditional perils. In three years of cruising, the bark had secured the "moderate catch" of 2,000 barrels of sperm oil, but during the period she had lost a junior mate in a fight with a whale and had lost her cooper; a sailor and the shipkeeper had been disabled and obliged to quit their jobs, and a boat-steerer, or harpooner, had died of disease. It is evident that the scant cargoes of later-day whalers were purchased at the same high cost as those of the days when the whaling industry was in its prime (1830-1860), or from the days following the end of the War of 1812 and Napoleon's overthrow to the American Civil War.

William H. Clark, in SHIPS AND SAILORS, says that American whalers faded out of the picture entirely due to three major influences or reasons:

First: The discovery of kerosene as a cheap and abundant lighting fuel, which greatly limited the market for whale oil.

Second: A general decline in American marine activities, which caused both men and capital to be withdrawn from whaling.

Third: Rising costs and diminishing profits, with the need of much greater capital to buy and equip a whaling ship, and a lessening of the quantity of whales. ("While in the early days whales were abundant and easy to kill, at the end they were very scarce and hard to approach.")

Clark states that a decline in whaling tonnage, starting at the end of the fifties, was accelerated by the war between the states and that as practically no new ships were built in the sixties, seventies, eighties, and nineties to replace those lost, tonnage declined steadily with the years. Clark mentions an average decline of a thousand tons per year. (Actually, it was 2,124 tons per year between the years mentioned by him, i.e., 1865 and 1900; but it was 2,732 tons per year during the thirty-five-year period 1866 and 1901, and the average annual decrease in tonnage was 4,397 tons per year between June 30, 1858, and 1901.) In conclusion, Clark says:

> During a period of 100 years in which Yankee whaling rose to magnificent heights, it produced real sailormen, it gave support to more than 100,000 men, and it founded many a fortune; fortunes which, when the trade declined, were invested in railroads, textile mills, metal production, and many other activities—aiding greatly in the industrial development of the nation.

Winthrop L. Marvin, in THE AMERICAN MERCHANT MARINE, wrote in 1902:

> The pursuit of the leviathan in deep-sea ships all over the globe . . . was for many years an important source of national wealth, and it bore a part and a strong part in the moulding of the national character. It meant for the men engaged in it long exile from home, arduous labor, habitual self-denial, acute peril, often dreadful suffering. But there are better things for men than mere ease, comfort, and security, and it may well be questioned whether the sons of the old whalemen now earning their livelihood in factories or shops are equal to their fathers in moral and mental stamina, and equal to them as useful citizens of the republic.

Whale oil had its day as the nation's principal illuminant and lubricant, having displaced candles and animal liquefied fats in popular favor and practical utility. For generations, it had virtually no competition in either quality or economic use, and the supply kept pace with the demand. The first local public service companies came into being early in the nineteenth century. Rembrandt Peale, painter and professional showman, was responsible for organizing America's first gas company in 1817 to supply the city of Baltimore. In 1822, Boston's first gas company was formed, and in 1825 the New York Gas Light Company (organized in 1823) was in operation. In the forties of the nineteenth century, it was said that whaling was the "most adventurous and flourishing of American industries," with Yankee seamen who "knew no fear" cruising the Seven Seas "in a primitive and exciting warfare against the whale."

At the end of the 1850's, petroleum, discovered in Pennsylvania, was commercially produced to replace whale oil as the illuminant most commonly used, and in the sixties, the Civil War, coupled with other factors previously discussed, threw whaling from a prime to a secondary industry, and whale oil in quantity was no longer in great demand as an illuminant, although it was a prime lubricant. Still later, electricity displaced gas for lighting purposes as gas had displaced mineral and whale oil. Yet American whalers, in gradually decreasing numbers, continued to make their "long and incredible" voyages, and for a time their cruises ptoved to be quite profitable—but not because of the oil they secured.

Around the turn of the century, women's fashions changed, and the wasp-like form and extremely small waist became the style. To achieve this "ideal" of the day, tight lacing was necessary, and for corset stays, it was found that nothing could equal whalebone taken from the ridges in the mouth of the whale. Soon the whaling industry depended entirely for its profits upon the sale of whalebone to corset manufacturers, umbrella makers, etc., and by 1906 the price of whalebone had risen from some $400 to $600 per ton to $10,000 per ton (it was as low as $25 per ton in the nineteenth century). But the wasp, or hourglass, figure, like all female fashions, did not last; common sense reasserted itself, aided by conditions brought about by the World War of 1914-1918, and proper consideration for the health and comfort of women tabooed tight lacing. These factors, coupled with the substitution of steel for bone for many purposes, spelt the end of the American whaling industry.

Modern mechanized whaling is virtually in the hands of the Norwegians, and the Antarctic Ocean has for many years furnished profitable hunting grounds. Whale oil is used chiefly in the manufacture of soap and paint, but also for burning, for batching jute, for quenching steel plates, for dressing leather, and for lubricating purposes. The flesh of the whale is made into guano, and the bones are ground into fertilizer. Even the water in which the blubber has been "tried out" goes into the making of glue. Whale meat is sold as an edible in several countries and is sometimes canned, but old Yankee whalemen preferred their "salt horse," their hazardous hunting in oar-propelled small boats, and their greasy jobs on a relatively small wood sailing craft that was their home for years and the only mother ship used as they prepared, stored, and carried their "take" of oil and whalebone to market. Whaling as a branch of American merchant sail (or of the United States merchant marine) is gone forever, and the perilous, courageous sea life of the Yankee whalemen of the eighteenth and nineteenth centuries was as grim in actuality as it is glamorous in retrospect.

The Seal-skinners—an Offshoot of the Whalers but Connected with the Northwest-China Fur Trade

Seal hunting was an offshoot of the whaling industry of the country. When Capt. Gamaliel Collins and Capt. David Smith, both of Cape Cod, went to the Falkland Islands in the far South Atlantic in 1774 in search of whales, they found there "thousands of seals, both hair and fur, and sea lions without end." The oil of these animals being deemed of good quality, the whalers carried some of it back home together with the skins, "which were found to serve well for covering trunks." (The fur-seal as well as the hair-seal skins were evidently used for this purpose.) After the Revolution, about 1783, a Madam Haley, of Boston (sister of Jack Wilkes and later the wife of Patrick Jeffery, a Boston merchant), fitted out and dispatched the ship *States* to the Falklands in search of fur-seal and sea-elephant oil. The vessel returned north with some thirteen thousand skins, which sold for $6,500 in New York. Some of them were carried on a venture to China, where they proved acceptable and, the trade being profitable, encouraged other movements of sealskins in that direction, and the "seal-skinners" became identified more with Pacific sea otter and fur traders than with whalers.

In 1790 two ships owned by Elijah Austin, of New Haven, sailed to the Falklands for seals. One of the vessels, commanded by Capt. Daniel Greene, took a full cargo of sealskins direct from the Falkland Islands to Canton, where they were sold "at a big profit," the skins being "highly prized and in demand in China." It would seem that the price realized for sealskins in China was relatively low—only a dollar or two per skin at Canton; but the number that could be obtained by a single ship engaged in the trade was so large and the ease of obtaining so pronounced that the business proved very profitable from the start. Seals did not have to be hunted, for the seal-skinners could obtain them in big quantities when found merely by landing on a beach and clubbing the helpless animals to death.

The whaling brig *Betsey* of Stonington, Conn., of about 100 tons burden, made two sealing voyages in the early nineties of the eighteenth century to the Falklands and the "Southern

Seal Islands." Both of the seal-hunting cruises of the *Betsey* proved highly profitable, and it is said that one of the voyages netted $52,300, which was "almost ten times the real worth of the little vessel and her outfit." The *Betsey's* success as a sealer naturally brought many other vessels into the trade, and Connecticut was more conspicuous and interested in the business than any other state.

A voyage of the seal hunter *Neptune* of New Haven (Capt. Daniel Greene) which lasted from November 20, 1796, to July 11, 1799, a period of 2 years 7 months and 21 days, is described in Goode's Fishery Industries of the United States. The ship was of 353 tons register and carried a crew of thirty-six all told. She proceeded first to Cape de Verde Islands, where she procured salt "sufficient to preserve all the skins the ship could carry," and then sailed to the Falklands, where she arrived February 22, 1797. The *Neptune's* men promptly commenced "the building of a shallop for working shoal waters." They had trouble with Spaniards on the Patagonian coast, but did not let crooked and bumptious foreign officials interfere with their quest for seals. After the holds were filled with catches at Juan Fernandez and Mas-a-Fuera, the *Neptune,* on June 9, 1798, sailed for Canton, where she sold her skins at $2.00 each and used the proceeds in buying Chinese goods marketable in America. On reaching New York, the *Neptune's* cargo was sold for $260,000.00, on which were paid customs duties of $55,438.71. The ordinary able seamen aboard received a lay of $1,200.00 each from the proceeds of the voyage.

Seals were gradually found and killed for their skins on many islands off the southern tip of the American continent, including the South Shetland Isles, Desolation Island in the Pacific near Cape Horn, and South Georgia Island, east of the Falklands. Prince Edward Island, well south of the Cape of Good Hope, Crozet Island, well south of Madagascar, and the Juan Fernandez Islands (about 33-34° Lat. S. and 80-81° Long. W.), off Valparaiso, Chile, became part of the designated "Southern Seal Islands," and Mas-a-Fuera, the westerly island of the Juan Fernandez group, became the center of seal-killing (for it could not be called "hunting"). Seals were found on other islands off the Chilean coast, on St. Paul and Amsterdam islands in the Indian Ocean, on the Farallones, and on Santa Catalina Islands off the California coast, and all were visited before 1810.

Capt. Nathaniel B. Palmer, of Stonington, Conn., at the age of nineteen, was the second mate of the brig *Hersilia* (Capt. J. P. Sheffield) engaged in the Falklands' seal trade, with instructions to search in the South Atlantic for another group of uncharted islands that were believed to exist. When found through Palmer's cleverness and the unintended help of the brig *Espirito Santo* of Buenos Aires, these islands became known as the South Shetlands. In 1821 there were gathered at this island group many sealers, five of which, under Commodore Isaac Pendleton, belonged to the Stonington South Sea Company, and one of the fleet was the little tender *Hero,* a sloop "but little rising forty tons," with young Nat Palmer in command. From a mountain top, Captain Pendleton imagined one day that he saw the loom of land far to the south, so he sent Palmer exploring in the *Hero,* with the result that land of "continental dimensions"—part of the antarctic continent—was discovered (some twenty years before the British rediscovered it). Pendleton had hoped to find new seal rookeries to exploit, but Palmer, after an extensive survey, found no seals and, when heading back for the South Shetlands, ran into a heavy fog and hove to. When the fog finally lifted, the little *Hero* was found lying becalmed between two foreign warships, which proved to be discovery ships sent out by Emperor Alexander of Russia, and the South Shetlands were in sight. Capt. E. Fanning, of Stonington, in a letter written to Secretary of the U.S. Navy J. N. Reynolds in 1828 described subsequent events, in part, as follows:

> The Russian commodore [Bellingshausen] despatched a boat and officer with an invitation to Capt. Palmer of the American vessel to come on board which he readily accepted. When he arrived on the commodore's deck he was asked what islands those were in sight, and if he had any knowledge of them. "Yes, sire" replied Capt. Palmer, "those are the Shetland Islands. I am well acquainted with them and a pilot here. I belong, sir, to a fleet of five sail out of Stonington, under the command of Capt. B. Pendleton, whose ship is now at anchor in a good harbor in that island;

and if you wish water and refreshments, I will pilot you in, and my commodore will be much pleased to render you any assistance." "I kindly thank you," said the Russian, "but previous to being enveloped in the fog we had sight of those islands and concluded we had made a new discovery; and behold when the fog lifts, to our utter surprise, a beautiful little American vessel, to all appearances in as fine order as if she had but yesterday left her port in the United States, is discovered alongside of my ships, the master of which readily offers to pilot my vessels into port, where his commodore will tender me every aid and refreshment! We must surrender the palm of enterprise to you Americans," said the Russian commodore. "Sir, you flatter me," replied the American captain, "but there is an immense extent of land to the south and when the fog is entirely cleared away, you will have from your masthead a fine sight of its mountains." "Indeed," observed the commodore, "you Americans are a people that will be before us; and here is, now, in your information and in what is now before my eyes, an example and pattern for the oldest nation in Europe. Where I expected to make new discoveries I find the American flag, a fleet and a pilot. . . . I name the land, which you have discovered Palmer land, in your honor. But what will my august master say, and what will he think of my two years cruising in search of land that has been discovered by a boy, in a sloop but a little larger than the launch of my frigate."

The maps of the world to this day show the peninsula of the antarctic continent running north from about 70° Lat. S. in the direction of the South Shetland Islands, the Falklands, and Cape Horn as Palmer Land or Palmer Peninsula. There is also a Palmer archipelago. Capt. Nathaniel B. Palmer (1799-1877), in whose honor part of a continent has been named, was a fine type of American merchant seaman and a leading commander in the days of the packet and early clipper ship eras.

The United States was a pioneer in the South in what is designated as seal fisheries and seems to have paid practically no attention to the taking of seal in the North. The catch obtained was by means of "land sealing," and the skins of the fur seal alone seem to have been taken, but later oil was obtained from the elephant seal. Weddel estimated that in the two seasons 1820-1821 and 1821-1822, 1,520,000 fur seals were taken from South Georgia and the South Shetlands alone and that some ninety vessels, about half American and half British, worked the southern grounds. Catches of 15,000 to 20,000 seals per vessel were not unusual, and, therefore, it is not surprising that the sealing rapidly disappeared.

By 1825, American seal hunting became unprofitable, as seals seem to have been virtually exterminated on the island grounds, but a fleet was kept cruising in southern seas for sea-lion oil until 1870. In that year, sealskin hunting was renewed, and three vessels secured eight thousand skins. In 1871 eight vessels obtained fifteen thousand good fur seals, and in 1876 the schooner *Florence* (Captain Athearn) caught seals whose skins sold for $100,000. Between 1871 and 1880, the number of skins taken was 92,756, but the hunt for seals again became unprofitable. Whereas 1880 saw the end of the American seal-hunting fleet, a few vessels continued for some years a profitable quest for sea-lion oil.

Deep-Sea Fisheries—"A Yankee Monopoly"

The deep-sea fisheries of the United States were conducted entirely by New Englanders and were often referred to as "a Yankee monopoly" as was the adventurous business of whaling. Adam Seybert, in STATISTICAL ANNALS (1818), wrote: "Our fishermen have been almost exclusively confined to the New England states; of these Massachusetts had the greatest share. . . . In the cod fishery no vessel (except 48-½ tons returned for New Jersey in 1803 and 66-¼ tons for Virginia in 1796) was owned south of New York." It was not without cause that the State of Massachusetts placed the codfish conspicuously on its coat of arms and became popularly known as the Codfish State; it would have been justified, however, in adding a spouting whale if it had elected to do so, for in both branches of deep-sea fisheries Massachusetts held undisputed leadership.

Throughout the seventeenth, eighteenth, and early nineteenth centuries, there was a most pronounced and unprecedented predilection and attraction for the sea that was substantially and persistently evidenced by New Englanders. Farther south, it was the colonial and his house or acres; in New England, the Yankee, his ship, and the sea. John B. McMaster, writing of the great westward drift of emigration in the early years of the nineteenth century, was impressed with the hardihood and constancy of New England fishermen and their inflexible connection with and loyalty to the sea, their ships, and their calling. The farmer deserted his acres, the merchant his business, the tradesman his shop, and the mechanic his job, but—

> No whaler left his vessel. No seaman deserted his mess. No fisherman of Marblehead or Gloucester exchanged the dangers of a life on the ocean for the privations of a life in the West. Their fathers and their uncles had been fishermen before them, and their sons were to follow in their steps. . . . They took no interest; they bore no part in the grand exodus. They still continued to make their trips [to the Banks twice a year for three to five months] and bring home their "fares."

McMaster says that the boys in fisherman families "knew the name of every brace and stay, every sail and part of a Grand Banker, or chebacco," before he could read and write. When about ten years old, a boy was capable of being of some use on a ship and made his first trip to the Banks. The crew of a banker generally consisted of half able seamen, or "sharemen," and half apprentices, who served as such three or four years and as "cut-tails" received no money except for the fish they actually caught and marked by snipping a piece off the tail. Men with the sea in their blood and, whether young or mature, who had received such training and lived in such close contact with Mother Ocean felt no temptation and no inclination to travel westward and live on the land. The deep-sea fishermen of the years prior to the Civil War were nearly all native Americans (although there was a steady inflow of people of the same hardy original stock from the British provinces), and they followed with enthusiasm and single-minded loyalty "an hereditary trade of which they were intensely proud." Whereas the New England fishermen for years have not been the Yankees of old (many of them being of alien birth—Portuguese, Scandinavians, and British provincials of Anglo-Saxon, Celtic, or French lineage), yet the life has always demanded that they be good men, and weaklings have soon drifted away to easier jobs.

Marblehead (near Salem) early led the Massachusetts towns as a deep-sea fishing center. In 1741 about half of the fishing vessels of Massachusetts sailed from Marblehead. However, Gloucester, about a dozen miles away, "nestling in the granite cliffs of Cape Ann," gradually rose to prominence. It sent the first "scooner" to the Banks (to displace the sloop, ketch, and brig) and after years of poverty and colossal setbacks, during the War of the Revolution and that of 1812, grew to become the most famous fishing port in America and, it has been frequently claimed, in the world.

When England and France, under subsidies of their governments, were sending large seaworthy ships to the Grand Banks fisheries, the New England colonists, with no money to invest in big ships, participated in the trade with small ships lightly manned. An historian writes that of the seventy or eighty Cape Ann (Gloucester) schooners that sailed to the Grand Banks for cod in the half dozen years before the Revolution, few were of above fifty tons, and the average cost of the craft with outfit complete is said to have been about a thousand dollars. Evidently, the word "cost" is incorrectly used, for such vessels could not have been built and equipped for less than $40 to $45 per ton, or $2,000 to $2,250 each; possibly the market and depreciated value of the vessels, considering their age and physical condition, would have been nearer the thousand dollars stated. That Gloucester was poverty-stricken during the years preceding the Revolution and that it sent out old and "puny" vessels "ill-fit to meet the furious tempests and giant waves of the North Atlantic," with disasters "frequent and inevitable," are evident from Gloucester records which state:

In March 1766, 19 vessels sailed for the Grand Bank, and while on the passage thither were met by a violent storm which wrecked and scattered the fleet and sent many to the bottom. Two were cast away at Nova Scotia; seven foundered at sea with all on board; and several others were so much disabled that they were obliged to return.

The War of the Revolution destroyed the deep-sea fishery and whaling business of the American colonies. Robbed of a chance to make a living, a good percentage of New England fishermen turned to privateering, and it is said that one-third of all the nine hundred able-bodied men at Gloucester did not survive the war. Samuel Roads, Jr., in THE HISTORY AND TRADITIONS OF MARBLEHEAD, says that when the war closed, Marblehead had 166 of its sons in British prisons, and 122 more were dead or "fate unknown." Of the 1,069 women in Marblehead, 378 were widows, and of the 2,242 children, 672 were fatherless. Other historians state that in 1780 "within the borders of the town were 458 widows with 966 fatherless children." The "ratable polls" of Marblehead decreased from 1,203 in 1772 to 544 in 1780 and the tonnage "owned, employed and manned" from 12,313 to 1,509 during the war.

The American deep-sea fishery has always been a hazardous calling. It has been said that, although Gloucester, Mass., gained in prestige and power until it dominated the fishing trade (cod, haddock, mackerel, halibut, etc.), it "paid every year a dear price for its supremacy." In the "Fishermen's Memorial and Record Book" (Proctor Bros., Gloucester), we read:

The history of the Gloucester fisheries has been written in tears. No other industry by sea or land sustains such a drain upon its resources and employes. Other callings may shorten life, but none shows such constant and wholesale destruction. The men who go out upon the banks take their lives in their hands as surely as he who goes into battle; nay, the proportion of fatal casualties upon the battlefield is much smaller than in this perilous calling.

We are told that between 1830 and 1873, Gloucester lost 281 vessels and 1,252 men in its deep-sea fisheries. The heavy gale of February 24, 1862, caused the loss of 15 Gloucester fishing schooners and 120 men, and the dead left 70 widows and 140 fatherless children. In that one black year of 1862, Gloucester lost 19 vessels and 162 men (and boys) in the Newfoundland, George's, and offshore fisheries. In 1871 the Gloucester losses totaled another 19 vessels and 140 lives, and the hurricane of August 24, 1873, caused the foundering of 9 vessels and the loss of 128 seamen. As late as the Spanish-American "hundred days'" war of 1898, the deep-sea fisheries proved to be still a nursery of seamanship and a reserve for supplying the proper kind of men for naval service. Marvin says that, although most of the crews of Gloucester had sailed on fishing trips when war was declared, it furnished to the navy "many more recruits of a desirable class than any other community of like size in the nation," and he adds: "At the Gloucester recruiting station, in the early summer of 1898, 76½ per cent of the men examined were accepted. At Boston the per cent accepted was 14½; at New York, only 6. This means that in physique and intelligence the fishermen of New England are very much superior to the merchant sailors of the great seaports."

Subsidies to the Fisheries by the American Congress

The fishing fleet of the United States was paid an annual bounty from 1792 to 1866. It is interesting to note that the withdrawal of this bounty was accompanied by a pronounced decline in fishing tonnage; the whaling tonnage reduced 50 per cent in one year, and the total cod and mackerel fisheries tonnage (which aggregated 204,197 tons in 1861 at the commencement of the Civil War and was 112,677 tons in 1865) dropped to 76,065 tons in 1867 and 62,704 tons in 1869. In addition to subsidies paid by the government to owners of fishing tonnage, pay from the national treasury at the rate of $2.00 per month was also, for long years, given to the crews of fishermen in order to create a sort of sea militia. In the War of the Revolution and that of 1812, the fishing fleet supplied the best sailors for the privateers and armed national vessels. The successful colonial campaign against the French at Louisburg in 1745 was both led and fought by New England deep-sea fishermen, and during the Civil War the best recruits for the northern fleet were fishermen. Throughout the era of American wood sail, the fishing fleet of the nation was the nursery and training school for the country's merchant marine.

On July 4, 1789, due primarily to the efforts of Elbridge Gerry, of Marblehead, and Benjamin Goodhue, of Salem, Congress granted a bounty of five cents on every quintal of dried fish or barrel of pickled fish exported. Surprisingly, there was no sectional opposition to the passing of this measure, and Charles C. Pinckney, of South Carolina, in the debates of the ratifying convention in his state, had actually urged the distress of the New England fisheries, due to the closing of British and foreign markets to them, as a reason for a closer union between the states. In 1791 the General Court of Massachusetts petitioned for substantial help and encouragement for the deep-sea fisheries, and following a friendly but noncommittal report on the subject and the condition of the fisheries by Thomas Jefferson, then secretary of state, Senator George Cabot, a former owner of Beverly fishing vessels, drafted and had enacted into law on February 9, 1792, a measure providing for a bounty of $1.50 for every ton of burden over twenty and under thirty and $2.50 per ton for every ton above thirty to be paid annually to the owners of vessels employed in the codfisheries for four months in the year. It was stipulated that three-eighths of this bounty should be retained by the owners and five-eighths spread among the crew of each vessel. A bounty of this nature was intended to (1) support and protect American deep-sea fisheries, (2) encourage the building of larger and more seaworthy vessels, and (3) make employment in the fishing fleet attractive to seamen and build up an experienced navy reserve, or militia, that would be useful to the country in the manning of its warships in time of war.

The fishing fleet gained rapidly in quality under government encouragement and in the seven-year period 1800-1807 increased its tonnage of sizable enrolled vessels from 22,307 to 60,690 tons (a ratio of 2.72 to 1), while its licensed fishing vessels under 20 tons increased from 7,120 to 9,616 tons. We are told that in 1805, with 57,465 tons reported engaged in the cod and mackerel fisheries, eight thousand men were employed in this branch of the American mercantile marine and that its exports amounted to more than two million dollars. The official government records show a tonnage of only 17,498 tons of enrolled vessels in deep-sea fisheries in 1794, from which year a steady gain was made until 1807 and the embargo years—the increase being 28,628 tons, or 247 per cent, in thirteen years. In 1807 the fisherman bounty was revoked, and the administration, removing the duty from foreign salt, sought to convince the fishing fleet that "free salt" would offset the loss of the bounty. This was both untrue and unfair, as "free salt" certainly was not an equivalent to sailors for their reduction of income following the withdrawal of a government subsidy that had been benefiting the crews of the fishing fleet 1.7 times as much as the owners.

In 1813 and 1814 (during the War of 1812), the deep-sea fishing fleet almost passed out of existence. The tonnage of sizable "enrolled vessels" dropped from 60,690 tons in 1807 to 21,822 tons in 1812 and 11,255 tons in 1813, when Congress felt obliged to re-enact the bounty law to save fisheries from annihilation. The deep-sea fisheries tonnage sunk to an all-time low of 8,863 tons in 1814 (only one-seventh of the tonnage of seven years before), but with the bounty act in effect—and made increasingly liberal—the fisheries gained in vigor following the peace treaty with Britain as well as in tonnage, which was officially recorded for "enrolled vessels" as 26,510 tons in 1815, 37,879 tons in 1816, 53,990 tons in 1817, 58,552 tons in 1818, and 65,045 tons in 1819. The total "enrolled" and "licensed" vessels in the fisheries steadily increased from 17,855 tons in 1814 to 76,078 tons in 1819. The 1813 law granted a government allowance of $2.40 a ton to vessels over twenty and under thirty tons and $4.00 a ton to vessels over thirty tons. In 1819 the act was amended, and all fishing vessels of from five to thirty tons were granted a bounty of $3.50 a ton if they had four months of sea service, and vessels above thirty tons were given the same bounty for three and a half months' sea service provided the crew of each vessel consisted of ten or more men. This bounty law remained in effect for many years and was in force during a period that has been described as "the genuine golden age of the American deep-sea fisheries."

In the story of the American merchant marine, the fisheries of New England are of prime interest because they afforded an excellent school for sailors. That fishing craft should have been subsidized by Congress early (1792), with governmental encouragement remaining in effect until about the time of the Civil War, is but natural and seems to have been fully justified in the national interest. After the War of 1812, the export of dried fish declined, and in spite of a protective tariff, foreigners began to sell pickled fish in the United States (as early as 1812). These imports increased steadily until 1848, when over a hundred thousand barrels were imported. Sabine, describing the conditions prevailing in the fishing industry in 1848, says:

> Many crews of fishing vessels owned in Newburyport, on settling with their owners for six and seven months' hard toil at sea, received only about ten dollars per month, and on this miserable pittance they were supposed to eke out the year. They had obtained good fares of fish, but were sufferers from the depressed state of the market. With facts like these before us, can we wonder that the more ambitious young men abandon the employment at every opportunity.

Deep-sea fishery from other New England ports for cod, mackerel, etc., had the same general experience as reported for the Merrimac. Pickled fish continued to be imported into the United States in excess of a hundred thousand barrels a year. Then, following the discovery of gold in California, came the Gold Rush of 1849-1853 and the great demand for sailors to man the Cape Horners and the tremendous fleet of clipper ships built in the fifties. The fisheries, both general (cod, mackerel, etc.) and whaling, were hit hard by the exodus of American-born sailors steeped in the tradition of the sea, and the decks and forecastles of American merchant sail became deserted of American boys starting out young to learn the ways of the sea and how to handle a ship. The tremendous fleet of clipper ships built by the United States in the fifties was commanded by Americans, but most of the forecastle hands were foreigners. The old American system of training sailors was past, the sea had lost its lure to American youth, and with the change of the times, it soon became apparent that the days of the successful operation of deep-sea American sail were numbered.

A Divided Country and the Adoption of a Policy Fatal to the Merchant Marine and the Fisheries

A divided country—the North and the South—ruined all chances of the United States of America's becoming a mercantile power in steam-driven tonnage in the sixties (as the United States had been in sail during the forties and fifties—the clipper ship era); the political disharmony and the antagonism of the southern leaders and legislators toward the northern marine interests were responsible not only for canceling the necessary mail subsidies to American steamships—and, by so doing, striking at the sea power of the North—but also, in 1858, for repealing the fishing bounties that for two-thirds of a century (excluding the period 1807-1813) had given protection and encouragement to the Yankee deep-sea fishing fleet. When the slavery question was rending the country asunder prior to the Civil War, the slave-owning and agricultural South struck political blows at the industrial and shipbuilding, shipowning and ship-operating North that harmed the country as a whole, in some respects, more than the thunder of cannon and clash of arms in the years that followed. It was sectional hatred, the political power of the South, and the appeasement policy of several states—and not Great Britain—that, during the late fifties and the early sixties, caused America to relinquish its mercantile command of the seas and adopt a policy that proved fatal to its shipping in general and to American fisheries.

The fishing bounty system was denounced by the South as fostering monopoly; in operation, it set a premium on individual thrift and local enterprise, increased competition, and benefited all connected with the industry—not a few rich men as was claimed. Richard H. Dana, before the Halifax Commission in 1877, in referring to the so-called fishing monopolists of Gloucester, described the fishing boat owners and merchants of every New England fishing town:

> There is not a rich, idle man in the town of Gloucester. The business of Gloucester cannot be carried on, as mercantile business often is, by men who invest their capital in the business and leave it in the hands of other people to manage. It cannot be carried on, as much of the mercantile business of the world is carried on, in a leisurely way. . . . No, the Gloucester tradesmen are hardworking men, and they gain their wealth and prosperity on the terms of being hardworking men. The Gloucester merchants . . . are content to be "fish-dealers" . . . and are men who go to their counting-rooms early and stay late.

But what about the seamen whom southern legislators and their friends described as unwarrantedly favored and pampered by Federal funds! Zeno Scudder, an authority on deep-sea fisheries, in the Massachusetts legislature on August 12, 1852, declared that the annual average income of the men of the codfishing fleet, during the ten years ending June 30, 1851, was only $63; to this, the Federal fisheries bounty added $14 for each man, making a total compensation to a skilled fisherman of only $77 for "at least four months of the severest and most hazardous of callings."

The fishing fleet trained sailors for the merchant marine. Many fishermen took their cargoes to West Indian and European ports. Some traders carried salted or cured fish in the holds and lumber on deck. Young men who had served their fishing apprenticeship shipped on such craft ultimately entered the general trading merchant marine and became as fine square-rig deep-water sailors as any afloat. From the New England fishing fleets were recruited the best crews of the American merchant marine as well as men to handle the naval vessels and privateers in time of war. An observer in the Boston customhouse around mid-century wrote: "Were it not for the fisheries, in less than ten years we should not have American seamen enough to navigate our ships as masters and mates, and even now Cape Cod furnishes a very large proportion of the active, intelligent shipmasters and mates out of this port and very many out of New York."

The South, from the days of the early Virginia settlement, was persistently antagonistic toward the shipowning North and sought in every way to keep from being dependent upon it in commerce and in the handling of agricultural products—tobacco, rice, corn, and cotton as well as indigo, etc. Before the Civil War, the legislators of the Confederate group of states were not without a selfish motive when they moved to weaken the mercantile marine, which was almost entirely owned in the North, and to weaken the New England deep-sea fisheries fleet, which, if it continued in profitable operation, could be expected to furnish men for the ships of the Union's naval and merchant fleets when the war—seemingly growing inevitable with the years—should break out. In this connection, it is interesting to note that the crew of the U.S.S. *Kearsarge,* which finally caught up with and destroyed the deadly and elusive British-built and manned Confederate commerce raider *Alabama* (commanded by Captain Semmes, a southerner), was recruited at the old fishing town of Portsmouth, N. H., and that these men came generally from the deep-sea fishing fleet of New England.

The tonnage engaged in American general deep-sea fishing (cod, mackerel, etc.) not only was hard hit during the Civil War but also never regained, after the war, either the importance to the national economy or the total tonnage employed that had obtained in the high record year of 1862 (193,459 tons "enrolled" and 204,197 tons total) or the average for the first four years of the sixties, i.e., 1860-1863 inclusive (171,691 tons "enrolled" and 181,-978 tons total). The tonnage of the "enrolled" division of cod and mackerel fisheries dropped to an average of 66,045 tons (or only about one-third that of 1862) for the three-year period 1867-1869 inclusive; it averaged 78,770 tons during the decade of the seventies with 1873 the record high year following 1865, 71,270 tons in the eighties, and 57,730 tons in the nineties, showing a steady drop in this decade from an average of some 61,750 tons in 1890-1892 inclusive to 42,900 in 1899.

British-Canadian Antagonism toward the Colonial and United States Fisheries

Buzzard's Bay deep-sea fishermen had a liking for northern waters and often combined whaling with codfishing—a practice generally despised by Nantucket men. In 1765, Massachusetts and Long Island whalers came in conflict with Governor Hugh Palliser of Newfoundland, who set up regulations to favor the fishing operations of a British company organized in London for whaling, codfishing, and trading in the northwest Atlantic off the Newfoundland and Labrador coasts. Palliser ruled that vessels from the American colonies were not "to fish for any other than whales on this coast" and that when a whale was stripped of its blubber, the lean carcass was to be towed at least three leagues out to sea, as its presence near the coast, it was asserted, drove codfish away. Colonial (New England) vessels were prohibited from fishing on the Newfoundland coast, and their trade with the Indians was restricted. The British sloop-of-war *Zephyr* (Capt. John Hamilton) cruised along the Newfoundland coast to enforce Governor Palliser's orders and regulations, and Hamilton was particularly obnoxious in boarding and confiscating the codfish catch of Massachusetts fishermen. To add insult to injury, two vessels of the London company cruised along with the *Zephyr* and took over the stolen cargoes of cod, thus benefiting greatly by the new Palliser "law" and the laborious work of the New England colonials.

The Massachusetts subjects of the king appealed for justice to the crown, which sustained their right to fish in the waters that had been forbidden them and to trade along the coast. However, Governor Palliser still continued to issue orders to favor the London company and embarrass the colonials, whose operations, while being permitted, protected, and encouraged as far as the wording of official decrees went, were placed "under certain necessary restrictions" intended to make their fisheries unprofitable and drive them away. Colonials were not permitted to land to cut up whales and save the oil, and to justify belligerent interference with the whaling and general fisheries of the colonials, it was officially declared that they were in the habit of "plundering whoever they find on the coast too weak to resist them; obstructing our Ship Adventurers from Britain, . . . destroying their fishing works on shore, stealing their boats, Tackle and Utensils and hunting for and plundering, taking away or murdering the poor Indian Natives of the Country." The charges were as false as they were ridiculous, but they served the purpose intended, and Palliser, who was prosecutor, judge, and jury, ordered the king's ships again assigned to coast patrol duty because of "these Barbarities and other Notorious Crimes and Enormities to apprehend all such offenders . . . and bring them to me to be tried for the same." Colonial whalers and particularly those of Buzzard's Bay that combined whaling with codfishing were driven from the Newfoundland and Labrador coasts by arbitrary and devilishly unjust discrimination and persecution based on false charges and prejudice backed by an arrogant governor and insolent officers of the king's navy. These circumstances were not without influence upon the Revolution, then simmering, and although petitions to Britain brought about modifications of Governor Palliser's regulations, the harm had been done and was not forgotten by the marine fraternity of the colonies. It is pleasing to record that during the disastrous year of 1768, when some one hundred and fifty American whalers went to the northern grounds and Nantucket lost ten of its eighty vessels engaged in those waters during a series of ferocious gales and heavy seas (and whalers from other ports fared even worse), the crews of two of the Nantucket whalers were saved by the British sloop-of-war *Merlin,* then under the command of Capt. John Hamilton, whom colonial fishermen heretofore had had good reason to hate.

One of the very evident and specific causes for colonial dissatisfaction with British tyrannical and arbitrary rule which led to the Revolution was Lord North's attitude in 1775 in regard to New England fisheries. In an attempt "to bring the northern colonies to terms," he sought to destroy American deep-sea fisheries by forbidding exports to France, Spain, Holland, Madeira, and South America and by preventing "colonial craft from resorting to the Banks of Newfoundland." McMaster, in A HISTORY OF THE AMERICAN PEOPLE, rightly says, "In the list of parliamentary acts which did so much to bring on the Revolution, there is none so infamous as this." The proclaimed intent of the British Tory Government was to starve New England into submission and servitude by striking at its fisheries. The bill was passed by Parliament with a great majority and was seemingly approved in England, but it is interesting to note that there were twenty-one members of the (upper and aristocratic) House of Lords sufficiently humane and just to remonstrate vigorously against such legislation and assert boldly that "the attempt to coerce by famine the whole body of the inhabitants of great and populous provinces is without example in the history of this or perhaps of any civilized nation." When American commissioners in Paris in the early days of the Revolutionary War tried to invoke aid from France in America's fight for freedom from England (the admitted bitter foe of the French, which France was merely waiting for a favorable opportunity to attack), Vergennes, the French minister of foreign affairs, expressed the generally held belief that the position of the American colonies was hopeless; for the colonists could not live "without access to the Banks of Newfoundland and a foreign outlet for their salted quintals," which the English had cut off, and with their navy they could enforce an absolute embargo indefinitely.

Winthrop L. Marvin, writing in 1902 of the history and romance of the American merchant marine and referring to specific expressions of the feeling abroad that the American colonists of 1776 could not survive if deprived of their deep-sea fisheries, said:

> Here is picturesque historic testimony of the vast importance of the Yankee fishing fleet of a century and a quarter ago as the Old World regarded it. The same estimate was loyally held here at home. John Adams and his colleagues faithfully reflected the sentiment of the American people, if not the feeble congress, when they insisted at Paris that the retention of equal rights in the northeastern fisheries was an indispensable condition of peace.

When the treaty with the British that ended the War of the Revolution was signed in 1783, one of the most important provisions demanded and obtained by the American representatives at the peace table was the guarantee by Britain to America of substantially all the rights that its fishermen had enjoyed as subjects of the British king. New Englanders under Phips and Pepperell, who were both fishing merchants, had wrested fishing privileges from the French, and what they had won for Britain they were determined to enjoy themselves—share and share alike with the English. The treaty, as signed, conceded to Americans the right to fish on the Banks of Newfoundland, in the Gulf of St. Lawrence, and in all waters where they had been accustomed to fish before the Revolution.

The Peace Treaty of 1783 did give American fishermen all the rights that they could wish for as to the use of fishing grounds off the Canadian coast, but independence deprived the New Englanders of their greatest market for codfish—the British West Indies. As Morison says, "Johnny Bull slammed his colonial doors in Jonathan's face; would receive his ships on no terms, nor even his salt provisions and codfish in British vessels. He intended to build up his own fisheries and lumber trade. France and Spain excluded recent allies from their colonial preserves. . . . The returns to New England fishermen were meagre indeed. After four years of peace, about four-fifths of the Grand Banks fleet was in commission; but the men were not earning enough to see their families through the winter. By 1789 only one-third of the whaling tonnage of 1773 had been restored," for Britain, the only foreign market for Yankee whalers, had been closed to them soon after the Peace of 1783. McMaster testifies that from the signing of the treaty that terminated the War of the Revolution to the adoption of the Constitution in 1789 "the fish industry was prostrate," and he adds, "It did, indeed, give employment to 540 ships and 3,300 seamen. But the business had steadily declined until in 1789, the average yearly earnings of each vessel were $273 and the average yearly expenses $416." (During 1789 all the deep-sea fishing boats lost on an average $143 each, equivalent to 52 per cent of their take.) In two years the average gross earnings per vessel had dropped from $483 to $273, and we are told that the town of Marblehead, with a population of 5,500 people, had 459 widows and 865 orphans "mostly dependent for support on the taxpayers"; that "houses and fish sheds were tumbling to pieces and the sea threatened to make a clean breach through the neck and ruin the harbor." On July 4, 1789, Congress granted a small bounty on all exportations of fish and on February 9, 1792, came to the support of the American fisheries in general by granting a bounty to all vessels engaged in the codfisheries, part to go to the owners with the balance to be divided among the members of the crew. With this support, the tonnage of the fleet increased, and the United States deep-sea fisheries once more showed vigor, until it became harassed by the policies of the Jefferson administration, including the Long Embargo, which preceded a devastating marine war with Britain.

During the War of 1812, most of the American fishermen operating on the Banks abandoned their trips and laid up, dismasted, in snug, safe ports and inlets away from possible coast-line raids of the foe. The idle crews of a number more than twice sufficient to man America's small navy took naturally to privateering. Every fishing town in New England became "a nest of privateers," and the young, hardy, and audacious Yankee fishermen took a fiendish delight in worrying and spanking the arrogant, self-satisfied, and traditionally conservative—or rather old-fashioned and stubborn—British. When the peace treaty was signed, the British felt a very definite and articulate, revengeful spirit toward New England fishermen; the London TIMES said editorially that Great Britain retired from the war "with the stripes [lashed by the hated Yankee seamen] still bleeding upon our backs."

The War of 1812 was calamitous to the American deep-sea fisheries. The peace commissioners at Ghent in late 1814 argued the question of "the fishery privileges which the Americans enjoyed under the Treaty of 1783," and the British stubbornly insisted that such rights would be denied in the future, as they contended that the treaty had been abrogated by the war and that that clause would not be renewed. The American representatives refused to accept the omission and demanded a continuation of all the rights previously enjoyed, but the peace treaty as finally drafted and signed was in every respect a most unsatisfactory document, and it made no mention of the fisheries and was as silent on this important controversial matter as it was on the vital issue of impressment. Presumably, the war had been fought in the interest of American seamen and for freedom of the seas, but the British peace commissioners at Ghent did all in their power to take from American fishermen rights and privileges that they had enjoyed for some thirty-two years under the terms of the Peace Treaty of 1783. New England fishermen had no intention of yielding their prerogatives, of giving up any rights at sea previously held, or of being browbeaten by the British—notwithstanding their great navy. In 1815, after peace was declared, New Englanders set sail for the Banks and Canadian fishing grounds as in pre-war days and promptly ran into "a barrel of trouble" in the form of antagonistic Canadian officials backed by the British Navy. The wrangling and threats of a resumption of hostilities led to the Convention of 1818, by which, as usual, Britain, through diplomacy, obtained the advantages it desired, and the United States "picked up the crumbs." The claimed benefit of the terms of the convention to American fisheries is reflected by a reduction of from 65,045 tons of enrolled deep-sea fishing tonnage in 1819 to

51,352 tons in 1821—a drop of 13,693 tons, or 21 per cent. U.S. bounties had to be voted by Congress to stem the tide of the discouragement and disgust of the fishermen with their gullible government in matters involving diplomacy and foreign treaties. The Convention of 1818 was in fact the basis of persistent discord between British Canada and the United States. In the realm of diplomacy, Britain won a victory over Americans, but Yankee seamen promptly commenced to "cut their suit according to the cloth handed them." Their resourcefulness and vigor caused the British increased annoyances, and their chagrin at being unable to destroy the Yankee fisheries led to contemptible work by Canadian officials and the British Navy.

The maritime New Englanders, who had taken the initiative in definitely challenging British tyranny in the 1770's, according to Marvin, "made short work of the hedge-fences of the vexatious convention of 1818." Shut out of the three-mile limit along the coast of the Canadian provinces, they sought and found new and richer fishing grounds farther out at sea.

> In 1821 three venturesome Gloucestermen sailed to George's, . . . which like the Grand Bank lies too far away for the extension-paw of the British lion. The Yankee fishermen learned to deepen their water and to range over a greater area of the Grand Bank than the original forty fathoms. They even sailed to remote and stormy Labrador, where the convention of 1818 expressly made the fishery legitimate.

Larger vessels of some eighty tons of square topsail schooner rig were built for the far-off Labrador and deep banks fishing trade. Gloucester, Newburyport, Portsmouth, Marblehead, and Provincetown participated in this business, and Captain Robinson, of the British Navy, reported in 1820 that he found on the Labrador coast an American fishing fleet of 530 sail manned my 5,830 sailors. The American deep-sea fishing tonnage (enrolled vessels, not including licensed craft of less than twenty tons), which was 51,352 tons in 1821, increased to an average of 119,540 tons for the five-year period 1834-1838 inclusive—a gain of 68,188 tons, or 133 per cent.

Britain continued its arbitrary, intolerant treatment of American fishermen found working in "British-Canadian waters," and it is amazing that its highhanded and unjust methods, inspired by unconcealed jealousy, did not lead to bloodshed and open hostilities. To drive the irrepressible Yankees out of Canadian waters, the British conceived the ingenious but fundamentally ridiculous "headland theory" in regard to the outlining of the three-mile limit inside of which American vessels were forbidden to fish. The British decreed that the line of the three-mile limit would no longer follow the indentations of the coast, but would be drawn in straight lines from a point three miles seaward of a headland, or cape, to another point three miles off any coast projection some good distance away and invisible; therefore, wide bays from which land could not be seen at all were declared to be in the forbidden area. American fishing boats operating in these arbitrarily prescribed areas were seized by British warships, taken to a Canadian port, and condemned on a charge of fishing in British waters. Marvin has written:

> Great Britain watched with jealous eye all through the years the steady growth of the American deep-sea fisheries. Her resentment was twofold —first, that her great maritime rival was finding in the fisheries an inexhaustible reserve of the bravest and hardiest seamen in the world; and, second, that though their homes were far from most of the fishing banks, the Yankees were much more skilful and successful in their pursuit of the industry than Britain's own provincial subjects, who had all the advantage of nearness of position. From 1815 to 1854, those Yankee fishermen who were unlucky enough to fall in with British cruisers or to be caught by British officials at anchor in Canadian ports received such inhospitable treatment as would scarcely be suffered outside of Fiji or Patagonia.

The New England marine fraternity did not take the continued expressions of British oppression and vindictiveness without showing a spirit of retaliation which time and time again brought the United States and Britain on the verge of war. In September 1824, the British sloop-of-war *Dotterel* seized the two American fishing schooners *Reindeer* and *Ruby* off Grand Manan Isle at the entrance to the Bay of Fundy. Shortly thereafter, as these vessels in charge of prize crews were being sailed to St. Andrews for condemnation, they were attacked by Captain Howard of the Eastport, Maine, militia, with two hundred armed and determined men aboard two American schooners and a boat. The British naval men were forced to surrender, and the Canadian and British governments were indignant over the "high-handed outrage," but the Yankees got back their two schooners, threw a scare into New Brunswick and Nova Scotia officials, and merely acknowledged but ignored voluminous British protests. Yankee fishermen were determined to fight "another War of 1812," if necessary, to curb the ruthless arrogance of the British on the fishing grounds of the northwest Atlantic.

The "Reciprocal" United States-Canadian Treaty of 1871 and the "Free Fish" Blow

Much has been written of the peaceful unfortified border line between the United States and Canada, but whereas on land the border of neither country had need of protection from its neighbor, on the Atlantic coast line conditions were just as incessantly turbulent and belligerent as they were tranquil and harmonious inland. So flagrant had the British outrages once more become to American deep-sea fishermen that, in 1852, the seamen of Massachusetts sent to Congress a memorial requesting that an armed force be assigned to their protection. Yankee seamen were again getting worked up to the point of taking things in their own hands ("if our elected government will not protect us and our rights"), and the Boston *Journal* exhorted the government to remember that two thousand vessels and thirty thousand men and boys were then "exposed to the cannon of a British fleet and the cruelties and horrors of British prisons." The British policy of seizure, fine, or confiscation of American ships, the imprisonment of American seamen, and the promulgation of the absurd headland three-mile limit line were scathingly condemned, and reform with redress was demanded with increasing vehemence by the New England maritime interests. To appease New England, Commodore Matthew C. Perry, in the steam frigate *Mississippi,* was sent to cruise the fishing grounds for the purpose of "protecting the rights of American fishermen under the convention of 1818"; but it was not until Commodore Shubrick, in 1853, took a squadron consisting of the *Princeton, Fulton, Decatur, Cyane, Albany,* and *Columbia* "to protect the northeastern fisheries" that the governments were aroused to diplomatic action to relieve a tension that "if longer ignored would most probably lead to acts of war." The result was the British-American "reciprocity" treaty of 1854, and once again American statesmen failed to hold their own with the British in the field of diplomacy; as in previous treaties, the English demanded and received much more than they gave in return. American foreign "reciprocity" treaties can and should be measured on the basis of their costs to the United States; the so-called "compensating" benefits for concessions made since the first peace treaty of 1783 have been practically nil.

The treaty of 1854 re-established the rights and privileges to Americans decreed by the Convention of 1818 (which should never have been a matter for discussion and certainly no subject for contention). It gave to Americans the privilege of catching certain fish—but not salmon, shad, or shellfish—along the shores of New Brunswick, Nova Scotia, and Prince Edward Island and of drying nets and curing fish on these coasts, but in addition to giving to British fishermen on the coasts of the United States similar privileges (which is the point where reciprocity should end), it granted Canada the right to ship fish into the United States free of duty.

The first stroke of the death knell to a vigorous deep-sea American fishing marine of a quality—both men and ships—unequaled in the history of the world was the "free fish" blow of 1854. This was followed in 1858 by the blow which repealed the fisheries bounties (an act of a divided country to injure the New England maritime states), and the third and last stroke was the Civil War, covering the first half of the decade of the sixties. Before the "free fish" act, the "enrolled" tonnage of the American deep-sea fisheries was 175,205 tons; it dropped to 124,553 tons in 1855, then rose temporarily due to fleeting influencing conditions to an average of 167,001 tons for the years 1860-1864, and finally collapsed, being wounded beyond hope of healthful recovery. In 1869 the tonnage of "enrolled" vessels in the fisheries was only 55,165 tons. More nearly accurate comparative figures for longer periods than one year (which in many cases were unduly raised or lowered by temporary and artificial conditions) give an average tonnage of 78,655 for the seven years 1867-1873 inclusive, 71,792 tons average for the next ten-year period (1874-1883 inclusive), 71,697 tons average for the succeeding six years (1884-1889 inclusive), 61,314 tons average for the following eight years, and only 43,666 tons average for the four-year period 1898-1901 inclusive. The tonnage of the American deep-sea fishing fleet at the turn of the century was only one-quarter of that of 1852 and of the Civil War years and about sixty per cent of the average of the seventeen-year period 1867-1883 inclusive.

The Civil War took seamen from the deep-sea fishing fleet, and only a part of them ever returned to it. On March 17, 1866, the treaty that gave Canadians free entry for their fish into the United States was terminated by the U.S. Government because of the ostentatious sympathy of Britain and Canada with the Confederate South. British-Canadians retaliated by enforcing rigorously their interpretation of the hostile terms of the Convention of 1818, and another period of harassment and exasperation followed. This led in 1871 to the re-establishment of the terms of the "reciprocity" treaty of 1854, and once more Canadian fish was permitted to enter the United States free of duty. However, not only New Englanders but also Americans generally were incensed when the Halifax Commission (the Belgian minister at Washington acted as arbiter and was positively pro-British), convoked in 1877 under the provisions of the treaty of 1871, awarded Canada $5,500,000 as added compensation for the fishing privileges of its coast. The United States paid the sum, which Canada promptly used in developing a liberal bounty system for the encouragement of its deep-sea fisheries. Copying American fishing methods and American vessels and being favored by lower labor rates and cost of construction and a generous government bounty, Nova Scotia, New Brunswick, and Prince Edward Island built "a fine fleet of large fishing schooners after the American model," fitted and operated them in the American way, and pushed their duty-free fish into the American market to the serious injury of the New England fisheries. The United States felt the competitive influence of low-cost Canadian sailing ship construction as early as the 1820's, and with an increasing cost in the United States, America had largely lost the foreign fish markets of Europe to Canadian, British, and French vessels by 1835, and the West Indian markets were feeling the Canadian-British competition in fish that even the American bounties of $3.50 to $4.00 per gross ton per year failed to withstand. As the century advanced, wood sailing vessels were built more cheaply in Canada than in the United States, being favored by local accessible low-cost timber, duty-free materials such as iron, cheaper outfits and equipment, and lower labor costs.

New England fishermen maintained that the Halifax award of $5,500,000 meant that the United States was required to pay an amount "greater than the total value of the fish that could possibly be taken by them in Canadian waters," and events proved that United States fishermen could not enjoy the privileges for which the country paid so dear. Americans engaged in peaceful fishing operations in harmony with the provisions of the treaty were attacked by belligerent Canadians in Fortune, Aspey, and Conception bays. The Fortune Bay affair of January 6, 1878, was given much publicity and is typical of the conditions in effect. Canadians for years had been selling in American fishing ports herring that was used for bait. In 1877 (the year of the Halifax award), twenty-two Gloucester vessels sailed for Fortune Bay, Newfoundland, to seine herring after the American custom, which they had the right to do under the terms of the treaty in effect. The Newfoundland fishermen, who had been catching herring off their coasts and selling it to Americans, strenuously objected to the Yankees' coming to their waters to obtain bait, so they congregated in force, surrounded the Gloucester schooners, ruthlessly seized and tore the seines, and threatened the Americans with destruction unless they immediately left the fishing grounds. The American fleet was compelled to return home with empty holds and with much damage to its equipment, and the only Gloucester vessel that secured even a partial catch was the schooner *Moses Adams* under the command of a fighting skipper, Capt. Solomon Jacobs, who armed his crew with revolvers and withstood the infuriated Newfoundlanders for a time.

In 1782 the British Government paid £15,000 as compensation for the damage sustained as a result of the injuries to equipment and the loss from the broken voyage of the Gloucester fishermen, but it was evident that the treaty could not be interpreted literally. The damages paid by the British represented a mere drop in the bucket compared to the loss sustained by the American fishing industry because of the fact that the rough and ready Newfoundlanders, who "knew little and cared less for the obligations of diplomacy," evidently could not be controlled by Britain. Moreover, New Englanders scornfully referred to the amount of damages paid by the British for violations of the treaty agreement as "only one seventy-fifth of what they bluffed us into paying them." The fishing treaty was terminated by the two nations on July 1, 1885, following a notice of intention to withdraw given by the United States in 1884, and the conditions based upon the British interpretation of the Convention of 1818 once more came into effect, which in plain words—admitted by a Canadian cabinet minister—was a persistently expressed policy of "harassing the Yankees."

The anger produced by Canadian outrages and inhumanities to American fishermen spread far beyond New England, and in 1888 another treaty was negotiated by Secretary Bayard; but as it followed the general lines of the 1871 treaty of Washington and once more gave the British and Canadians all they wanted, the New England fisheries protested its terms vigorously, and the Senate rejected it. The attitude of the American fishing interest toward the Bayard Treaty is well expressed by Marvin as follows:

> They declared that they did not care for the privilege of fishing within the Canadian three-mile limit; that they did desire an opportunity to visit Canadian ports to transship their catch and buy bait and provisions [and water] and that they demanded these things not as privileges, but as rights under the ordinary commercial usages of civilized lands. They did not wish to pay for them by opening our market free of duty to the bounty-fed Canadian fishermen. That would be an extravagant price, and intolerable.

New England fishermen were determined not to permit Canadian hospitality and co-operation or the paying of graft to be essential to their trade, and if necessary they were willing to change their procedure to suit new conditions. Canada retaliated by offering to American fishing vessels, upon payment of a stated sum, the privilege of entering its harbors to purchase bait and supplies and land their catch for shipment home. Some American fishermen purchased these licenses, but the number reduced with the years, as New Englanders developed plans to make themselves independent of Canadian port facilities. Newfoundland, which in the days of the Fortune Bay affair (January 6, 1878) was the most belligerent of all the Canadian colonies, in the nineties adopted the most kindly policy of all toward New England fishermen and openly declared that the old practice of "harassing the Yankees" was a "grievous blunder."

At the end of the nineteenth century the tonnage of American "enrolled" and sizable deep-sea cod and mackerel fishing craft averaged 43,666 tons for the four fiscal years ending June 30, 1901; the number of vessels averaged 550 (571, maximum; 539, minimum), and the average tonnage was a scant 80 tons per vessel. During the same period, the tonnage of the licensed fisheries craft, under 20 tons, averaged 8,103 tons; the number of boats averaged 898, or about 9 tons per boat. The total cod and mackerel fisheries tonnage of 51,629 tons reported in 1900 was just one-quarter of that of mid-1862.

United States Fishermen in the Last Part of the Nineteenth Century

Henry Hall, in his government report of 1882 on the American shipbuilding industry, says that there was not much beauty in the old-time "bankers," but that they were staunch and durable vessels. He adds:

Built for strength, well calked and immediately repaired when showing a leak or weakness anywhere, they often lasted for forty or fifty years. The last of them owned at Gloucester was the MANCHESTER, which, after long service on the banks, was sold to go into the coasting trade and was a successful vessel in that business for more than twenty years. The bankers used to make about three trips a year, beginning in March and ending in November, and then either went into trade or were laid up for the winter.

Continuing an historical discussion on fishing vessels, Hall says that the "clipper schooner" succeeded the banker. A few good years in which fish were plentiful and prices profitable, with a desire on the part of the fishermen to make rapid trips and as many trips as possible in one year, led to great improvements in the model as well as in the canvasing of deep-sea fishing schooners.

The body of the vessel was made leaner under the water, the bow longer and finer, the run cleaner, and the angle of entrance forward was sharpened from 85° to 45°. The spars were lengthened and the schooner put under a heavier press of canvas. The clipper fashion is said to have been set at Essex, and the models of the carpenters of that town were so much admired as to bring a great deal of business to their yards.

According to census returns for 1880, of the 475 fishing craft of all types owned at Gloucester, 218 had been built at Essex, 133 at Gloucester, 52 at Bath and environs (36 in the city of Bath), 9 at Kennebunk, Maine, and the same number at Salisbury, Mass., 5 at each of Newburyport and East Boston, 18 in eleven other Massachusetts towns, 9 in five other Maine towns (not previously mentioned), 12 in eight Connecticut towns, 3 in New York, one in New Hampshire, and one in New Jersey. Of the Gloucester fishing craft, 388 (81.7 per cent) were built in Massachusetts, 70 vessels (14.7 per cent) in Maine, and the remaining 17 boats (only 3.6 per cent) of the total Gloucester fleet, of all types, were constructed in the States of Connecticut, New York, New Hampshire, and New Jersey.

Records show that the early American deep-sea fishing schooners, "both bankers and clippers," were from 20 to 40 tons register. The size increased with the growing accumulations of capital, and since 1860, the majority has been built of from 60 to 90 tons register (the fair average being about 75 tons), but many have been built of from 100 to 140 tons. It was said that, at the end of the century, vessels of from 80 to 120 tons had replaced the old 50-ton bankers.

Henry Hall wrote in 1882:

Fishing vessels properly come first in any account of the American shipbuilding industry; they were the starting point of our shipbuilding and merchant service as they have been, historically, in the case of every nation which has been conspicuous upon the sea. There are more than 51,000 boats and vessels in the United States which are regularly engaged in fishing either along the different coasts of the country, or on the banks of Newfoundland, or in the distant latitudes near the north and south poles, where they go for the noblest game the sea contains—the whale, the seal and the sea lion. This multitude of boats, sloops, schooners and ships gives constant employment to more than 101,000 hardy and energetic men in the catching and curing of fish and to thousands of people on shore in the various trades concerned in the building, fitting out, repair and maintenance of vessels, and half a million of our population are afforded a livelihood by the fishing enterprise of the country.

The following statistics of the fishing fleet of the United States in the year 1880 have been compiled from data prepared by the Fishery Branch of the Census, in charge of Prof. E. B. Goode of the Smithsonian Institution, Washington:

Territory	Marine Craft: Number: Vessels	Boats	Total Craft	Tonnage of Vessels	Value in Dollars: Vessels	Boats	Total Craft	Value of Minor Apparatus and Outfits
								$
New England	2,066	14,787	16,853	113,603	4,562,131	739,970	5,302,101	5,038,171
South Atlantic States	3,014	13,331	16,345	60,886	2,375,450	640,508	3,015,958	1,145,878
Middle States	1,210	8,293	9,503	23,567	1,382,000	546,647	1,928,647	674,951
Pacific	56	5,547	5,603	5,463	546,450	404,695	951,145	467,238
Great Lakes	62	1,594	1,656	1,769	183,200	83,400	266,600	766,200
Gulf States	197	1,252	1,449	3,010	308,051	50,173	358,224	52,823
Total	6,605	44,804	51,409	208,298	9,357,282	2,465,393	11,822,675	8,145,261

Territory	Other Capital Including Shore Property	Total Value or Capital Invested	Number of Persons Employed Directly in Fisheries: At Sea	On Shore	Total
	$	$			
New England	9,597,335	19,937,607	29,838	7,205	37,043
South Atlantic States	4,789,886	8,951,722	38,774	13,644	52,418
Middle States	1,822,480	4,426,078	12,584	2,397	14,981
Pacific	1,330,000	2,748,383	11,613	5,190	16,803
Great Lakes	313,175	1,345,975	4,493	557	5,050
Gulf States	134,537	545,584	4,382	749	5,131
Total	17,987,413	37,955,349	101,684	29,742	131,426

Of late years, a great change has been made in the type of American deep-sea fisherman. Steam began to be used about the beginning of the twentieth century, and trawlers appeared more and more in the service as the years advanced. The schooner-rigged sailing craft continued to be popular; however, she was no longer a bluff-bowed, square-sterned, small vessel, but a larger, leaner, and faster yacht-like craft. The "modern" New England fisherman became a well-canvased, two-masted schooner of moderate beam and good depth, possessing stability and seaworthiness, with speed and power to work to windward. With a deep underbody, a long, narrowing stern, and a lifting bow, the twentieth century Yankee deep-sea sailing fisherman is not only much swifter than the older craft but also easier at anchor and "surer to ride out any gale that blows." It has been stated authoritatively that there has been "an undeniable diminution in the loss of life and property since the new model came into general use."

IX.

UNITED STATES WORLD LEADERSHIP IN SOUND AND ECONOMIC SCIENTIFIC NAVIGATION

Matthew Fontaine Maury—Pathfinder of the Seas

AMERICA not only led the world in originality in the design and building of ships and in the forceful, safe, and brainy driving of ships between ports—night and day, in all conditions of sea and weather—but also produced the two men who, as practical and technical geniuses, have done more than any others in the realm of sound and economic scientific navigation. Matthew Fontaine Maury (1806-1873), a Virginian and the geographer and inspired pathfinder of the seas, prepared wind and current charts which have been a great boon to sea captains and to the owners of vessels. Practical application of Maury's charts caused sailing packets rolling down to Rio over his route to make round trips in about 75 days instead of 100. The Gold Rush to California in 1849 put a premium on speed for the transport of both passengers and supplies. Fast ships were built to handle this trade, but ordinary sailers were helped by "a reduction of 26 per cent in average running time" between ports by the intelligent and thorough use of Maury's wind and current charts and his sailing suggestions. He advised British ships in the Australian trade to circle the globe, going by way of Africa and returning by way of South America. The saving to a 1,000-ton vessel following Maury tracks and making the round trip was said to be sixty-five hundred dollars. Use of Maury's charts with defined tracks, which were virtual "road maps of the sea," and plotted data, in the early days of their use, saved American and British sailing shipowners alone, it was estimated, twelve million dollars annually.

Matthew Fontaine Maury, like most geniuses the United States has given the world, was a poor boy. He was born "in the wilderness" in Spotsylvania County, Virginia, January 14, 1806, and four years later the family moved to Tennessee and experienced real pioneer life. When twelve years old, Matthew had a serious accident; his back was injured, and as he could not do hard physical work on the farm, he was sent to school. There was no United States naval academy in those days, but when he was nineteen years of age, Matthew received an appointment (through the influence of Sam Houston, then a Congressman from Tennessee) as midshipman in the navy to take up training on board ship. With great difficulty, Matthew was able to make the five-hundred-mile trip to report for duty, and being without funds, he borrowed, or bought, a horse (on credit). On August 13, 1825, young Midshipman Maury boarded the U.S. frigate *Brandywine* at New York to commence his training for naval service. This vessel took Lafayette back to France, proceeded to Cowes, England, for repairs and then in November joined the U.S. squadron in the Mediterranean, returning to New York in May 1826 after a nine months' absence. In June, Maury reported on the U.S. frigate *Macedonian* at Norfolk, Va., sailed for Brazil, Uruguay, and Argentina, and then continued around to the Pacific to Callao Roads, Peru, where the young midshipman was transferred to U.S.S. *Vincennes* and spent a couple of years patrolling the west coast of South America for the protection of American shipping. In July 1829, the *Vincennes* left Callao westbound across the Pacific via the Marquesas Islands, Tahiti, and Sandwich (Hawaiian) Islands to China, thence to Manila, Cape of Good Hope, and St. Helena to New York, which was reached June 8, 1830. Maury was just two days less than four years in circumnavigating the globe. These voyages gave him his only college education, and although incompetent academic teachers were on board the warships, the sea service had to be considered as a substitute for schooling at a naval school such as Annapolis.

With a year ashore to continue academic studies, Maury took his examination as one of a class of forty for the rank of passed midshipman and, being backward scholastically, did not do very well and was graded No. 27. In June 1831, he was sent to sea again in the sloop *Falmouth* for duty in the South Pacific. He became sailing master and, being unable to find accessible information about winds and currents, etc., he began to observe as well as to collect data from every available source. John W. Wayland says: "Out of his need his vision came. Necessity again was the mother of invention. And in supplying others, during succeeding years, with what he had himself lacked on this long voyage, he made his name known and loved around the world." Maury, after spending a few weeks on the schooner *Dolphin,* was again transferred to the frigate *Potomac,* which, following stops at Callao and Valparaiso, rounded Cape Horn, came near being crushed by ice opposite the Falkland Islands, and docked at Boston in the early summer of 1834. Maury had been away from the United States about three years. At this time, he had been in the navy about nine years and on active sea service about eight years.

Maury was married July 15, 1834, and in 1836 his book A NEW THEORETICAL AND PRACTICAL TREATISE ON NAVIGATION was published in Philadelphia. He was promoted to the rank of lieutenant in the navy on June 10, 1836, and his work in nautical science (the first to come from the pen of an officer of the U.S. Navy) was used as the basis of instruction in navigation for midshipmen when the United States Naval Academy was established at Annapolis in 1845. In March 1837, Lieutenant Maury was again attached to the U.S. frigate *Macedonian* and in September was appointed astronomer for an exploring expedition in the South Seas, but he was dissatisfied with the management, resigned, and for several months in 1838 worked in an observatory in Philadelphia. Returning from a visit to Tennessee in the late summer of 1839 to join the U.S. brig *Consort* in New York (under orders to survey southern harbors), Maury was seriously injured when the stagecoach upset in the middle of a rainy night; his right knee joint was dislocated and thigh bone fractured. Maury's sea life was over. He petitioned for a navy shore job that he could fill "on crutches" for a while, but none was given him, and he commenced to write under a pseudonym to reform the navy.

In November 1841, Maury, although still lame, made a special request to be appointed flag lieutenant in the Pacific squadron under Commodore Catesby Jones, but it was denied. Early the following summer, however, Secretary of the Navy Upshur, a capable and progressive executive, made Maury superintendent of the Depot of Charts and Instruments at Washington. He took charge of his new post on July 1, 1842, when thirty-six years of age—seventeen years after he had joined the navy. Maury discovered neglected old charts and records in Washington, studied them, and prepared a paper on the Gulf Stream. He read a paper before the National Institute, in which he outlined a plan for supplying ship captains with blank charts on which the tracks of their ships, with data regarding conditions, were to be indicated from day to day. Gradually, every master on every ship, on every sea, was to be enlisted in gathering new facts for a new science. It was Maury's plan that the best and most economic paths of the ocean were to be located and average monthly sailing conditions, with winds and currents, charted. It was the hope that ultimately through knowledge gleaned, organized, and practically disseminated through the years "every man who went down to the sea in ships was to have a guide book in his hand before he left the harbor."

In 1844, Maury's department was fittingly housed in Washington, and it became known as the Naval (or National) Observatory. In 1845, Maury began an exhaustive study of the stars and in 1846 and 1847 published important volumes of astronomical observations. In 1847, he put out an epoch-making chart entitled, "Wind and Current Chart of the North

Atlantic," which was the first great map of its kind for the guidance of ships on the open ocean. Within a year, we are told, "five thousand copies of this chart had been placed in the hands of shipmasters and the long voyages were being shortened by days and weeks." Maury's work in astronomy was useful, and in ten years he catalogued and made definite notes of value of about a hundred thousand stars; but his great work of demonstrated, practical merit dealt with winds and currents, and to achieve the desired and possible success Maury had to enlist the sympathetic interest and co-operation of thousands of ship captains. The greater the number of reliable observations and records that he could get sent to him from ships at sea, the greater and more valuable would become the charts that Maury made. Wayland says:

> By 1851 a thousand captains, far and near upon all the oceans, were making observations and records of winds and currents and sending him reports. These were used in making other and better charts and in writing out more definite directions for the guidance of captains in sailing their ships. When time and money were being saved, it was not hard to get attention and co-operation. Men who could not at first share Maury's vision and enthusiasm had to recognize the arguments of hard facts and sound dollars.

It has been well said that every ship that used Maury's charts and answered his questions became "a floating observatory, a temple of science," and assisted the "Pathfinder of the Seas" in his colossal undertaking in the interest of mariners and shipowners. But William J. Showalter, writing of Lieutenant Maury, says: "Commerce and science alike are his deep debtors. No one who sails the seven seas, who uses imports or in the smallest degree is affected by exports fails to reap benefits from the work of his life. And no one who is touched in any way by weather information [on shore or at sea—the agriculturist or the mariner] fails to have his life enriched in a greater or lesser degree by the work of the great geographer of the seas and the father of meteorology."

Maury's oceanographical work (winds and currents, etc.) received recognition in all parts of the civilized world. His achievements when in charge of the U.S. Naval Observatory and Hydrographic Office (not officially named as such until 1854), which he founded in 1842 and developed to a surprising degree of practical and economic usefulness, led to an international conference at Brussels, Belgium, in 1853, which produced the greatest benefit to navigation as well as indirectly to meteorology. Maury not only studied the waters, winds, and stars, ocean currents, which he likened to rivers, etc., but also measured and plotted depths of water and the ocean floor and located between Newfoundland and Ireland—a distance of about sixteen hundred miles—what he termed the "Telegraphic Plateau." Morse, the inventor of the electric telegraph, said that wires for carrying messages for long distances could be laid under water; that if the proper sort of bottom and route could be charted, telegraphic messages could be sent across the Atlantic Ocean. Maury found and charted the path for the cable and also advised how the wires for ocean cables should be constructed.

Cyrus West Field (1819-1892), who laid the first transatlantic cable and established telegraphic communications between two continents on August 16, 1858, acknowledged Maury's genius in mapping the course when he said at a dinner celebrating the transmitting of the first cable message: "I am a man of few words. Maury furnished the brains, England gave the money, and I did the work." Field declared that the track of Maury over his discovered "Telegraphic Plateau" was ideal for the purpose of holding a cable. The water "is neither too deep nor too shallow, yet it is so deep that the wires, being once landed, will remain forever beyond the reach of vessels' anchors, icebergs and drift of any kind, and so shallow that the wires may be readily lodged upon the bottom." Field, the projector of the first Atlantic cable, was a Yankee born at Stockbridge, Mass. Notwithstanding his eulogy of Maury, the ability, courage, resourcefulness, and industry of Field were outstanding. Laying a permanently successful Atlantic cable was a herculean job, and a refusal to become discouraged, with the excellent qualities of leadership that Field possessed, was necessary for the successful completion of the job. Field not only "did the work" but also furnished most of "the brains" for the enterprise, and when the first cable failed because of faulty electrical insulation, he chartered the *Great Eastern,* when the Civil War was over, and on this big vessel's second attempt, he laid a cable. On July 27, 1866, Field telegraphed from Hearts' Content, Newfoundland: "We arrived here at nine o'clock this morning. All well. Thank God, the cable is laid, and is in perfect working order." This cable held and has continued in successful use. To Field—and his persistency as well as ability—all honor is due.

When only twenty-five years of age, Maury theorized that the sea had its laws; that the waves, winds, storms, depths, and temperatures of the sea constituted a cause and effect—constant in their regularity, perfect in their orderliness, and mathematically inter-related; and that by patient, exhaustive investigation and organized help from others in obtaining data he would be able to understand the phenomena of the sea, to forecast its processes, and to reduce them to writing and graphic charts, so that they could be readily interpreted. Maury, in 1853, mapped out lanes across the Atlantic for the use of steamers, both eastbound and westbound, and it is said: "Forty-six thousand abstracts from as many skippers' logs went into the charting of these lanes." It would seem that Maury studied and noted the records of wind and weather on about this number of days of observations made on vessels crossing the Atlantic. The Maury "Lanes for Steamers Crossing the Atlantic" was published in 1854, and the lanes shifted according to the season of the year, but the eastbound and westbound tracks were kept apart, which fact added to seagoing security. The Brussels International Marine Conference of 1853 "unanimously adopted" the Maury plotted transatlantic lanes and charts in general, by which the world's shipping was thereafter to be guided, but it was not until 1898 that all the Atlantic steamship companies agreed to use them.

In 1855, Maury published his first edition of THE PHYSICAL GEOGRAPHY OF THE SEA, declared by Baron Humboldt to be one of the most instructive books in the English language. By 1861 the eighth edition had appeared in the United States, and in England the book ran through nineteen editions. It was printed in all the European languages of maritime peoples.

Maury was a southerner and had been an aggressive one in maritime matters from early days. In January 1839, he strongly recommended a line of steam packets to run between Norfolk and Havre and advocated overthrowing the marine domination of the South by New York and New England by direct trade between southern ports and foreign markets in southern-built, owned, and operated bottoms.

On April 20, 1861, Virginia having seceded from the Union, Maury resigned his commission in the United States Navy after nineteen years at the observatory in Washington and nearly thirty-six years in the navy. He was fifty-five years of age when he moved to Norfolk, Va., and was commissioned as a commander in the Confederate Navy. In September 1862, Maury was sent to England to purchase supplies and to make friends for the Confederacy, which sought to capitalize to the full Maury's prestige as a world benefactor. Maury returned to the United States in July 1868, received kind treatment upon his arrival at New York, and in September was installed as professor of physics at Virginia Military Institute at Lexington. He died at Lexington on February 1, 1873, at the age of sixty-seven years. The New York HERALD, paying tribute to him at his passing, said:

> The death of this distinguished physical geographer will create a profound sensation both at home and abroad. As the founder and most successful prosecutor of the benign system of oceanic researches, which has illumined the perilous paths of the mariner and taught commerce how to make the wind and currents of the sea do its bidding, his labors will long be gratefully remembered.

In 1923 a granite shaft was erected to the memory of Maury by the State of Virginia. A bas-relief of Maury is at the top of a large bronze tablet, and below an inscription reads in part: "Matthew Fontaine Maury. Pathfinder of the Seas. The Genius who first snatched from the Ocean and Atmosphere the Secret of their laws. . . . Every Mariner for countless ages as he takes his chart to shape his course across the seas, will think of this." At the top of every pilot chart issued by the Hydrographic Office to this day appears this legend: "Founded upon the researches made in the early part of the nineteenth century by Matthew Fontaine Maury, while serving as a lieutenant in the United States Navy."

Nathaniel Bowditch—Scientific Navigator

The second outstanding contributor to the science of operating ships at sea safely and economically was another American. Nathaniel Bowditch (1773-1838), "the Yankee stargazer," whose mathematical genius laid all future navigators in his debt, found over eight thousand errors in the standard English book on navigation and gave the seafaring men of all nations something definite, scientific, and simply expressed on which to work. Bowditch was born thirty-three years before Maury and died thirty-five years before him. Bowditch was an individual worker at all times throughout his life, and he had no big group of assistants under government employ and no thousands of co-operating ship captains sailing the Seven Seas to help him. Bowditch left the sea when thirty years old, with his great work on navigation completed except for the time required in getting out new editions to keep it up to date; henceforth he was a businessman, but also America's greatest scientific astronomer. Maury's sea experience ceased when he was thirty-two years of age and before he had been productive in science. The time of Bowditch's death coincided with that of the commencement of Maury's career as a geographer of the seas and meteorologist. Both men were hard workers, with vision. Maury was a scientist of great practical ability, but he did not equal Bowditch as a mathematician, a navigator, or an astronomer.

Nathaniel Bowditch was born at Salem, Mass., just before the War of the Revolution, of a family that had lived there over a century and been shipmasters for three generations. As a boy, Nathaniel was not strong enough to go to sea, so his father apprenticed him when twelve years old to Ropes & Hodges, ship chandlers, after sending him to school to learn bookkeeping. In September 1780, a Beverly privateer captured a British merchantman on her way from Galway to London, and among the loot taken was the valuable philosophical library of Dr. Richard Kirwan, an Irish scholar of international reputation. These books, sold at auction at Beverly (a town next door to Salem), were purchased by a Salem apothecary and acquired from him by a group of educated men in the community, who used the collection to found the Philosophical Library Company, thus giving Salem the best scientific library to be found north of Philadelphia. These books provided Nathaniel with an education, and as a boy he showed an aptitude and liking for mathematics. At thirteen, young Bowditch compiled a notebook on navigation, as the sea was in his blood, and then he wanted to go to sea, notwithstanding his physical weakness, to practice and develop his knowledge.

When Nathaniel Bowditch reached his majority and his apprenticeship and work as a clerk in a ship chandlery were over, he surveyed the town of Salem in harmony with a decree of the State of Massachusetts and was hired to do this work by the men given the political job, one of whom was Capt. John Gibaut. He found Bowditch so "powerful in calculation" that he offered the young man a chance to go to sea with him as clerk on the Elias Hasket Derby ship *Henry*. But Gibaut quarreled with Derby, and Bowditch sailed as second mate and clerk with Capt. Henry Prince on January 11, 1795, when he took the *Henry* out of Salem for the Isle of Bourbon (Réunion). On this Bowditch's first voyage (which lasted exactly one year to a day), the young mathematician and navigator—but inexperienced sailor—wrote in his sea journal: "Thursday thought of a method of making a lunar observation which to me is new & in some respects I think is preferable to any method hitherto published."

On March 27, 1796, Bowditch sailed again from Salem, but this time as supercargo with Captain Prince, who had been placed in command of the big new Derby ship *Astrea* (of "three hundred and some odd tons and armed with nineteen guns") for her maiden voyage to Lisbon, Madeira, and Manila. The *Astrea* returned to Salem on May 22, 1797, with a big and profitable cargo of sugar, pepper, and indigo. On this fourteen-month voyage, Bowditch had found errors in Laurie & Whittle's charts, near Trinidad, and also when approaching Manila had discovered that the figures in Moore and other books and charts on board were in error and had corrected data on the dangerous straits through which East Indies ships must go. Because of hostilities at sea, the *Astrea* was kept in port until August 21, 1798, and Bowditch had fifteen months ashore, during which he married and came in contact with Edmund M. Blunt, of Newburyport, a publisher of nautical books, who sought out the young Salem navigator to enlist his help in getting out an American edition of an English work on navigation.

Bowditch again sailed on the *Astrea,* and no sooner was this his third voyage started than he was reminded of the need of revising John Hamilton Moore's book on navigation, for the sights he took on Cape Ann disagreed with those set down in the British book. This voyage ended April 6, 1799, and was of seven and a half months' duration, during which the vessel went via Cadiz to Alicante and return. Bowditch took sights and observations and made extensive notes for revising Moore's THE PRACTICAL NAVIGATOR. His wife had died of consumption during his absence at sea, and he plunged into mathematical work on shore. On May 28, he was elected a member of the American Academy of Arts and Sciences, founded by John Adams, of Boston, in 1780. Nathaniel Bowditch's revision of Moore's "epitome" on navigation was copyrighted May 24, 1799, but it was not published until the editor had again gone to sea, and, moreover, the new volume did not carry his name, merely referring to "the introduction of several new tables and by large additions to the former tables and revised and corrected by a skilful mathematician and navigator." The printing of this book was just a good start for Bowditch; he had years of hard work ahead of him before he completed his job of revising and elaborating upon the world's standard and "authoritative" PRACTICAL NAVIGATOR.

On account of ill health, Elias Hasket Derby sold the *Astrea* to Boston merchants, who engaged Captain Prince to take her out to the East Indies, and Bowditch was hired again as supercargo and sailed on his fourth voyage on July 22, 1799, bound for Batavia and Manila. The day before leaving Boston, Blunt had visited him and obtained Bowditch's agreement completely to overhaul Moore's work and make "a new and much more seaworthy book" out of it. On this voyage, Bowditch taught members of the crew who wanted to learn and used them as "human guinea pigs," so that he would know how to express himself in regard to celestial navigation and mathematical principles in a way that men with a limited education could understand and to present tables that they could understand and use intelligently. Captain Prince said, "Bowditch has a zest for learning and he communicates that zest." The *Astrea* experienced dreadful weather on the run up the China Sea to Manila, and when she arrived, a Scotchman named Murray declared that Captain Prince had been foolhardy in attempting the journey in the face of the northeast monsoon and through exceedingly dangerous waters, "considering that the crew had so little knowledge of navigation and had proceeded by dead reckoning, not knowing how to take lunars." Prince retorted, "I have a crew of twelve men every one of whom can take and work a lunar observation as well, for all practical purposes as Sir Isaac Newton himself, were he alive." John Stuart Kerr, the agent in the Philippines, declared, "There is more knowledge of navigation aboard that ship [the *Astrea*] than there ever was on all the vessels that ever floated in Manila Bay."

In Bowditch's day, there were no reliable and proven chronometers obtainable at a price an ordinary ship could afford and no fairly accurate way of determining the longitude of a ship's position except by lunar observations. At the time Bowditch was revising the English work on navigation, in 1800, the marine clock of a Yorkshire carpenter was being improved by a Parisian, who devised an instrument that was the direct ancestor of a modern chronometer. Officers of New England ships considered themselves fortunate if they possessed a watch, and having a watch aboard put the captain in the class of a scientific navigator, even though it was seldom reliable. Bowditch well knew the poor time-keeping qualities and erratic behavior of watches, and he declared emphatically that lunars were best. "This method [of using a watch set on Greenwich time] is useful in a short run; but in a long voyage implicit faith cannot be placed in an instrument of such delicate construction and liable to so many accidents."

On September 16, 1800, the *Astrea* anchored in Boston Harbor after a round voyage of 13 months 25 days, and Bowditch was relieved of his duties as supercargo, which he had performed well and with great satisfaction to his employer. Nearly blind from the strain of almost steady figuring in poor light, Bowditch stepped ashore with bundles of manuscript, notes, and tables which were to make a text on navigation far better and infinitely more reliable than that carried in the cabin of any ship sailing the seas. Nathaniel Bowditch's new book was given the formal title, THE NEW AMERICAN PRACTICAL NAVIGATOR. It later acquired the informal name of "the Seaman's Bible," although most seamen simply called it "Bowditch." A copy of the new practical navigator quickly became part of the necessary equipment of every ship and a valued possession of every ship's officer, aspirant to an officer's berth, and apprentices. Capt. Robert Bennet Forbes, of Boston, the famous shipowner, builder, and "Canton captain," going to sea as a boy of thirteen years, wrote: "Beginning in 1817, with a capital consisting of a Testament, a Bowditch, quadrant, chest of sea clothes and a mother's blessing, I left the paternal home full of hope and good resolution." Robert E. Berry says: "Eventually there was to be a 'Bowditch' in most sea chests, and the ship's officer and the seaman were to spread the name of the Yankee navigator with the trade winds and the monsoons."

John Hamilton Moore's English book was far from original, but its form of presentation was compact and admirable. Moore, in compiling the book, had taken the simple, practical formulae for navigation from John Robertson's ELEMENTS OF NAVIGATION (two volumes) and helped himself to tables of Nevil Maskelyne, Astronomer Royal at Greenwich. Bowditch not only found and corrected "well over eight thousand errors" in Moore's work but also "traced two thousand more mistakes back to their source in Maskelyne's REQUISITE TABLES." The Yankee mathematician and navigator had further prepared many new tables and restored those that had been abridged. Some of Moore's errors were very serious, and several masters who had lost their ships put the blame on blunders in Moore's PRACTICAL NAVIGATOR. In Bowditch's new book, the author refused to use any figure or statement of Moore's that he was not able to check and correct, and the work was intended to acquaint the reader with the whole field of tasks of the ship's officer. It contained surveying directions, data on winds, directions for finding the time of high tides, notes on ocean currents, a dictionary of sea terms, statistics on marine insurance, etc. It furnished a wide diversity of instruction in maritime matters.

Edmund M. Blunt was a businessman, and the first volume of Bowditch's THE NEW AMERICAN PRACTICAL NAVIGATOR he took over to London and sold to John and James Hardy and Steele, the English publishers of Moore's THE PRACTICAL NAVIGATOR, at a high price and agreed with the London firm to hold back offering the new book in America until June 1802, at which time the English publishers would be ready to present a printing of their own. Proofs of the Bowditch book were handed the East India Marine Society of Salem, which appointed a competent committee to examine the work, and its report was such a good notice for the book that arrangements were made to print it in the front of the volume. This report of a committee of a society formed to promote better navigation through mutual assistance and deeply concerned with the safe passage of all its members at sea said in part:

From a full examination of the system of Navigation presented to the society by one of its members, they find that he has corrected many thousand errors, existing in the best European works of the kind; especially those in the Tables for determining the latitude by two altitudes, in those of difference of latitude and departure, of the sun's right ascension, of amplitudes, and many others necessary to the Navigator. Mr. Bowditch has likewise, in many instances, greatly improved the old methods of calculation, and added new ones of his own. That of clearing the apparent distance of the moon and sun or stars from the effect of parallax and refraction, is peculiarly adopted to the use of seamen in general and is much facilitated (as all other methods are) in the present work, by the introduction of a proportional table into that of the corrections of the moon's altitude. His table 19th, of corrections to be applied in the lunar calculations, has the merit of being the only accurate one the committee are acquainted with. He has much improved the table of latitudes and longitudes of places and has added those of a number on the American coast hitherto very inaccurately ascertained.

It is said that the appearance of Bowditch's new book "gave impetus to American navigation" and that during the years that Bowditch continued to edit and revise his book on navigation, "the old school of sailing by dead reckoning slowly gave way to a new generation of shipmasters who used celestial navigation—and Bowditch's book was an important factor in this change." The American seaman wanted to be as good in scientific celestial navigation as he was in seamanship. He wanted to navigate by the stars, and Bowditch made it possible for him to do so by giving him a book that could be both understood and trusted. It has been said, "It was due to Bowditch more than any other man that Yankee shipmasters came to be admired for their ingenuity as navigators."

Nathaniel Bowditch had married again on October 28, 1800. He had made an unfortunate investment in a sealing vessel in 1802, and following the publication of his book he was honored on August 25, 1802, with a Master of Arts degree by Harvard University. In September, Bowditch joined with three other men in the purchase of a 262-ton square-sterned three-masted ship (87 ft. long and 26 ft. beam) that was being built in Danvers (just north of Salem). This ship was named the *Putnam* and was registered in Salem on November 9, 1802. It appeared that she had been acquired to make a voyage in the prosperous Sumatra pepper trade, and the ship, with her outbound cargo, represented an outlay of $56,000. Bowditch was made master of the new vessel, having attained a command "by coming in through the cabin window" instead of "through the hawsehole" as did those masters who first served in the forecastle, or "before the mast."

In addition to being the master and navigator of the *Putnam,* Bowditch agreed to act as supercargo and take charge of all the business transactions of the voyage. The vessel sailed from Beverly on November 21, 1802, and on this voyage (his fifth and last long-distance one) Bowditch studied the exhaustive new work MÉCANIQUE CÉLESTE of P. S. Laplace, a French astronomer. As the demand for pepper at the various trading ports of Sumatra exceeded the supply and both prices and graft to obtain any contracted-for deliveries were high, Captain Bowditch decided when he had some 425,000 pounds on board to sail from Tully Pas for home and to stop at the Ile de France en route to pick up some three to four hundred bags of coffee as cargo and needed provisions. The *Putnam* cleared Ile de France on August 31, 1803, and had a very rough passage home. In the North Atlantic, it was severe winter weather with gales, intense cold, and snowstorms. About the middle of December, the *Putnam* was off Nantucket (position known by stars and soundings), and on Christmas Day she was moving along in thick snow with no observations for two days. The stage was set for a display of nerve, courage, confidence, and superb navigation unequaled in the history of sail. It is said that even the old salts who scorned "book navigation" had to take their hats off to Bowditch when the little navigator brought his vessel safely into Salem Harbor in the dark and, by so doing, executed one of the most daring feats of seamanship. An authoritative description of this feat, which Bowditch himself apparently thought but little of, is given as follows in Robert E. Berry's YANKEE STARGAZER:

Captain Bowditch was on deck now, standing continuous watch, he and his officers staring off into the curtain of white that shut them off from a view of everything except the seas smashing at the ship. According to the calculations Bowditch had made after his sight of the sun two days before, he was near the outer harbor of Salem. The officers had little to say about the ship's position. The responsibility was all Bowditch's. It was his ship, and, for all practical purposes, his snow storm.

As it grew dark and the ship continued under way, not only the officers but the crew began to grow uneasy. The *Putnam* was off dangerous shores. Hidden behind the snow were rocks that could shatter timbers and scatter cargo, masts, and rigging in the surf. Salem Harbor's channels were outlined with rocks. One ledge in the harbor had been given the name of Bowditch, after a great-grandsire who had wrecked his vessel on it.

The *Putnam* went on, the officers straining their eyes ahead and the members of the crew watching the little navigator aft who held the safety of the ship in his hands. The snow fastened onto the tops of the yards, whitened sails and sheets, piled in the corners of the decks, coated the clothing of the men on watch.

In holding to his course, in sailing blind toward his home port, Bowditch was doing something that no other seasoned mariner would have done. All up and down the coast other ships ready to make port were standing off and on, waiting for the snow to stop. Going into harbor was too dangerous. . . .

Regardless of the risk Bowditch was taking, the fact remains that he knew where his ship was. He had, in addition, one lucky break. At the entrance to the harbor the snow lifted momentarily—just long enough to confirm the position of the ship. During seconds when there was a rift in the wall of snow Bowditch and his officers were able to see the light on Baker's Island. The one glimpse was enough. The *Putnam* went on in, to dock at the foot of the town of Salem, following a channel through the rocks that Bowditches had been following for generations—a channel that hugged the Marblehead shore, that led around Peach's Point and past shoals called Kettle-bottom, Endeavors, Triangles, and Great and Little Aqua Vitae.

The *Putnam* docked at 9 o'clock on Christmas Day, and Bowditch, in a hurry to be ashore, scrawled the last entry in the ship's log:

"Arrived at Salem Dec. 25, in the evening."

He left it for other seamen to tell the story of his making port in the storm, and the stories grew in the telling as they went up and down the coast to add to the Bowditch legend. One of the most common exaggerations was that the little navigator had sailed into harbor without even a glimpse of a landmark.

Bowditch was a dim figure as he walked homeward through the snow, but nevertheless he was recognized. To the seawise folk of the town Bowditch's presence on such a night meant only one thing—that he had lost his ship. The story swept through the town like fire. And it was logical enough. Bowditch was home. He was home on a night on which no ship could make port in safety. Therefore, the appearance of Bowditch could mean only that he had managed to get ashore safely from a wrecked vessel.

The officers and men, delighted to get home on Christmas, had been amazed and awed by Bowditch's navigation at several points throughout the voyage, but they were thrilled and marveled at his approach to and entry of the rocky harbor of Salem and by his nonchalantly "driving ahead off a dangerous coast in the dark as if it was noonday."

The *Putnam* had completed a successful voyage of 13 months and 4 days and had returned with 467,595 pounds of pepper and coffee, on which a duty of $27,634.57 was paid, and of this cargo, 13,984 pounds of pepper and 14,488 pounds of coffee (bearing a customs duty of $1,563.44) was for the captain's personal account. Nathaniel Bowditch was now through with sea voyages and decided to continue his work ashore, so the *Putnam* was sold. A group of Salem men had formed an insurance company and elected Bowditch its president. In January 1804, the "Yankee stargazer," when thirty years of age, took executive charge of the affairs of the Essex Fire and Marine Insurance Company of Salem, but continued outside of his office work to be a mathematician interested in astronomy and the navigation of the sea. Aside from keeping his "Seaman's Bible" up to date and the foremost publication of its kind in the world (with new revised editions being published about every five or six years), writing innumerable articles of value that contributed to scientific navigation, etc., Bowditch, during the last thirty-four years of his life, was primarily an astronomer, and he spent the years translating and explaining Laplace's immortal work MÉCANIQUE CÉLESTE. Laplace, the son of a poor farmer, has been called "the Newton of France." Bowditch, at his own expense, published the four translated volumes of the master's work, with valuable annotations, in 1829, 1832, 1834, and 1839, the last one appearing shortly after Bowditch himself had died. Simon Newcomb, in his SIDELIGHTS ON ASTRONOMY, has said:

While the great mathematical astronomers of Europe were laying the foundation of celestial mechanics their writings were a sealed book to everyone on this side of the Atlantic, and so remained until Bowditch appeared early in the present [nineteenth] century. His translation of MÉCANIQUE CÉLESTE made an epoch in American science by bringing the great work of Laplace down to the reach of the best American students of his time. American astronomers must always honor the names of Rittenhouse and Bowditch.

The British acknowledged their indebtedness to Bowditch. His book on navigation had made British seafaring men dependent on America, and his MÉCANIQUE CÉLESTE became "an essential to British astronomy." As Berry says: "His was the only translation. And it was not only a translation but an explanation enabling the student to follow the many steps in Laplace's mathematics that had been skipped with the phrase, 'It is therefore clear, etc.' " THE NEW PRACTICAL AMERICAN NAVIGATOR was a book for which there was a tremendous demand. It was "a gold mine" for Edmund M. Blunt and took him and his publishing business from Newburyport to New York. Bowditch's MÉCANIQUE CÉLESTE, the translator and explainer considered his greatest work, but being pure science, by its very nature it would have very few laymen as readers, and only specialized scientists and advanced mathematicians could understand it. For this reason, Bowditch would not sanction any society's bringing out the work by the subscription of people who would not be able to read it, so he spent one-third of his personal fortune in printing the four volumes for the benefit of American and all English-speaking astronomers and the advancement of science.

Incidentally, Bowditch was as self-taught in languages (Latin, French, Spanish, etc.) as he was in mathematics, astronomy, and navigation. Nevertheless, conservative Harvard offered him the Chair of Mathematics and Natural Philosophy in 1806, Jefferson sought him for the University of Virginia in 1818, and the secretary of the navy asked him to come to West Point in 1820. In 1810, Harvard elected him an overseer, and in 1826, as "an eminent scholar," he became a member of the Corporation of Harvard, which was a group of seven men who controlled the university. The American Academy of Arts and Sciences made Nathaniel Bowditch its president, and the one-time poor Salem boy, who had had no schooling except in the elemental "3 R's," was honored as the greatest American mathematician and scientist and one of the country's leading scholars of his day.

However, after leaving the sea, Bowditch surveyed and mapped the harbors of Salem, Marblehead, Beverly, and Manchester, and that this work was of importance is attested by the fact that the Salem Harbor pilots pronounced the Bowditch chart "an outrage," for it would, they contended, "deprive them of a living."

In the first decade of the nineteenth century, William Gray, America's foremost shipowner, moved from Salem to Boston and started an exodus of important men from the smaller towns to "the Hub," which had a superior harbor and was destined to be the metropolis of New England. In 1823, Nathaniel Bowditch moved to Boston to become president of the Commercial Insurance Company, handling fire and marine policies, and actuary of the Massachusetts Hospital Life Insurance Company. At a farewell dinner given in his honor in August, the town of Salem was toasted, and it was said: "She may boast of the honorable but painful distinction of producing men whom her neighbors will not permit her to retain."

The men who had actually sailed with Bowditch, whether in the forecastle or on the quarter-deck, were proud of the fact and were envied. This experience was an admitted great asset, and the assertion "I sailed with Bowditch" was a statement that won many an officer's berth. Nathaniel Bowditch died of cancer at his home in Boston on March 16, 1838, and as the news of his death during the next days, weeks, and months traveled around the world, the flags of ships were lowered to half-mast, and the officers and crews of vessels in the harbors of the globe deplored the loss of the author of the "Seaman's Bible" and a friend. "As long as ships shall sail, the needle point to the north, and the stars go through their wonted courses in the heavens, the name of Dr. Bowditch will be revered" (Salem Marine Society, March 1838). Bowditch's THE NEW AMERICAN PRACTICAL NAVIGATOR lives on, but it is now a publication of the United States Hydrographic Office at Washington and is known as AMERICAN PRACTICAL NAVIGATOR, with the text "originally by Nathaniel Bowditch, LL.D."

The Columbian Ready Reckoner—an Aid to Navigation Devised by John Fitch in 1793

When John Fitch landed in France in 1793, he had a vision of building steamboats for Aaron Vail, who had bought the European rights for steamboats from Fitch's American company and had money, influence, and connections. Whereas France was in the throes of a civil upheaval, it was believed that the revolution would be short and of benefit to the country, with the lot of the common man and the middle classes improved, initiative, business, industry, and agriculture encouraged, and France made the most democratic and prosperous nation on earth. But by the time Fitch reached Paris, the Girondists (moderate, or conservative, republicans) had been overthrown, and the revolution was moving rapidly to the left and toward a diabolical reign of terror.

Count Brissot de Warville, the French traveler who had been impressed by Fitch's steamboat on the Delaware in 1788, was in prison, and Thomas Paine, the champion of the rights of man, who had been made a citizen of France, was in hiding. No Americans were popular in France, and although Paine saw Fitch and greeted him cordially, he could be of no service to him and was daily fearing arrest. Fitch stayed with Aaron Vail, his backer, at Lorient, and castings for the engine of the first boat were ordered from a foundry in Nantes; but when Fitch visited that city to see about his work, he found the place the center of a bloody civil war (the counter-revolutionary insurrection known as the Wars of the Vendée).

As the revolution put a stop to all chances of building an engine in France, Vail sent Fitch to London to buy one in England. While making this passage by sea, Fitch kept his mind busy, was interested in the course of the ship, and as a result of his original thinking and research the "inventor of steamboats" worked out "a chart by which it was possible to determine a vessel's traverse without the use of geometry or logarithms." This voyage was Fitch's third venture on the ocean. He tells us that he was afraid of the water and that during his first voyage from the St. Lawrence to New York as a prisoner being exchanged during the War of the Revolution, he was seasick all the time and developed a great "disgust to the sea." On his second voyage—an eastbound Atlantic crossing—he was buoyed up with the opportunities that awaited him to build steamboats in the new French Republic, a land of opportunity and social equality, liberty and fraternity; but when he traveled from France to England, he was disillusioned (and about to become more so) and was well enough during a slow but pleasant passage to watch the operation of a sailing vessel.

Fitch worked out a method which, by means of a graph, or chart, would "reduce the art of navigation to the smallest capacity," and he was positive that his device was a very important and valuable invention that would prove of benefit to skilled navigators and be of great helpfulness to the many sailors of ships who had not been favored by much schooling. When Fitch landed in London, before he made any attempt to contact Vail's agent (named Johnson), he purchased a piece of copper, engraved his chart upon it, and published, with descriptive matter, "An Explanation for Keeping a Ship's Traverse at Sea by the Columbian Ready Reckoner," printed and published by John Fitch, London, 1793. When Fitch went down to see the masters of British ships and offered his invention, instead of being hailed as a benefactor, he was abused as a man over from France with revolutionary leanings. The British officers who knew how to navigate a vessel did not want the mystery to be made simple for ordinary minds to understand, and they were indignant at the thought that an American republican (who, they felt, was tainted with the horrors taking place across the Channel) had created a device which, if it really worked as claimed and as seemed promising, would be revolutionary in its effect and enable any common seaman to know as much as his officers and even to become an officer himself with a little expenditure of mental effort. Fitch found that he could not interest British masters and officers in his "Columbian Ready Reckoner"; he was treated as a dangerous radical and hustled off all the ships that he visited. The British captains were definitely and belligerently opposed to the very idea of short cuts and simplification, and they would not even discuss the "Ready Reckoner" with him. As a result of what knowledge they had mastered, they had gained a privileged position, and they wanted to keep it by having navigation as involved, difficult, and mysterious as possible for others. They felt that Fitch was attacking the worth and security of their jobs.

Fitch found that the revolution kept him from doing any business in the interest of the French steamboat in England. Vail's draft would not be honored in Britain, as it was high treason to negotiate French bills of exchange, and Fitch could not buy any machinery, because of the blockade could not get back to France, and could not get any word to Vail; neither could he get any funds to live on. He was finally compelled to negotiate for a steerage passage to Boston, agreeing to work out the price of his fare—which he did—when he was landed in the United States. In Boston he found a prejudice among sea captains against his "Ready Reckoner" almost as rabid as it was among the Britishers, and it would seem that he never succeeded in getting ships' officers to try it, although he had some correspondence with Catherine the Great of Russia about its printing and sale in her domains.

X.

THE SAILING PACKET ERA

The Atlantic "Shuttle" and Coastal Packet Trade

FROM the time (1818) that the first sailing packet line operating on schedule was inaugurated, throughout the remaining years of the era of sail, the United States dominated the north transatlantic carrying trade. As the general cargo, cabin passenger, and immigrant business increased during the four decades preceding the Civil War, it was United States-built and operated bottoms that obtained the lion's share of the trade, and this because of well-built and excellently managed ships—whether they were packets sailing on regular schedules, general (or regular) traders operating irregularly between certain transatlantic ports, or transients picking up cargoes and occasionally passengers wherever they could be found and transported at a profit. The general traders running irregularly between certain ports were especially designed or, later, adequately equipped to carry immigrants on the westbound passage, and many of these vessels had good accommodation for cabin, or first-class, passengers. Transatlantic sailing packet lines operated between many American ports (New York, Boston, Philadelphia, etc.) and European ports, such as Liverpool, London, Havre, etc., but the New York lines from the first outclassed all others and throughout the entire era of packet sail not only dominated and enjoyed a major part of the business but also held practically a monopoly of the transatlantic trade.

Steadily, throughout a period of some forty years, the size and quality of American transatlantic sailing packets increased; more, bigger, and better ships were put in the service, and from the late thirties to the late fifties the business grew by leaps and bounds, with its expansion in the aggregate but little affected prior to the late 1850's by the competition of steam and of British iron. During the forties, the number of passengers entering the United States by East Coast ports increased nearly three-and-a-half-fold per year. In 1854 the number of arrivals was in excess of four hundred sixty thousand, and during the nine-year period ending with 1854 the annual average was 271,867. The peak in the passenger trade was reached in 1854 following the California Gold Rush boom, but when a depression set in, emigration was seriously affected, and in 1860, prior to the Civil War, transatlantic passenger traffic westbound was only 40 per cent of that of 1854 and 57 per cent of that of 1850.

The big increase through the years in transatlantic passenger travel westbound, with a steady and pronounced gain in cargoes demanding fast transport facilities, naturally led to a substantial expansion of the sailing packet service up to the mid-fifties, which was "almost exclusively dominated by United States ships" and, moreover, largely by the packet lines operating on regular advertised schedules out of the port of New York. From Albion's SQUARE-RIGGERS ON SCHEDULE, we learn that the number of sailing ships engaged in the two-way transatlantic packet service from New York to Europe, in which the best liners were used, rose from thirty-six in 1830 to forty-eight in 1840 and fifty-six in 1855. In the latter year, twenty-four ships were operating regularly in the run from New York to Liverpool and sixteen ships in each of the London and Havre services. Evidently, these New York transatlantic sailing packet lines had capable as well as farsighted managements. From the start, they coped successfully with exceedingly keen competition by constantly improving the service and by substituting from time to time not only larger vessels to meet trade demands but also faster, more dependable, safer, and better-equipped and appointed ships. The famous pioneer Black Ball Line added twenty-one ships to its fleet between 1830 and 1855; the London Red Swallowtail Line, nineteen; the London Black X Line, eighteen; the Liverpool Blue Swallowtail Line, seventeen; the Havre Old Line, sixteen; the Liverpool Red Star Line and the Havre Whitlock Line, eleven each; the Collins and later Spofford & Tileston's Dramatic Line to Liverpool (which entered the field in 1836), ten; the Havre Second Line, seven; and the New Line to Liverpool, five.

The New York-southern port (feeding and distributing) coastal packet lines, with square-rigged ships operating regularly on schedule, had twenty-eight vessels engaged in such service in 1830, thirty-three in 1840, thirty-two in 1850, twenty-eight in 1855, and twelve in 1860. These lines ran between New York and Charleston, S. C. (1822-1855), Savannah (1824-1845, but virtually discontinued in 1839), Mobile (1826-1840, but continued as "cotton triangle"), and New Orleans (1821-1861, when operations ceased because of the Civil War). In 1830 fifteen of the New York coastal sailing packet ships ran to Gulf ports (New Orleans and Mobile); in 1840, twenty-one; in 1850, twenty-two. In 1855, twenty-four packets—out of a total of twenty-eight—ran to New Orleans (and the remaining four to Charleston, which discontinued operating the line that year), and in 1860 all the twelve New York-southern port coastal sailing packets in service were operating in the New Orleans lines.

The New York transatlantic packet lines so dominated the Atlantic "ferry" in the realm of sail that they quickly killed off or wore down all competition, both domestic and foreign. The Cope Line, operating from Philadelphia, hung on for many decades, but its sailings were relatively few. Boston made many heroic and greatly advertised attempts to get a good share of the transatlantic packet business, but even though Boston had the geographical advantage of being nearer to Europe, it could never compete with New York as a port and terminus in the packet trade; neither did Boston build the ships that New York did nor have the men to manage the lines. One of the last Boston transatlantic sailing packet lines was inaugurated by Enoch Train in 1843. He used several ships as the years advanced, some of which were new and built by his protege, Donald McKay, but this much-heralded line fared no better than its predecessors in competing with the admirably equipped and managed New York packet lines. No foreign sailing packet lines of any significance appeared in the transatlantic trade prior to the founding of the Hamburg American Line in 1847, which entered the field with four 700-ton ships built in a north European low-cost shipbuilding area, where timber was both plentiful and cheap and, moreover, wages were low.

The report of the British Select Committee on Merchant Shipping in 1844 acknowledged the fine quality and great prestige of American sailing packets and stated that much of the good reputation won and held, with the freely expressed preference of shippers that the United States lines enjoyed, was due to the superiority in design and construction of American ships, to prompt sailings as per advertised schedules, to able commanders, and to both the driving and maintenance of the ships, which resulted in fast passages and the discharge of cargoes in excellent condition, all of which added to prestige as well as to revenue. American ships, because of the superior service given, commanded and readily obtained higher freight rates than other vessels. Not only the United States-built and operated sailing packets were admitted by the British to be superior to their ships but also the general traders, transients, and combination ships were acknowledged to be better vessels than their own, type for type. The American second-raters received better patronage than British ships in the Atlantic trade, and in bad times the owners of these American ships sailed them westward with only immigrants and ballast aboard and still made money. Generally, during this period, a good deal of cotton moved eastward, and with such cargo—and but few passengers—the ships rode light and made fast runs. On the return, or westward, passage, the cargoes normally consisted of such heavy articles as iron, coal, salt, machinery, manufactured goods, copper, etc., which worked in well, for the 'tween decks were generally occupied by passengers to near capacity.

Although the British Government looked longingly at this carrying trade, British owners testified that the capital charges on comparable high-cost British-built vessels made competition impossible. This situation was one of the prime circumstances that led to the establishment in 1840 of the British subsidized steamship service. Steam vessels, however, secured only a very small proportion of the entire transatlantic passenger business until the sixties and the period of the Civil War. The report of the New York Chamber of Commerce stated that only 3.6 per cent of the total number of passengers (all classes) arriving by vessel at the port of New York during 1856 was carried on steamers. It is evident that up to the latter part of the clipper ship decade (1850-1859), which immediately followed what can be called the sailing packet era, the big American-built and operated sailing packets dominated the North Atlantic and controlled a major portion—and the most desirable part —of the transatlantic trade (excluding the cabin passenger and fine express freight business that went to steam following the mid-century), with American general traders, transients, and combination ships handling a large percentage of the balance. During the era of sail, Britain was never Mistress of the Seas following the War of 1812 as far as leadership, class of ships, and their operation in the merchant marine were concerned.

The early packet lines were not corporations nor even absolute mergers into one company of certain ships, shore and floating properties, and other assets. The operations of the vessels were controlled and managed by the line in strict conformity with a general actuating plan, but usually the agents, builders, and later the captains of the individual ships were part owners of the vessels. The builder, maintaining an interest in a ship (measured as a fraction—say, one-eighth), secured the job of making all necessary repairs or desired reconditioning and reconstruction during the life of the vessel in service. The sailmaker, blockmaker, and others who expected to make money out of the operation of the ship were often part owners. The agents were financially interested in the ships operated, and even though the pioneer Black Ball Line was originally opposed to the idea, it was generally felt that the command should be a part owner if the ship was to be handled with the extra drive, energy, careful planning, and economy that were necessary for her to be a moneymaker, especially during the days of severe competition. The packet lines competed with general traders and transients (or sailing tramps) and with each other, but each ship of a packet line competed with every other ship, and the rivalry among the commands of packets was very keen.

During the first half of the nineteenth century, the Atlantic "ferry" was almost entirely in the hands of Americans, and as long as sailing packets handled the trade, the United States controlled the business with American-built wood ships, commanded by Americans and owned by Americans. The newspaper shipping columns headed by cuts of sailing ships, which advertised the departure or arrival of sailing packets, referred to lines and individual vessels that were all American, every one of them, and it was not until the forties (following the crossing of the steamers *Sirius* and *Great Western* in 1838 and the inauguration of the Cunard subsidized steamship service with the *Britannia* in 1840) that Britain entered the arena and fought with steam America's overwhelming supremacy in sail. Again, it was not until 1848, when the British subsidized Cunard Line of steam packets commenced regular sailings between Liverpool and New York direct, that British steam commenced to cut perceptibly into the business of American sail in cabin passenger and fine express freight patronage. In this fight for ocean trade, the United States would never have been defeated if the country had been a united whole and had encouraged and supported by subsidies, as did Britain and all other maritime powers, the building and operation of steam packets and later the substitution of iron screw steamers for wood side-wheelers.

Transatlantic Passages—Both Eastward and Westward—before and during the Sailing Packet Era

Prior to the inauguration of the packet service, American ships made fast transatlantic passages, and in 1804 the *Oliver Ellsworth* (410 tons; built at Norwich, Conn., in 1801; length 111.6 ft., beam 28.8 ft.) reported making an eastbound crossing from New York to Liverpool—evidently from Sandy Hook to the Mersey, or land to land—in 14 days. Captain Bennett, in command of this vessel, stated that on one occasion, later, the *Oliver Ellsworth* "ran a pursuing British war vessel hull down in an hour and forty minutes to the music of her bow chasers."

The ship *Fanny* (239 tons and only 86 ft. long, built by Samuel Ackerly, New York, in 1792) arrived at New York May 29, 1806, claiming a westbound Atlantic passage from Greenock, Scotland, of 23 days. The *Rebecca Sims* of 400 tons, built by Bowers of Philadelphia (sunk to blockade Charleston during the Civil War), is said to have left Cape Henlopen May 10, 1807, and taken pilot aboard off the mouth of the Mersey May 24 after a run of 14 days (also reported as 15 days, land to land).

The ship *Alert* of Boston (Captain Nichols), a regular trader in pre-packet days, arrived at Boston in April 1811, having made "the extraordinary short passage of 20 days from Liverpool." In the same month the brig *Osmin* (Captain Wheldon), it was reported, arrived at Philadelphia 19 days out from Rochelle, both of these westward crossings being phenomenally short runs and "records of the time" to their respective ports. In 1812 the *Lady Madison* of 450 tons (Captain Swaine), built at Scituate, Mass., in 1810, is said to have arrived at New York on April 4 "in the unprecedented time of 18 days"; she reported being on the Grand Banks 9 days out. The *Lady Madison* was 112 ft. long and 30 ft. beam, and no vessel equaled this fast run for over seven years. The ship *Triton* (Captain Holcomb) arrived at Boston April 23, 1819, after a reported crossing of 18 days from Liverpool. This passage was over a shorter distance than that negotiated by the *Lady Madison* in her record run to New York in 1812, but the *Triton* distinguished herself and set a record in making "a round voyage from the United States to England and return in the unequaled time of 37 sailing days"—an achievement rarely surpassed since that time by larger and presumably faster packets. It is said that the ship *Herald* of about 300 tons (built at Newburyport, Mass., in 1819) left Liverpool December 5, 1819, and arrived at Boston December 23, "making a record crossing of 17 days" and claiming the sailing honors for the fastest westward passage then held by the *Lady Madison.* It would seem, however, that the *Herald* made an 18-day and not a 17-day crossing, port to port, and, moreover, had the benefit of probably a day due to shorter distance.

The ship *Milo,* under Captain Glover, who supervised her construction when built at Newburyport in 1811, was a fast vessel whose command claimed many fast passages. In February 1812, she arrived in Liverpool 18 days out from Boston, but she is said to have made a crossing between the same ports in 15 days. In 1829 this small ship of 398 tons (with a length of 107 ft. and a beam of 29 ft.) covered 1,730 miles in nine consecutive days on a run from Boston to Hamburg, Germany, averaging 8 knots per hour for the period.

Capt. Thomas Britton of the trader *Josephine* reported that in 1829-1830 his little vessel, favored by heavy easterly and northeasterly winds, had made the run from Belfast to New York "in the record time of 15 days and 12 hours"; no dates (not even the month) were stated, but the crossing was admittedly from "land to land," ended at Sandy Hook (point of commencement somewhere off the coast of Ireland and unknown), and was not "port to port," or comparable with the recorded length of passages of the New York Western Ocean packets.

These early transatlantic speed records are not comparable with the sailing performances of the packet ships of the regular New York lines, which, commencing with the Black Ball Line operating between New York and Liverpool in 1818, considered the length of a passage from port to port (or "city to city") and not from light to light, land to land, or pilot to pilot. The commands of early traders and of general traders and transients, after the advent of the regular scheduled packets, made claims for short runs across the ocean between points that did not constitute the entire passage, and these quick runs were seldom verified; but the sailing performances of packet ships, port to port, were well and easily checked by the press and by both rival and friendly shipping interests, and they were given much publicity.

The Black Ball liner *New York I* (516 tons) sailed from New York City on December 16, 1823, and arrived at Liverpool on New Year's Day 1824 after "an amazing fast passage of 15 days and 16 hours from city to city." Her average speed across the Atlantic was stated as "about 8¾ knots per hour." This performance was proclaimed as a record for a completed passage by the shipping fraternity as was the crossing of the new Black Baller *Isaac Wright* of 1,161 tons in December 1847, which made a passage between the same ports on her maiden voyage in 13 days. Incidentally, several months later, the general trader *Richard Alsop* in 1848 claimed a run of 14 days eastbound from New York to Liverpool, but this was admittedly a land-to-land crossing from Sandy Hook to Holyhead and is comparable not with the sailing performances of the packet ships, port to port, but with that of the general trader *Oliver Ellsworth.* Forty-four years earlier—and fourteen years before the sailing of the pioneer Western Ocean packets—she had claimed a 14-day crossing from Sandy Hook to the Mersey, which, like the run of the *Richard Aslop,* was probably a 16-day passage, port to port, or dock to dock.

The packets *Fidelia, Daniel Webster,* and *Southampton,* also the *Washington* and the *Dreadnought* (the latter two or three times) are credited with eastbound passages, port to port, of between 13 and 14 days; the *Jacob A. Westervelt* is said to have made a 14½-day eastward crossing, and the packets *Independence, Montezuma, Yorkshire, Patrick Henry,* and *St. Andrew* are credited with passages from New York to Liverpool of 15 days. Many of the larger sailing packets made an eastward crossing, port to port, in 16 days, and few there were of the better packets which did not succeed in making the run at some time or other in 17 days.

During the clipper ship era and the building of a few medium clippers or clipper packets for the Atlantic trade, rival speed enthusiasts again introduced the practice of recording and advertising "smart runs" across the Atlantic eastbound as crossings from point to point and not from port to port. Donald McKay and Enoch Train (owner of the Train White Diamond Line operating between Boston and Liverpool) boasted of the McKay-built packet *Daniel Webster's* making in 1851 an eastbound crossing from Boston to Liverpool in 13 days 10 hours, but this was a passage not between ports but from Boston Light to Rock Light; moreover, Boston is closer to Liverpool than is New York, and the "record run" of the *Daniel Webster* was not comparable with the many 15-day passages made by packets in the New York-Liverpool service. Later, in 1864, the clipper packet *Adelaide* of the Williams & Guion "line" claimed a passage of only 12 days and 8 hours from New York to Liverpool, but the time stated was for the run from Sandy Hook to "land," and the completed passage, port to port, probably did not equal the time made by the *Isaac Wright* and possibly other packets.

Claims have been made by the commands of a few sailing vessels of record transatlantic crossings eastbound of 9 to 10 days—land to land, light to light (or rock), or point to point. The most important, serious, and plausible claim for such a record-making run is that of Capt. S. Samuels of the *Dreadnought,* who claimed a run of 9 days 17 hours for that packet from Sandy Hook to the pilot boat off Queenstown Harbor. The command of the *Guy Mannering* (1,419 tons), built by W. H. Webb in 1849 for the Williams & Guion Black Star Line, claimed two transatlantic point-to-point passages of between 9 and 10 days for that ship, but no records were presented for verification. Some of the much later-built, big iron and steel four-masters have reported remarkably fast eastbound transatlantic passages, one—the *Romsdal*—even claiming a crossing of 10 days from New York to Liverpool, a performance that undoubtedly was grossly exaggerated and probably refers to the time taken between certain points en route, but positively not from port to port.

Westbound, the fine-lined, heavily canvased clippers could not compete with the packets on the Western Ocean. The "unprecedented" fast Atlantic crossings of the early pre-packet days by regular traders of some 18 to 20 days were all from land to land and were not comparable with packet ship records. The Black Ball liner *Yorkshire* (996 tons), in November 1846, made the passage from Liverpool to New York in 16 days, city to city, and in 15 days, land to land. Much was made by owners and builders of a fast 18-day crossing from Liverpool to New York of McKay's big packet *New World* of 1,404 tons, owned by the Blue Swallowtail Line, but ten New York transatlantic sailing packets are credited with westward passages, port to port, of 18 days or better as the following record shows:

Name of Packet	Passage in Days	Tonnage	Built	Line
YORKSHIRE	16	996	1843	Black Ball, Liverpool
HARVEST QUEEN	16	1,383	1854	Black Ball, Liverpool
COLUMBIA I	17	492	1821	Red Swallowtail, London
CALEDONIA	17	647	1828	Black Ball, Liverpool
NORTHUMBERLAND	17	817	1844	Black X, London
BAYARD	18	339	1819	Second Line, Havre
GARRICK	18	895	1836	Dramatic, Liverpool
WEST POINT	18	1,046	1847	Red Star, Liverpool
CONSTITUTION	18	1,327	1846	Blue Swallowtail, Liverpool
NEW WORLD	18	1,404	1846	Blue Swallowtail, Liverpool

Seven of these ten very fast westbound Atlantic packet passages were from Liverpool to New York, two from Portsmouth (the port of London for passengers and mails), and one from Havre, France.

The captain of the Black Ball liner *Fidelia* of 895 tons (built by Webb, New York, in 1845) reported a westward crossing for his ship in 1852 of 17 days 6 hours from N. W. Lightship to Sandy Hook, but the best crossing of the *Fidelia* westbound, port to port, according to official line records for completed passages, was 21 days and her average, 33 days. The Liverpool Red Star liner *Waterloo* of 892 tons (built in 1845) is said to have made an 18-day westward crossing, land to land, in 1852, but her best official time, port to port, is stated as 21 days and the average of her westbound passages, 32 days.

The records show that some very fast passages were made across the Atlantic to the westward by early American packet ships. The *Columbia,* originally of the Black Ball New York-Liverpool line (built by Sidney Wright, New York, in 1821, but acquired by the London Red Swallowtail Line and placed under the command of Captain Delano), sailed from Portsmouth, England, at noon on April 1, 1830, and arrived off Sandy Hook (where she was becalmed) during the night of April 16 after—it is claimed—"a record westbound passage of only 15 days and 18 hours," during which the sailing packet made "an average speed of about 8½ knots per hour." The *Caledonia* of the Black Ball New York-Liverpool packet line (647 tons; built by Brown & Bell, New York, in 1828), under the command of Captain Rogers, sailed from Liverpool the same day and arrived off Atlantic Highlands, New Jersey, about the same time, after a run reported as 15 days and 22 hours out from Liverpool and completing—it is said—"a round trip of 59 days, of which only 36 were spent at sea and on one of these days the vessel lay becalmed." Each of the fast westward crossings of the *Columbia* and *Caledonia* was, in fact, a 17-day passage from port to port, for this was the time required by each ship to complete the passage; the actual time between the departure and the arrival is the only accurate and conservative measure of recording runs and is sound in an economic sense. The *Caledonia's* career as a transatlantic packet covers eight years (1828-1836), and during this period her average time for westward passages, port to port, was 37 days as against 29 days for the *Yorkshire.* The *Columbia I,* from 1822 to 1826 on the Liverpool run as a Black Baller, averaged 34 days for her westbound passages; but as a London Red Swallowtail liner, in which service she made her record 17-day passage, her average for about seven years (1827-1833) was 36 days.

The Boston-Liverpool packet ship *Emerald* of the "Jewel Line" (Capt. Philip Fox), which was of 359 tons and only 110 ft. length by 27 ft. beam (built by John Wade, Boston, in 1822), was reported to have arrived at Boston on March 9, 1824, after a passage of only 15 days 14 hours from Liverpool to outside Boston Light, where she was becalmed, and to have made a completed crossing of 16 days 21 hours, port to port. This—if correct—was an amazing feat for the small packet, and to appreciate the performance it has only to be compared with the 16-day record westward packet passage of the *Yorkshire,* port to port, and some 15 days, land to land (she left Liverpool November 2, 1846, was at Sandy Hook November 17, and at her dock in New York at noon November 18), and with the *Andrew Jackson's* all-time record transatlantic passage westward of 15 days from Liverpool to Sandy Hook (where she arrived November 18, 1860). The *"Jackson,"* which holds the all-time westward record around Cape Horn to California, was a big and powerful medium clipper of 1,679 tons (built at Mystic, Conn., in 1855) and was 4.7 times as large as the *Emerald,* over twice as long, and built thirty-three years later. Moreover, the *Emerald* was "short and chunky" and, although admittedly "extraordinarily fast" in her day, like all sailing ships making a phenomenally fast run westward "came over with a roaring easterly"—a most unusual condition of wind and sea—which Captain Fox (notorious for carrying sail) asserted did not occur more than once in a century. The transatlantic course between Boston and Liverpool (or any other British or European packet port) is shorter than between New York and these same European ports, and the passages are, therefore, not strictly comparable, Boston being generally deemed to have an advantage of about a day in the era of sail.

The early Boston transatlantic packet ship *Emerald* should not be confused with the *Emerald* (518 tons; 128.5 ft. length, 29.8 ft. beam, and 20 ft. depth) built in New York in 1835 by Brown & Bell, which saw service as a New York-Havre (Whitlock) packet and as a Baltimore-Liverpool packet. As a New York transatlantic packet, for eight years (1838-1846) the *Emerald* averaged passages of 36 days for the westbound run, port to port; her best crossing in this service was made in 21 days and her slowest in 51 days.

Clipper ships occasionally made fast transatlantic runs eastbound, land to land, reported as from 12 days and 8 hours to 13 days and 21 hours or more, but they failed to show up well when required "to buck the westerlies" on the westbound crossing with either land-to-land crossings or port-to-port passages. None of McKay's big and famous clipper speedsters, although amazingly publicized, even with their imaginative and boastful commands, ever made a transatlantic westbound passage sufficiently fast to warrant any claim being made for unusual, not to mention record, speed. Of all the clipper ships in the much-publicized clipper ship era, only one, the *Andrew Jackson* of 1,679 tons (and she was a medium and not an extreme clipper), made a record or a near record passage when sailing across the Atlantic to the westward. This was a passage made not against the generally prevailing westerlies but with favoring and unusual east and northeast winds.

North Atlantic Packets—an Important and Distinctive Type of Sailing Ship

Albion, in his introduction to SQUARE-RIGGERS ON SCHEDULE, which is the only sound study of sailing packets ever made, says:

> Three large groups of ships in the old American merchant marine won particular distinction. The whalers were interesting for their adventurous prowling into distant seas. The clippers had a strong emotional appeal with their beauty and their speed. Finally there were the packets, or sailing liners, more important than either of the other groups in their functions and lasting effects. For a while they served as the chief link between the Old World and the New; . . . they clearly demonstrated the value of the line arrangement with scheduled sailings, and incidentally they made more money than most of the whalers or clippers. Nor was adventure lacking in their grim assignment to steady service in battling the gales of the North Atlantic, through which they were driven to the limit.
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> The story of the ocean packets falls into three periods of almost exactly twenty years each. During the first period (1818-1838), the functional importance of the packets was at its height, for they conveyed most of the news, cabin passengers, and fine freight between Europe and America. During the next twenty years, this functional importance was reduced by steam competition, particularly after 1848, but the ships themselves increased in size and in speed until the mid-fifties. . . . After that, there were no new features in the packet service; the ships even lost the steerage trade and became simply carriers of the less valuable freight. The Black Ball Line, however, lasted a full sixty years to 1878, and one of the London lines continued fairly regular operation until early in 1881. . . . The coastal packets were at their height during the twenties and thirties, with routes to four major cotton ports. By the Civil War, New Orleans alone, the most important, retained this service.

This interesting digest, whereas essentially correct, needs both clarification and elaboration. Instead of "three large groups of ships in the old American merchant marine" that "won particular distinction," there were four; the "Down Easter" has to be added to the whaler, the clipper, and the packet. Moreover, chronologically, the order is the whaler, the packet, the clipper, and the Down Easter, and the latter type of sailing ship represented practically the sole attempt of Americans to keep the Stars and Stripes in deep-sea trade following the Civil War. The whaler dates from the early eighteenth century to the mineral oil era of the sixties of the nineteenth century and even beyond. The transatlantic type of regular traders (and transients), which first appeared as sailing packets in 1818, were for many years similar to the whaler type of ship as far as sturdiness, fullness of model, and seaworthiness were concerned, and a large number of the packet ships engaged in the whaling trade when they were no longer large or fast enough for the Western Ocean passenger and freight packet service.

The sailing packets, for many long years after the advent of steam on the North Atlantic in 1838, successfully fought the competition of the steam vessels; they were not beaten until well into the fifties, and then only by the power of government subsidies and the development in Britain, through such encouragement, of the iron screw steamer. The sailing packet held her position well and was operated profitably in the North Atlantic until the subsidized Collins Line of American steam packets raised materially the quality and speed of steamer competition, and this occurred at the dawn of the clipper ship era. In the early fifties, the clipper ship influenced the design of many of the transatlantic packets, and some clipper packets were built, but the clippers were too sharp modeled and too loftily sparred and overcanvased for the North Atlantic trade. Not a single extreme clipper was successful in the transatlantic packet service; a few clippers made fast crossings on the eastbound run benefited by strong favorable winds, but not one of them made an outstanding westward crossing beating against the wind, as was necessary on most westbound passages. The packet model and rig proved superior to the clipper design on the North Atlantic, and the Down

Easter, which superseded both types and carried the American flag on the ocean trade routes of the world from the Civil War to the end of the century and the end of merchant sail, was a type that was evolved from the Western Ocean packet of the forties and the Maine "half clipper" of the fifties.

Albion refers to the New York sailing packets, which in their day absolutely dominated the North Atlantic trade, as "tough ships" operated—from captain down to foremast hand—by "tough men," and he writes:

In all the history of merchant ships under sail, there was probably no sturdier group than the New York packets on the North Atlantic run, nor any group better adapted to the work at hand. Their builders knew how to fashion faster vessels, but the owners did not want to sacrifice cargo space to speed. Less rugged ships, moreover, could scarcely have withstood the gruelling punishment of the westbound passage, the grimmest steady assignment for any merchantman. Consequently, the packets were given stout hulls, tough enough to bear the strains in winter seas and roomy enough to carry profitable cargoes. Then, with potential speed deliberately reduced in construction, the owners expected the officers and men to make up the deficiency as far as possible by constant driving. Such a group of ships naturally suggests comparison with their much-touted successors, the clippers. In contrast to the more than three hundred clippers crowded into a single decade, there were only one hundred and fifty of the New York "Western Ocean packets" spread over thirty years and about one hundred somewhat smaller full-rigged ships in the coastal packet lines; not until 1858 did the total number of packets about equal that of the clippers. The clippers were faster, and that has appealed to those who consider ships from the viewpoint of the sports-writer, interested primarily in the breaking of records. They have also attracted the artist, because of the exquisite symmetry of their lines, although the packets had their full share of the beauty inherent in most full-rigged ships. But from other standpoints, the performance of the packets was decidedly the more impressive. They served a vital economic and communication function and generally paid well; an economic history of the clippers would probably find the story of many written chiefly in red ink.

Much emotional twaddle has been written about the clipper ships. As a matter of fact, it is extremely difficult, if not impossible, to differentiate between a clipper and a fine- or medium-lined loftily sparred and abundantly canvased fast sailer. There are out-and-out, or extreme, clippers; ordinary, or plain, clippers; medium clippers; semi-clippers; half clippers; packet clippers; and packet medium clippers. Robert G. Albion well answers the question, "What is the difference between a packet and a clipper?" by saying:

Technically, that is equivalent to asking "What is the difference between a postman and a thin man?" The packet, like the postman, represents a functional distinction, implying regularity of service on a particular run. The clipper, like the thin man, was a structural distinction; it implied a streamlined vessel especially designed for speed. It was quite possible, though not common, for a vessel to be a packet and a clipper at the same time—the *Phoenix* of the New York-Liverpool Red Star Line was rated as both. Ordinarily, however, the packet was a vessel of sturdier and more "burthensome" build, while the clippers, from the functional standpoint, were primarily designed for the routes to California and China. Historically, the packets remained prominent for at least thirty years (roughly 1818-1848), whereas the feverish clipper activity was mostly concentrated into six or seven years following 1848. From the economic standpoint, the packets undoubtedly yielded to their owners much greater profits in the long run than did the clippers—after the first few clipper owners had skimmed the cream of the Pacific trade.

Transatlantic and other packets and later the American Down Easters were not as fast as clippers under certain conditions of wind and sea, but they carried considerably more paying freight and were less expensive to maintain. Yet it has been well said, "Profits did not completely crowd out romance on the North Atlantic run—adventure was not limited to the storms off Cape Horn." The clipper packet *Phoenix,* mentioned by Albion, was a big vessel of 1,487 tons, built in 1853 for speed during the height of the clipper ship era; yet this fine-lined, fast, and well-built ship required two days longer on the average to make her westward passages (and this while experiencing much better luck as to weather) than the 996-ton packet *Yorkshire,* built ten years before her. The best westbound crossing of the *Phoenix* occupied 26 days, but the *Yorkshire* covered the course in 16 days (or ten days less time), the record for sail, and on other occasions made homeward passages in 21, 24, and 25 days.

The Western Ocean sailing packets were the best sea boats ever built, and their general performance was so excellent that they drove all British and other foreign vessels off the North Atlantic trade route and for two decades fought, with a great measure of success, highly subsidized steam competition. No extreme clipper could compete with the New York sailing packets in the transatlantic run. A feature of the model of the American transatlantic packets was the big flare forward and full rounded bow above water. This was referred to as the "apple-cheeked, characteristic packet bow with its convex bulge." It has been said that the slender, tapering bows of the clippers "cleaved the waves," while the packet bows "butted" them. This is hardly correct; the clipper concave water-line bow with but little flare above cut the water sharply and did not have much buoyancy or lift forward, whereas the packet bow had convex forward water lines of pronounced fullness and a flare with buoyance above, so that the ship rose to the sea instead of plunging through it. The deck forward was as broad and capacious as that of many a vessel's stern. The packets, therefore, were dry boats and seldom shipped seas, whereas the clippers were very wet and took a great deal of water aboard. British steamship design for many years followed clipper ship lines forward, with the result that as famous a vessel as the *Mauretania* was said on certain westward passages to act "like a submarine" ("she went under leaving the Lizard and didn't come up until we passed Nantucket"). The models of steam and motor ships of the 1920's and 1930's have reflected to a great extent more of the old sailing packet ship bows above water, with the result that the modern power vessels are more comfortable, drier, and better sea boats —as well as faster boats as far as maintained average speed is concerned—than their predecessors.

Sailing ships built as clippers, it would appear, were not suitable for steady month-after-month pounding in the North Atlantic trade. This service was entirely different from that over any long ocean route, where there were long alternations of trade winds and calms (or doldrums), with only occasional severe periods such as "rounding the Cape" or at times experiencing heavy seas and gales in the Roaring Forties (southern latitudes). Marine experts in the fifties and sixties have said that clippers were "strained all to pieces in a few years" in the North Atlantic, but that the packets, with fuller models, less top hamper, and of sturdier construction (with no strength sacrificed in the interest of either weight or speed), "stayed with it, punching valiantly back and forth across the Western Ocean." The packets, with well-balanced hulls and rigging plan, were driven hard hour after hour, day after day, with never a minute of letup. The service record of American packets in the Atlantic "shuttle" (New York-Liverpool, London, or Havre) is remarkable, considering the seas and winds encountered. It would have been even more so, had it not been for American politics and the Civil War and the driving of the American packets from the trade by British subsidized steam (and iron) in the sixties and seventies.

Superiority of Yankee Seamanship and American Monopoly of Transatlantic Trade during the Era of Sail

American sailing merchant ships showed their superiority over those of Britain and other foreign nations under the pressure of the War of the Revolution and the thirty odd years that followed, with their unscrupulous and ruthless British maritime aggression, French spoliation, with an undeclared war with France, and the War of 1812-1815 with Britain. With the exception of a small percentage of the American merchant fleet that in these early days was built for speed (following generally the lines of fast French craft) and of a type that made history in privateering and illegitimate trading, the bulk of America's marine tonnage followed traditional British lines, and the superiority of American general traders over those of the mother country and those of other nations lay not in the ships themselves but in their operation. With all of the world's great marine powers in some way or other, at some time or other, both forcibly and subtly expressing antagonism toward the deep-sea sailing traders of the United States, it became necessary for American ships to show speed to evade capture, with heavy fines, confiscation, or destruction and with impressment, imprisonment, or death for their crews. Whereas many finer-modeled ships were built in America with the fundamental thought of speed and handiness as a prime protection against capture (and such ships made splendid privateers), by far the larger proportion of America's deep-sea traders had the usual type of full-bodied hull, and their superiority was required to show itself in spar and sail plans and in the handling and utilization of canvas.

American sailors were outstanding for their courage, resourcefulness, industry, and intelligence, and these fundamental, admirable qualities were capitalized to the full in the handling and operation of Yankee ships. When the British captured an American ship during the late eighteenth and early nineteenth centuries, they were generally obliged to cut down her spars—both masts and yards—and materially reduce her spread of canvas before they could handle her. The mariners of any race knew an American ship at sea by her canvas; it was not necessary for her to show her colors. An audacious American, generally called a "crazy Yankee," with full topsails set and, perhaps, a main topgallant sail set as rigid as iron in the gale, would often pass a British ship close-reefed in mid-ocean. It took many long years of a losing fight (for ocean trade) with the "twenty-four-hour-a-day driving Americans" to convince foreign sea captains and owners that it was safe to carry canvas and sail a ship at night the same as during the day. The habit of getting in sail when the sun went down and "tucking her in comfortably"—and safe—for the night was too deeply ingrained in the minds of the seafaring and shipowning fraternity of Europe. Most of the early, quick trading passages of American ships were due to clever handling and driving—the habit of carrying a press of canvas at all times to near the limit of safety. This characteristic of Yankee seamen was not foolhardiness; it showed the courage of cool determination and a knowledge that the spars and gear were designed and kept in condition to stand such driving.

During the era of sail, American ships outclassed their foreign-built, owned, and operated competitors in every trade on every ocean—both in sailing and in adventurous pursuits such as whaling. However, the superiority of the American whaling trade, or industry, over that of any other nation was due not only to the whale ships themselves but also to the courageous daring, the resourcefulness, the quickwittedness, and the assiduity of officers and crews working with the owners of the ships on a definite, outlined basis of co-operative partnership. America later led the world in the clipper ship era of sail (practically covered by the period from the late forties to the Civil War) because of the fact that it built better and faster ships and sailed them "to get all out of them that was in them." British captains and deck officers were ultimately compelled by the stress of economic conditions and the demand of owners to adopt American methods of getting speed out of their ships when the British owners acquired by purchase or built the clipper type of ship.

The American transatlantic sailing packets were in operation from 1818 to 1881, but the era of potency was the period 1818-1858; after the Civil War, the transatlantic packets died a lingering death, proving themselves, with the years, less and less able to compete with steam and being ultimately driven out of the service by British iron screw-propelled steamships. As long as transatlantic sailing packets were in operation, the trade was distinctly and virtually exclusively American, for neither Britain nor any other nation could build, sail, or manage ships that could compete with the United States packet line service, of which New York by sheer merit held almost a monopoly.

In the forties and at the turn of the mid-century, the British commands operated their sailing ships, in practically all ocean trades, more on the old European model than in the daredevil, "drive-and-get-there" American fashion. De Tocqueville, in DEMOCRACY IN AMERICA (published in 1835), says:

> The European sailor navigates with prudence; he only sets sail when the weather is favorable; if an unfortunate accident befalls him, he puts into port; at night, he furls a portion of his canvas; and when the whitening billows intimate the vicinity of land, he checks his way and takes an observation by the sun. But the American neglects these precautions and braves these dangers. He weighs anchor in the midst of tempestuous gales; by night and day he spreads his sheets to the wind; he repairs as he goes along such damage as his vessel may have sustained from the storm; and when he at last approaches the term of his voyage, he darts onward to the shore as if he already descried a port. The Americans are often shipwrecked but no trader crosses the seas so rapidly, and as they perform the same distance in shorter time they can perform it at a cheaper rate.
>
> The European touches several times at different ports in the course of a long voyage; he loses a good deal of precious time in making harbor or in waiting for favorable wind to leave it; and pays daily dues to be allowed to remain there. The American starts from Boston to purchase tea in China; he arrives at Canton, stays there a few days and then returns. In less than two years he has sailed as far as the entire circumference of the globe and he has seen land but once. It is true that during a voyage of eight or ten months he has drunk brackish water and lived upon salt meat; that he has been in a continual contest with the sea, with disease and with a tedious existence; but upon his return he can sell a pound of tea for a half-penny less than the English merchant and his purpose is accomplished.
>
> I cannot better explain my meaning than by saying that the Americans affect a sort of heroism in their manner of trading. . . . But the European merchant will always find it very difficult to imitate his American competitor, who in adopting the system I have just described follows not only a calculation of his gain but an impulse of his nature.

Capt. Arthur H. Clark very properly says that at the time when De Tocqueville was writing his impressions, there were many American ships that could have transported him from Boston to Canton and back in considerably less time than two years and whose skippers would have supplied him with something more palatable than brackish water to drink, "besides convincing him that what he regarded as recklessness was in reality fine seamanship, and that he had been in no greater [if as great] danger of shipwreck than if on board a vessel of any other nationality, besides being a great deal more comfortable."

The American seaman from the days of the struggle for independence has been admittedly daring, active, and aggressive, but he had a greater incentive than the seafarers of other nations. It required no miracle of circumstances or favor of the great and relatively powerful to make an American sailor of courage and ability successively a deck officer, then a shipmaster, and ultimately a shipowner and a successful merchant. Before the days of the California Gold Rush and the vicious era of transatlantic emigrant-jammed packets (i.e., before the day of crimps, with their lawless satellites and conspirators, and of the bullying skippers and bucko mates that were developed to cope with guttersnipes, riff-raff convicts, and "dive sweepings" in the forecastle), American boys felt the urge of the sea and chose the sailing of ships as a career. They shipped as boys or as foremast hands, jumped responsively with energy, willingness, and interest to the word of command, and such youngsters were respected by captain and mates as boys who would grow up on the sea and shortly stand on their own quarter-deck giving orders to old salts; they were seamen—every inch of them—and a new crop of youthful and ambitious adventurers who had felt the lure and responded to the call of the sea.

An illustration of the sailing ability, energy, and achievements of Yankee skippers in American-built sailing craft is afforded by the following extracts from the log of the old ship *Great Britain* of 724 tons (Capt. Philip Dumaresq) on her homeward voyage from China around mid-century. She left Java Head December 22, 1849, and by January 14, 1850, had passed seven vessels bound the same way. The log from this date reads, in part, as follows:

> Squally under double-reefed topsail, passed a ship laying-to under a close reefed main-topsail. . . . January 24, a southwest gale, close reefed topsail split courses; before doing this we were going 7½

knots, close-hauled within six points of wind under double-reefed topsails and courses; January 25, . . . five vessels in sight, one a Dutch frigate, all hove-to; January 27, seven vessels in sight and we outsail all of them; January 29, passed the Cape of Good Hope and anchored in Table Bay, parted both chains and split nearly all the sails; hove to outside, blowing a gale offshore; January 30, at 6 A.M. bore up for St. Helena; February 1, fresh trades, passed a ship under double reefs, we with our royals and studding sails set; February 8, anchored at St. Helena with a stream anchor backed by remainder of one of our chains; February 10, having procured anchors and water, left St. Helena; February 21, crossed the line in Long. 31; March 12, under double-reefed topsail passed several vessels laying-to; March 17, took pilot off Sandy Hook, 84 days from Java Head including detentions.

Probably few, if any, of the ships which Captain Dumaresq passed hove-to or under short canvas were Yankee ships sailing under the Stars and Stripes. The *Great Britain* was no clipper, but merely an honest ship of the packet type built by Brown & Bell, New York, in 1826 for the transatlantic service; she was 138 ft. 6 in. long and 34 ft. beam. When Captain Dumaresq was "slamming the *Great Britain* out to China and back full sail in double-reef gales," the ship was twenty-four years old and—it would seem—doing pretty well for what the British called a "water-soaked, softwood, light-built American packet."

Captain Dumaresq was a native of the state of Maine, well bred and well educated, who gained a high reputation while in command of the *Great Britain, Akbar, Antelope,* and later the clipper ships *Surprise, Bald Eagle, Romance of the Seas,* and *Florence.* The *Surprise* of 1,261 tons, built in 1850 by Samuel Hall, East Boston, for A. A. Low & Bro., New York, from designs by Samuel H. Pook, was one of the most successful ships ever constructed and "proved a mine of wealth for her owners." Young Dumaresq was sent on a sea trip as a boy for his health and developed a love for this seafaring life, went "through the mill," and at the age of twenty-two took his first command. Philip Dumaresq was born at Swan Island near Richmond, on the Kennebec River, a few miles above the great shipbuilding city of Bath, on an estate that came to the family through his grandmother, Rebecca Gardiner, of Gardiner, Maine, who was a daughter of the Reverend John Sylvester Gardiner, the first rector of Trinity Church, Boston.

Whereas De Tocqueville wrote of American sailors and of their drive and extreme courage, which, at times, seemed to approach foolhardiness, he also said: "I am of the opinion that the true cause of their superiority must not be sought for in physical advantages, but that it is wholly attributable to their moral and intellectual qualities." He could have added at the time he penned his DEMOCRACY IN AMERICA that the United States was a democracy in fact, with freedom and opportunity in existence and liberty predominate. A man could rise from the ranks and be respected; he could build a career and a fortune and be permitted to enjoy it. Industry in the nineteenth century was a virtue, and success from hard work in fair competition was a badge of honor.

American sailing ships in the era of merchant sail were expertly handled and both "made" and left their docks under their own canvas before the advent of harbor steam tugs. Spears, writing of the competency of the average master of a New York-Liverpool sailing packet, says:

When the wind served at the hour of sailing, he set all plain sail on his vessel as she lay at her pier, laid all flat aback, drove her stern first into the stream, turned her around, and then, while the spectators cheered themselves hoarse, he sent her rippling down to the sea. And when he returned, he sometimes arrived in the river with royals set and sailed her into her berth with less fuss and jar than the ferry-boat in the near-by slip was making. Indeed, tugs were used before 1835 only when the wind was foul or wholly lacking, and for years after that it was a matter of pride as well as profit to save the tug bill ($140) whenever possible.

The story is told of how Captain Samuels docked the medium clipper packet *Dreadnought* (1,413 tons), known as "The Wild Boat of the Atlantic," at New York in the mid-fifties without any external assistance, during a heavy fog, and of his taking the ship up alongside her unloading pier "without being scarcely able to see the dock." When Capt.

Charles P. Low brought the *N. B. Palmer* into San Francisco on August 21, 1851, the pilot anchored the vessel in the harbor. As the agents were very anxious to get the ship moored to the discharging wharf and the pilot refused either to handle her or assist in the handling any further, Captain Low took up the anchor, set all sails, including skysails, and on the ebb tide, with a light beam wind, took the ship up close to the wharf, then backed the main yard, and the ship came alongside the dock in the exact spot where she was needed. It was said that this was "an incident unparalleled in the maritime annals of the port of San Francisco," and the feat was long remembered as a fine exhibition of seamanship, the 1,400-ton ship, fully laden, being taken to her specified berth without any assistance of towboats or other type of outside help whatsoever.

During the first half (1818-1838) of the real transatlantic sailing packet ship era, the American advantage—and resulting predominance to the point of monopoly—was due mostly to the original conception and ardent working-out of the plan to sail packet ships regularly on schedule (whether the holds were full of cargo and all the passenger berths taken or not), the quality of the command in making time and commanding respect, and the relative safety as well as the comfort, speed, and reliability of the service. During the last half of the era (1838-1858), with sailing packet shipbuilding practically ending with the construction of the 1,406-ton *Neptune* of the Black Ball (Liverpool) Line in 1855, the 1,487-ton *Phoenix* of the Red Star (Liverpool) Line in 1853, the 1,639-ton *Aurora* of the Blue Swallowtail (Liverpool) Line in 1854, the 1,626-ton *Ellen Austin* of the Dramatic (Liverpool) Line in 1854, and the 1,771-ton *Amazon* of the Black X (London) Line in 1854, highly subsidized steam competition was encountered, and American sailing packets were built of larger size. Some of those constructed in the fifties and sixties were more of the general trader, emigrant ship, and medium clipper type; the true Western Ocean sailing packet was not built after the *Harvest Queen* (1,383 tons) and *James Foster, Jr.* (1,410 tons) were launched by W. H. Webb, New York, in 1854 and the *Neptune* (1,406 tons) in 1855—all for the Black Ball (Liverpool) Line and Chas. H. Marshall & Company, New York.

As long as sailing packet ships were engaged in the transatlantic trade, American vessels enjoyed a monopoly of the business. Until the time came when wood sail could no longer compete with iron steam (screw propulsion), no nation could build or operate ships in the Western Ocean "shuttle" trade that—either as to the design and construction of the ships, on the one hand, or as to their operation at sea, freight handling, and business management ashore, on the other—could begin to compare in quality and in efficient, economic service with American transatlantic packet ships, with special emphasis on those sailing out of the port of New York.

Whereas the regular building of sailing packets practically stopped in the middle of the fifties, some more or less desultory construction for the principal New York transatlantic lines continued, and during the years 1860-1869 inclusive, four packets were built and six other traders acquired by purchase by the old established New York sailing packet lines: four for the Black Ball (Liverpool) Line; two each for the Red Swallowtail (London) and the Dramatic (Liverpool) lines; and one each for the Black X (London) and the Havre Second lines. The last transatlantic sailing packet built (incidentally, also the last full-rigged ship built in New York) was the 1,683-ton *Charles H. Marshall,* constructed in 1869 by William H. Webb for the Black Ball (New York-Liverpool) Line. This ship operated in the Black Ball Line until it suspended operations in 1878, after which she engaged in general trade for many years.

Winthrop L. Marvin has said that the transatlantic sailing packets marked a great improvement over the trading craft that they superseded:

They were not only more skilfully designed and built but more liberally administered. Practically all of the packets were American. . . . They were larger and better ships than the ordinary merchant vessels and were built especially for North Atlantic service; that meant that they must be very strong of hull, with a moderate height of spars and breadth of canvas. They were not intended for extreme speed, had square sterns and bluff bows, but their underwater bodies were sufficiently fine-lined to permit of handsome passages in fresh, favorable winds. . . . Britain could not compete with our builders in the style of the vessel and the luxury of her appointments; nor could she compete with the seamanship of our commanders. The captains of the first-class packets were the sea's aristocracy. They won their posts by a process of natural selection. . . . Some of these packet lines developed such a reputation that they remained in existence until the Civil War. . . . The packets carried the higher-cost cargoes that could afford to bear the higher freight charges. They conveyed also cabin and steerage passengers (the former in a capacious and often elegant house aft of the mainmast, running thence to the stern, and the emigrants were berthed between decks). . . . Careful laws governed the passenger trade of the packet fleets; each ship was allowed to take so many in the cabin and so many in the steerage and no more. . . . The American packet service was conducted with very few accidents; that was one secret of its long prosperity. Our vessels commanded the best insurance rates. There had as yet come no combination of foreign underwriters against America (which developed in the sixties and grew in power as the century advanced). A passenger or a merchant instinctively sought the Stars and Stripes. Not until steam came in with foreign subsidies behind it, was our supremacy on the North Atlantic seriously challenged.

Britain Acknowledges the Superiority of American Merchant Sail and American Seamen

During the packet ship era, the chief competitors of American ships and American sailors openly acknowledged that United States-designed, built, and operated ships had won unquestioned and even uncontested supremacy on the North Atlantic. The British press, which reflected the attitude of British merchants, was free in tendering cordial praise to the American sailing packet, and it is significant that at a time when the British deep-sea tonnage, in the aggregate, much exceeded that of the United States no British sailing shipowner "even so much as thought about entering into competition" with the well-equipped, managed, and operated American packet lines. The Liverpool press was particularly friendly to the United States sailing packets and frequently admitted the quality and supremacy of American ships in construction, appointments, sailing qualities and handling at sea. The London COURIER, in August 1836, printed a number of extracts from the findings of a committee appointed by the British House of Commons in 1835 "to inquire into the cause of shipwrecks in the British merchant service," which stated that, according to the testimony of witnesses, American ships were generally superior to those of the British and were commanded by captains and officers who were more competent and better educated than the men in charge of British ships. Moreover, American seamen were considered more capable than British sailors, were better paid, and as the ships were maintained in a higher state of perfection, the combination of better ships, more capably and intelligently operated, resulted in fewer marine catastrophes in the American mercantile marine, lower insurance rates, and greater confidence on the part of shippers. American ships were admittedly faster, better built and maintained, more efficiently handled, safer, and more reliable as a means of transport than those operating under the British flag. Because of these conditions, we are told, "the best of the British sailors were going over to the American ships"—and this only about twenty years following the close of the War of 1812, during which the American sailor won (even though not openly admitted by the British in the terms of the Peace Treaty of Ghent, December 24, 1814) the right to sail the seas unmolested by British warships.

For long years, the boast of Britain in its role of Mistress of the Seas was (as expressed in one of its popular patriotic songs), "We've got the ships, we've got the men, we've got the money too." During the latter part of the era of wood sail, England undoubtedly had the money and an abundance of arrogance, with a powerful war fleet to back up and "justify by force" its ruthless aggression and domination by naval military power of the seas, but in the commercial realm it was the United States and not Britain that had the ships and the men to sail them—and both of a class so superior to the best that Britain had to offer that there could be no comparison. America built and manned ships on all trade routes (where competition existed by force of circumstance) and drove British vessels from the ocean, and no better or fairer illustration exists of the pre-eminence of American-designed construction and American-operated deep-sea sailing ships than the record of the North Atlantic. Marvin has written:

> Against these magnificent square-riggers, sailed with such vigor and exactness, Europe could not compete. So long as the transatlantic service was a question of sheer seamanship, America held the undisputed mastery. This Western Ocean, with its vast range of heaving waters, its fierce gales and its bitter cold, has always been the most important field of maritime adventure. Supremacy there has ever been the coveted prize of seafaring nations. Year after year, in the era of wood and canvas, the advantages of the United States were overwhelming, and our superior ships actually cost less to build than did the ships of Britain.

The British historian Grantham says:

> Previous to the development of steamships, the preponderance of shipping was falling rapidly into the hands of American shipowners. Thirty years ago one of the great objects of interest at the docks in Liverpool was the American sailing packet, and it was considered that a stranger had missed one of the lions of the port who had not visited these celebrated ships. The same prestige was felt everywhere: on the Atlantic and Pacific oceans, in India, China, and in all the best trades American ships were most in demand.

In the thirties and forties, American ships in the China trade were making sailing history. Some ships modeled and canvased for speed were reporting passages that closely approached those of the clipper ships of the mid-century, and even full-bodied ships, under the command of Yankee skippers, were making time by driving methods that startled the British. American shipowners, masters, and sailors did not believe in leisurely voyages in the British East Indiamen tradition. When Capt. Philip Dumaresq, of the Kennebec River, Maine, took command of the old Atlantic packet *Great Britain* (of 725 tons; built by Brown & Bell, New York, in 1826), with her full buoyant bow and sturdy hull and spars, he drove her with such consummate skill and daring and made such good time that some historians have referred to the old full-modeled short and rugged packet as a clipper. The commands of British ships generally posed as being unimpressed by the driving tactics, resourcefulness, and the quick passages of the "crazy Yankees," but the shipowners were staggered by the amazing performances of American ships at sea, and shippers, with the more enlightened manufacturers and public, demanded better service from British ships.

In 1833 the British East India Company had been deprived of its last monopolistic rights afloat, and all British ships were permitted to engage in this once exclusive trade. The spirit and customs of the old regime had continued, however, and privately owned British ships in the India, East India, and China trades were still being built and manned like frigates—slow, comfortable, and "snugging down for the night under reduced sail." British navigation laws protected British trade from foreign competition, and the marine interests within the empire were super-conservative, wedded to tradition, complacent, and evidently satisfied to continue indefinitely the customs of the past. The commercial interests of Britain, however, were in rebellion, and in 1849, for the ultimate good of the empire, the British navigation laws were repealed, and British merchants were permitted to maintain or upbuild their prestige in foreign trade by the use of foreign ships if they found it to their interest to do so. This meant that British ships would have to compete with Yankee clippers in their valuable deep-sea carrying trades, such as the China tea trade, and the days of "the gallant old Indiaman and her ornate, dignified prestige" were gone for all time. Henceforth it was speed, service, quality, and reliability of transport that would count with British merchants, and it was said that "the entire British merchant marine will have to be Americanized both as to tonnage and operations." The London TIMES, referring to the change brought about by the removal of the barrier of the navigation laws and fearing only the United States as foreign competition, said:

> We must run a race with our gigantic and unshackled rival. We must set our long-practised skill, our steady industry, and our dogged determination against his youth, ingenuity and ardor. Let our shipbuilders and employers take warning in time. There will always be an abundant supply of vessels good enough and fast enough for short voyages. But we want fast vessels for the long voyages which otherwise will fall into American hands.

The competition of steam with sail for coastal and short-voyage transport had greatly improved the quality of British sailing vessels on many short trade routes, and around mid-century the competition of British steam was being felt by American sailing packets in the North Atlantic "ferry"—a trade that British sail was never capable of breaking into, not even with the full weight of British imperial power, prejudice, and economic preference behind it.

After the repeal of the British navigation laws, when American ships had a chance to compete on their merits with British ships for British trade, United States-built and operated ships took the cream of the British carrying trade wherever speed and reliability of transport were deemed of importance. In August 1850, the first China tea was loaded in American ships for England, and the competition of American clippers dismayed British shipping until it could rally, copy, and fight with similar weapons "operated in Yankee fashion." The British Government viewed the loss of national foreign trade with deep concern and sent admiralty draftsmen to English dry docks to copy the lines and take measurements of United States clippers for the benefit of British shipbuilders. Owners and builders of ships were urged to build speedy vessels that would uphold the glory of the empire. The British technical journal NAVAL SCIENCE, in the early fifties, acknowledged that the tea trade of the English markets had almost passed out of the hands of the British shipowner and that British vessels, well-manned and well-found, were known to lie for weeks in Chinese harbors waiting for a cargo, while American clippers came in, loaded, and sailed immediately with full cargoes carrying a much higher freight rate than the British could command.

Following the Peace of Ghent and the War of 1812, New York Looks to the Great Developing Trade Routes

The peace treaty signed at Ghent, Belgium, on December 24, 1814, brought the War of 1812 with Britain to a close, but news of the peace did not reach America until the night of February 11, 1815, and in many parts of the world, war between the two nations continued well into 1815. The date of the realization of the dawn of an era of peace with Britain is significant, as it caused progressive New York businessmen to act promptly to avail themselves of trade opportunities that seemed to lie ahead. During the next decade, New York adopted measures that caused the principal channels of trade to flow in its direction and became firmly established as the marine metropolis of the New World. Looking to the north, New York saw the New England States, which were distinctly maritime and self-sufficient, and decided that its destiny lay in promoting trade routes to the great developing West, to the agricultural South, which had no shipping and was not marine-minded or even strong in the general field of commerce, and to the East with its Old World markets and an undoubtedly great field for trade.

New York capitalists and merchants concentrated, at first, on water transportation and worked on a general plan to get freight moving in and out of New York economically by water. As Albion says, "New York struck while the iron was hot. . . . It clinched the West by means of the Erie Canal, the South by the coastal packets, and Europe by the ocean packets. . . . Commerce from every direction flowed toward Sandy Hook and Manhattan, making New York the nation's principal entrepôt or, as the phrase went, 'the great commercial emporium of America.' " New York, at the mouth of a river navigable for nearly a hundred and fifty miles, had in the Mohawk Valley beyond a "water level route" to the interior of the country "taking in flank the high ridges of the Appalachians, which lay behind the other ports." The West was looking for an economic outlet to reach markets with its rapidly increasing surplus products. New York went after this business in 1817 and secured it by digging the Erie Canal. This "enterprising tapping of the western trade" was only a part of New York's commercial development program, for the establishment of real packet lines, with superior vessels and unequaled service, to Europe and the South gave New York a control of two great sea lanes—one to the east and the other to the south—almost as complete as its domination of the Hudson River and Erie Canal and the channel of commerce to the west. Albion says that the volume of trade which came to New York from Europe and the South probably contributed more to New York's commercial prosperity "than did the cargoes that traversed 'Clinton's Ditch.' "

The earliest American ships usually carried cargo that belonged to the shipowner, the owner and the captain, or the owner and the crew. Later, ships carried goods partly for the owners and partly for friendly "adventurers," who paid the owner for transportation and service a freight rate based on volume and weight, a unit price levy on the goods, or a percentage of the sales price. The captain or supercargo was empowered to handle the selling and, at times, to barter for goods to be brought back for the home market. With the growth of commerce, merchants multiplied in numbers much more rapidly than shipowners, and in the early nineteenth century a large part of the commerce between a trading port like New York and Europe or the South consisted in the shipping of goods by merchants who paid freight thereon. Prior to the advent of the American packet, a merchant with goods to ship to a certain port had two classes of mercantile vessels with which he might deal—the transient ships and the regular traders. The transients were the sailing tramps of the ocean. They picked up cargoes at any port and delivered them to any other port of the world if their commands or owners deemed it profitable to do so; they had no regular trading routes and no outbound terminuses, and such ships might be away from their home ports for years at a stretch. The regular traders generally limited themselves to trade between two or more particular ports, but they were usually available to call at any port or ports on the way either outbound or homeward bound to discharge or receive freight. Some regular traders ran direct between specified ports, but they were usually owned by commercial firms and used primarily to carry the goods of these firms. Most of them would carry some outside freight to fill their holds, but their sailings were indefinite and irregular.

At times, regular traders, with some hold space available for cargo and berths for passengers, would advertise that they would positively sail on a certain date "whether the ship is filled or not." Thereupon, shippers would place some cargo in her, and passengers would buy space on her only to find that, due to a series of manufactured excuses, the ship would lie at her dock for weeks waiting until her holds were filled with cargo and her passenger berthing space sold. The regular trader *Minerva* is a case in point. An advertisement given general publicity in New York on September 13, 1816, read: "For Liverpool. The Superior ship *Minerva.* As there is great difficulty in procuring freight, the ship will positively be despatched on the 15th September, *cargo or no cargo."* At that time, there were shippers who had cargo in the ship's hold that had been there for weeks on the promise of the ship's sailing in August, "but not later than the first of September," and some passengers who, having bought accommodations on the ship, had been waiting around for many days—and some for weeks—expecting the ship to sail any day. The *Minerva* did not sail as definitely promised in the public print. The sailing date was postponed first two days, "in consequence of the present unfavorable weather," then three days more so she could take on a hundred and thirty bales of southern cotton, following which she was detained by fog. She finally put to sea on October 3, far more than a month after her first-stated date of sailing and eighteen days after it was announced that she would "positively be despatched . . . , *cargo or no cargo."* Meanwhile, her outraged passengers, many of whom were from distant parts, were subjected to hotel bills and expenses as well as loss of time, and the merchants who had cargo or letters to foreign correspondents aboard were chafing at the delay which might prove to be expensive to them. Such were the conditions in existence in regard to shipping freight or engaging a passage to Europe when the pioneer transatlantic packet line was organized in New York.

Organization in 1817 of the Black Ball Line of Transatlantic Packets

During 1817, five New York men conceived the idea of operating a fleet of ships regularly on an advertised schedule across the Western Ocean and organized the Black Ball Line of transatlantic sailing ships. These men were Isaac Wright and his son William, Francis Thompson, Benjamin Marshall, and Jeremiah Thompson, who were textile importers and who for many years had been interested in shipping and had become more intimately acquainted with each other. This pioneer service was advertised in the New York EVENING POST of October 27, 1817, and under illustrations of four ships in a row (as against the conventional cut of a single vessel used in all previous shipping advertisements) appeared the following matter:

LINE OF AMERICAN PACKETS
BETWEEN N. YORK & LIVERPOOL

In order to furnish frequent and regular conveyances for GOODS and PASSENGERS, the subscribers have undertaken to establish a line of vessels between NEW YORK and LIVERPOOL to sail from each place on a certain day in every month throughout the year.

The following vessels, each about four hundred tons burthen, have been fitted out for this purpose:

Ship *Amity*, John Stanton, Master
" *Courier*, Wm. Bowne, "
" *Pacific*, Jno. Williams, "
" *James Monroe*, — "

And it is the intention of the owners that one of these vessels shall sail from New York on the 5th and one from Liverpool on the 1st of every month.

These ships have all been built in New York, of the best materials, and are coppered and copper fastened. They are known to be remarkably fast sailers, and their accommodations for passengers are uncommonly extensive and commodious. They are all nearly new except the *Pacific;* she has been some years in the trade, but has been recently thoroughly examined and is found to be perfectly sound in every respect.

The commanders of them are all men of great experience and activity; and they will do all in their power to render these Packets eligible conveyances for passengers. It is also thought, that the regularity of their times of sailing, and the excellent condition in which they deliver their cargoes will make them very desirable opportunities for the conveyance of goods.

It is intended that this establishment shall commence by the departure of the *James Monroe* from NEW-YORK on the 5th and the *Courier* from LIVERPOOL on the 1st, of First Month (January) next; and one of the vessels will sail at the same periods from each place in each succeeding month.

Isaac Wright & Son
Francis Thompson
Benjamin Marshall
Jeremiah Thompson

The organization of the Black Ball transatlantic sailing packet line, with regular sailings from both Liverpool and New York commencing in the first days of January 1818, was in fact a great step forward in ocean transportation. It put a stop to indefiniteness, indecision, procrastination, and a deliberate practiced deception on the part of the owners and agents of regular traders regarding the time of departure of vessels, which had grown to be a curse of uncertainty. The soliciting for freight and passengers, with a stipulated date of sailing, had to be considered seriously by patrons of the shipping company, but was generally treated very lightly by the shipowners and command. The advertisement of the new packet line with a picture of four ships as a heading was also an innovation, for previous publicity of sailings had dwelt entirely on a single vessel and a single voyage. After some twenty years of operations, which had seen the formation of many packet lines, a steady increase in the number and size of such ships commencing their passages on a regular schedule, and the extraordinary vitality of the sailing packet lines (which grew so that they successfully combated steam for many years), it was generally felt that the successful, practical working of the fundamental principles actuating the packet liner idea had demonstrated the soundness of vision, initiative, and courage of the organizers. It was declared that the five founders of the original Black Ball packet line were public benefactors and men who had performed a great service to the United States, its merchant marine, and both foreign and coastwise trade and passenger service.

In 1818, New York transatlantic packet service consisted of the Black Ball's original line sailing of one ship per month. From the beginning of 1822 to the middle of 1824, the packet liner sailings from New York had increased to four sailings a month to Liverpool, two to Havre, and one to London. In addition, major, permanent coastal packet lines had been established in 1821 to New Orleans with three brigs of from 244 to 254 tons (followed in 1822 with the *William,* a ship of 292 tons, and in 1823 by the ships *Florian,* 335 tons, and *Virginian,* 355 tons) and in 1822 to Charleston with five ships of from 204 to 265 tons (followed in 1823 with three ships of from 167 to 319 tons). In 1824 a second (the Holmes) line was in operation to New Orleans with four ships of from 195 to 309 tons, and a line was inaugurated running to Savannah with five ships measuring from 236 to 313 tons. Packet lines from New York were also in operation at this time between that port and Boston, Philadelphia, and Chesapeake Bay ports. New York in the very early twenties was thoroughly and conspicuously sailing packet-conscious, and in October 1823 the DAILY ADVERTISER—referring briefly to two additional minor lines being established to operate between New York and South Atlantic ports—said: "The establishing of a line of packets from this port is now so common that it hardly excites sufficient notice to cause a single paragraph."

It has been said that the transatlantic sailing packet lines were developed in response to the demand, following the end of the War of 1812, for a closer commercial relation between the United States and the Old World. The call for prompt, rapid, and reliable transportation of passengers, mail, and freight between Europe and America became so pressing that New York merchants and capitalists, "among whom the shrewd, farsighted Quaker element predominated," influenced the more progressive shipowners and managers to develop the regular packet sailing idea and then improve the floating tonnage and put a premium on speed and regularity of sailings and, as far as nature permitted, of arrivals also. From the very first, it appears that even the old and small Black Ball liners, by their regularity and attempts at good service with assumption of responsibility, made the regular traders and average merchantmen "appear very inadequate," and the packets soon commanded the best cargoes as well as the desirable passenger trade. The completion of the Erie Canal and the operation of regular lines sailing as feeders and distributors between New York and southern ports boomed the business of the transatlantic packet era, and then modern commercial New York may be said to have begun.

Of the men who had the vision and the courage to inaugurate the transatlantic packet service, four were Quakers, or Friends, and three were American citizens who had been born in Yorkshire, England. Benjamin Marshall, the only non-Quaker of the quintet, was a native of Huddersfield, Yorkshire, and was trained in the cotton industry. Jeremiah and Francis Thompson were sons of William Thompson, a prosperous and highly competent woolen manufacturer of Rawdon, Yorkshire. The Wrights, father and son (both Quakers), were the most intimately connected with shipping of any of the partners, and much of the active management of the packet line was assumed by them. Benjamin Marshall and Jeremiah Thompson were very prominent in the cotton business. For years, Marshall spent his winters in Georgia, arranging for purchases of cotton; he was a pioneer in the manufacture of cotton cloth in America and built an extensive plant near Utica, N.Y. Jeremiah Thompson (who married Isaac Wright's daughter) became the country's leading exporter of cotton. Francis Thompson, who at first was associated with his brother Jeremiah and Marshall in textile imports and raw cotton exports, with two nephews who came over from Yorkshire, actively participated in the management of the packet line and became particularly interested in the immigrant trade. Francis Thompson and his nephew Samuel were pioneers and, for some time, the most active immigrant agents in this country.

Albion says:

> The Black Ball Line set an example of compact ownership and control that was not equaled by any other New York line. The five founders were joint owners of every Black Ball packet during the first decade of the line's service. . . . Joint ownership of vessels did not necessarily involve any other business relationship; the individual owners were linked together only through their property in each vessel and might be entirely independent of each other in all other business relationships. The Black Ball in that first period was the only instance of a line in which some of the captains did not participate in ownership. This left no question about their relationship to the management, which must at times have been a difficult one in those lines where they owned an interest in the ships.

Whereas the Black Ball Line had "compact ownership and control," it was not owned by a corporation with stockholders, for although the vessels of the line for many years were owned—in variable fractions—by all of the partners, each vessel was a separate entity employed by and leased to the line, which operated it for the good of the service and in the interest of the owners of the specific ship and of all the ships in the fleet. By not permitting the captains to own a share in the ships, the Black Ball Line departed from a time-honored custom and inaugurated a system of hiring, rewarding, promoting, or discharging all of its employees from the captain down, based on their capabilities; merit, with discipline, superseded financial, family, or political influence in selecting and maintaining the personnel on the ships.

The deaths of Isaac Wright and Francis Thompson in 1832, following the crash of Jeremiah Thompson, the first "cotton king," in 1828 (due in great part to the selfishness and fear of his Liverpool associates in a weak market), led to the sale of the Black Ball Line in 1834 to New Englanders, the most prominent new owners being Goodhue & Company and Capt. Charles H. Marshall. Jonathan Goodhue, born in Salem, Mass., was a protege and New York agent of William Gray, of Salem and Boston, America's greatest shipowner and one of the leading merchants during the last part of the eighteenth and the first quarter of the nineteenth century.

It is interesting to note that, during the early transatlantic packet days, young New England men flocked to New York, lured by the commercial opportunities of the "big port" and its established trade routes. It has been said that these New Englanders were more hardheaded and hard working than the average New Yorkers. They penetrated into the shipyards and countinghouses and gained command not only of most of New York's best packet ships but also of the lines and firms which operated and managed the ships. Albion says that four Yankee firms rated as leaders in New York commerce in the thirties.

Two of them, consisting of pairs of brothers, N. L. & G. Griswold and G. G. & S. Howland, became famous as ship operators on the Seven Seas, but they specialized later in the clipper trades and had relatively little to do with packets. The other two, Grinnell, Minturn & Company and Goodhue & Company, hailed from Massachusetts and were among the foremost operators of packet ships.

The Pioneer Western Ocean Black Ball Fleet of Sailing Packets

The first Black Ball Line ship sailing from New York went off as scheduled in the face of much skepticism. Although it was snowing heavily at the time (always theretofore deemed a legitimate excuse for a delay and a further chance "to load up"), the *James Monroe* of 424 tons, seven months old and the newest and largest vessel of the original Black Ball fleet, under the command of Capt. James Wilkinson, left her East River dock promptly as per schedule at 10:00 a.m., January 5, 1818. This sailing of the pioneer transatlantic freight, mail, and passenger packet was an event of fully as much historic importance as—if not more than—the occasion six months and a day earlier when De Witt Clinton signalized the "beginning of New York's other great bid for maritime supremacy" by lifting the first spadeful of earth in the building of what was to be known as the Erie Canal. The *James Monroe,* with a black ball on the top of her mainmast and a big black circle on her foretopsail, carried a cargo of barrels of apples and smaller quantities of flour, cotton, and naval stores; the mailbag from the Tontine Coffee House, "the maritime rendezvous of the day"; a small amount of "specie," shipped to adjust international trade balances; and eight male cabin passengers (two from New York, two from Philadelphia, and one each from Boston, Baltimore, Kentucky, and Montreal), each of whom paid about two hundred dollars for passage. The vessel sailed in bad weather and had a "dirty," stormy crossing with adverse winds. She sailed around the north of Ireland and made the Scottish coast twenty-three days out from New York.

The first arrival of a Black Ball packet in New York was that of the ship *Courier,* reported by the New York EVENING POST on February 23, 1818, as: "Ship *Courier,* Bowne (the first of the New Line of Packets), 47 days from Liverpool with dry goods, etc., to I. Wright and Son, F. Thompson, B. Marshall, and Jer. Thompson, owners." (Then followed a list of seventy-six other consignees and the names of six first-class passengers, with the statement "7 in the steerage.") The *Courier* had a stormy midwinter passage against prevailing North Atlantic westerly winds and gales. Before the *Courier* reached New York, the *James Monroe* had landed her passengers in Britain on the pioneer eastward passage of the line, the *Amity,* the second eastbound vessel to sail, was nearing Liverpool, and the *Pacific* was well in the Atlantic on the February 1 westbound sailing from Liverpool—and the Black Ball Line was in full and successful operation on its advertised schedule.

A significant feature about the inauguration of the Black Ball Line's regular monthly transatlantic service was that the initial sailings each way were midwinter trips, and such trips were dreaded by shipowners and sailors alike. Whereas regular traders laid up in the winter, the transatlantic packet line pioneers were determined to give the public a greatly needed, steady service twelve months in the year, and this without regard to season, weather, past practice, and established custom.

The vessels that composed the fleet of the pioneer Black Ball transatlantic sailing packet line can be described, with their dimensions, etc., as follows:

Name of Packet	Tonnage Measurement	Dimensions Feet and Inches: Length	Beam	Depth of Hold	Builder	Year Built	Service in Black Ball Line
JAMES MONROE	424	118-0	28-3	14-1	A. Brown, New York	1817	1818-1823
COURIER	381	103-6	29-0	14-6	S. Wright, New York	1817	1818-1820
AMITY	382	106-6	28-6	14-3	F. Cheeseman, New York	1816	1818-1824
PACIFIC I	384	110-0	28-0	14-0	A. & N. Brown, New York	1807	1818-1819

Not one of these early vessels continued long in the service (three were sold and later became successful whalers, and one was wrecked), for the success of the line called for larger ships as well as more of them. The fastest of the original quartet was the *James Monroe* with an average westbound passage of 37 days for five years (shortest crossing, 23 days; longest, 54 days). This ship was a general trader (principally in the Cuban trade) for nine years and was a successful whaler from 1832 to 1849 (seventeen years), when she took part in the California Gold Rush, rounded Cape Horn, and was sold in California when thirty-two years old. The next fastest of the original packets was the *Amity,* which averaged 39 days on her westward passages for six years (best run, 22 days; slowest, 58 days) and was the last of the original quartet in the service; she was wrecked on Squam Beach, New Jersey, April 24, 1824, when eight years old. The *Courier* averaged 41 days on her westbound passages for two years (shortest, 30 days; longest, 60 days). She was considered slow for the service and was put in general trading work. The vessel, after eleven years as a packet and a general trader, found her proper place as a whaler in 1828 and continued for thirty-three years in that trade (some authorities say that she was engaged in whaling from 1820 to 1861, i.e., forty-one years). The *Courier* was sold to the government in 1861 and, when a relatively sound ship and forty-four years of age, became one of the "Stone Fleet" deliberately sunk to blockade southern harbors during the Civil War. The *Pacific I,* the oldest square-rigger put in the transatlantic packet trade by the Black Ball or any other line, saw only a year's service as a packet, but had nevertheless a venerable career with an active sea life of seventy-five years (1807-1882), the last sixty-three of which were spent in the whaling industry. The *Pacific I,* although an ideal whaling ship, was too full modeled below water and far too slow a sailer for a packet; while in the packet service, her westbound passages averaged 49 days, her best run west requiring 45 days and her slowest, 61 days.

The Black Ball Line brought a newly built packet, the *Albion,* into the service to replace the *Pacific I* in 1819. She was of 434 tons, built by Sidney Wright (Isaac Wright's talented shipbuilder nephew), and fast, her average westbound length of passage being 34 days (best, 27 days; slowest, 41 days). The *Nestor* of 481 tons, built by J. Lozier, of New York, in 1815, was acquired by the Black Ball Line in 1820 to replace the *Courier,* and she continued in the service, although rather slow for packet requirements, until wrecked at Fire Island Inlet, Long Island, on Christmas Day, 1824.

In 1822 the Black Ball owners doubled their transatlantic fleet to eight active ships and, commencing with a March 16 sailing, dispatched two vessels regularly from each side per month. Sidney Wright, the shipbuilder, figured conspicuously in this expansion program and built four new Black Ballers to enter the service in 1822. These vessels—the *Columbia I, James Cropper, William Thompson,* and *Liverpool*—were of from 492 to 496 tons. When the *Liverpool* was launched on June 15, 1822, she was the sixth Black Ball liner designed and built by Sidney Wright since 1817, and during that time he had built two other ships, the *Manhattan* of 390 tons and the *Cadmus* of 306 tons, both in 1818, which were used in the original fleets of competitive lines (Liverpool Red Star and

Havre Whitlock). The Black Ball Line experienced a most unfortunate year in 1822 at the time that it doubled its service. The *Albion*, the first ship built for the line after its establishment in 1818, was dashed to pieces in a fierce gale off the Irish coast near Kinsale on April 25, with a loss of forty-six lives (out of fifty-four aboard her). Three months later (July 25), the new *Liverpool*, on her maiden voyage under Capt. William Lee, Jr., struck an iceberg in a thick fog when nine days out from New York and sank, but fortunately all of the passengers and crew were saved by means of the ship's small boats and reached St. John's, Newfoundland, August 1. Sidney Wright, the builder, died in the summer of 1822 at about the same time that his latest creation, "his masterpiece" and "Queen of the Black Ballers," through no fault of her builder or of her command, was being sent to the bottom in mid-ocean.

The *Columbia I* served about five years in the Black Ball Line and later some six years in the London Red Swallowtail Line before she was condemned after a collision in 1833 in the English Channel. This packet was a good sailer and is credited with a 34-day average length of westward passages while in the Liverpool service, with 21 days as her best crossing and an average of 36 days in the Portsmouth-to-New York run, with one claimed remarkable passage of 17 days. The *James Cropper* was not so fast; she ran as a Black Baller for six years (1822-1828), with an average length of westward crossing of 37 days, and her fastest run was stated as 26 days and her longest as 55 days. On December 15, 1832, when eleven years old and after four years as a transient, she was wrecked near Cape Henlopen.

Of the first eight ships to sail as packets under Black Ball colors, five were wrecked, but only four when operating in the line: one of these by collision with an iceberg at sea, two when trying to make New York Harbor, and one when dismasted by a terrific gale and driven, while helpless, on the Irish coast.

Two ships constructed by Brown & Bell, New York, the *Orbit* of 384 tons, built in 1821, and the *New York* of 516 tons, built in 1822, were added to the Black Ball fleet to replace the unfortunate *Albion* and *Liverpool*, but the *Orbit* was only a temporary, emergency acquisition, as she was both too small and too slow for the demands of the service. As Sidney Wright (the shipbuilder of the line) was dead, Brown & Bell received an order to build the *Canada* of 525 tons, which entered the service in 1823; soon afterwards, the *Orbit* was sold to Baltimore parties. The *Pacific II* of 586 tons was built for the line by Brown & Bell in 1824; the *Florida* of 522 tons, built by Smith & Dimon, New York, in 1822, was acquired by purchase in 1824; and the new *Manchester* of 561 tons, built by Noah Brown and C. Porter, was obtained in 1825. These were to take the place of the *Amity* and the *Nestor,* wrecked in April and December 1824, respectively, and permit of two sailings per month for the line when operating under the most severe conditions of the North Atlantic "ferry" service.

The Sidney Wright-built Black Ballers were good and fast vessels. The *William Thompson* of 495 tons, built in 1821, made a passage westbound in only 20 days, establishing a record for a packet; the average of all of her westbound passages for eight years (1822-1830) was 36 days, with her slowest passage of 43 days being a record for the shortest of the longest passages for a Black Baller (excluding the short two-and-one-half-year career of the *Albion,* wrecked in April 1822). The record of the *William Thompson* held until equaled by the *Great Western* of 1,443 tons, built in 1851, and beaten (one day) by the *James Foster, Jr.,* of 1,410 tons, built in 1854—both by W. H. Webb, of New York. The best westward passage of 20 days, made by the *William Thompson,* was beaten in the history of the Black Ball Line during its first thirty years (1818-1847 inclusive) by only two vessels out of a fleet of thirty-three ships in the service. The *Caledonia* of 647 tons, built in 1828 by Brown & Bell (and not as consistently fast an average sailer, year in and year out, as the *William Thompson*), is credited with a 17-day westbound passage, and the extremely fast "queen of all transatlantic sailing packets," the *Yorkshire* of 996 tons, built in 1843 by W. H. Webb, of New York, made a westbound passage of 16 days. During this period, an old

Black Ball liner, *Columbia I,* is credited with a westbound passage in the London Red Swallowtail service of 17 days from Portsmouth to New York.

James Stuart, a British author and newspaper editor, in THREE YEARS IN NORTH AMERICA (published in Edinburgh, Scotland, 1833), wrote of his passage in 1828 on the American sailing packet *William Thompson* (Capt. George Maxwell) from Liverpool to New York —a crossing of 38 days' duration at sea and 39 days, dock to dock. This packet operated eight years in the transatlantic "shuttle" (1822-1830) and for thirty-three years thereafter was in the whaling trade. Stuart says, "I was surprised to be told at Liverpool that the transatlantic packet ships are all American built and that British ships are generally a fourth more time at sea in making this voyage than American. The latter are sharper in the bows and not so stout [full] and of course sail quicker than the former." In this westbound passage, the *William Thompson* "sailed in the forenoon of July 16, 1828, towed out of the Mersey by a steamboat under the charge of a pilot as far as the floating light at the mouth of the river." The crew, we are told, consisted of the captain, two mates, sixteen men—of various nations, English, Irish, American, Norwegian, Prussian, and French—and a boy, with three colored stewards and two colored cooks. There were eight male and three female first-class passengers, one female servant (attached to the lady of a British officer on the way to Canada), and "two steerage passengers," i.e., a total of twenty-five ship's staff with fourteen passengers, or thirty-nine all told. The "passage money" stated by Stuart from Liverpool to New York was thirty-five guineas "paid on agreeing for the passage" and included "every charge for provisions, wine, spirits, and liquor of all kinds." And he adds, "From New York to Liverpool the passage money is only thirty guineas—the voyage to Europe, owing to the greater prevalence of westerly winds and the favorable influence of the stream from the Gulf of Mexico, being made in the packet ships on an average of voyages in twenty-five days, while the voyage to the westward generally occupies forty days."

It is interesting to note that on the voyage in question the *William Thompson* did not sail down St. George's Channel and to the south of Ireland. Stuart says:

> The wind blew from the south when we got out of the Mersey. Capt. Maxwell, therefore, at once decided on proceeding by the north of Ireland. It is fortunate that Capt. Maxwell adopted the northerly course, as we eventually had a far shorter passage than the ships which left Liverpool with us and for some days previously and which went by the south of Ireland. The wind for the first part of the voyage was favorable and a fine breeze, so we sailed at the rate of from seven to nearly nine knots per hour for the first two or three days. The first quarter of the passage [the whole distance being computed at about 3,400 miles] was passed in six and the second [quarter] in nine days. Calms and contrary winds, fogs and changes of weather, which prevail in crossing the Newfoundland Bank and Gulf Stream, detained us at sea for twenty-three days longer.

From the start, the Black Ball pioneer line of transatlantic packets featured regular scheduled and advertised sailings and speed, and the relative uniformity with which their voyages "have been made," wrote a contemporary authority, "have given them an enviable notoriety and an enduring fame." For the first six years of operation, the thirteen packet ships of the line—from the *Pacific I* of 384 tons, built in 1807, to "the fast and most modern *Canada*" of 525 tons, completed early in 1823—averaged passages of 23 days eastward, or outbound, and 40 days westward, or homebound. The line averages, all sailings, for each of the first six years of service were stated as follows:

	Average Length of Passages in Days			Average Length of Passages in Days			Average Length of Passages in Days	
Year	Eastward	Westward	Year	Eastward	Westward	Year	Eastward	Westward
1818	23	44	1820	22	37	1822	23	41
1819	25	41	1821	25	40	1823	23	39

An American historian has written with justifiable pride: "Such were the performances of our ships on the North Atlantic in all seasons, and in all weathers, when American shipbuilding was in its infancy." The reported average length of Black Ball transatlantic passages was deemed excellent by the marine fraternity from the beginning of the service. The eastward average length of passage for the first six years of 23½ days figures about 6 knots per hour, and the average westward crossing of 40 days only about 3½ knots per hour; but the usual reported passages of general and regular traders over the same course exceeded 30 days eastward and 45 days westward, while passages of from two to three months or even longer westbound were so common as to excite no particular attention or comment. It soon became evident to both passengers and shippers of freight that, in addition to being able to bank on a definite date of sailing, they could count on the fact that the transatlantic sailing packets of established lines were generally faster and averaged a better time for passages than the best of the regular traders on the same run. The New York transatlantic sailing packets, from the first, made faster crossings than the regular, or general, traders. The earliest of all the packet westbound passages—the pioneer passage of the *Courier* in January-February 1818—occupied 47 days in "very bad weather," but a British transient crossing at the same time and "bucking the winter westerly gales" required 90 days to make the run from Dublin to New York. Owing to the prevailing westerly winds, the transatlantic passage eastbound has usually been much shorter for sailing vessels than the westward run. The old salts well expressed the difference in the two runs under canvas with the saying, "It's all downhill going east'ard and all uphill coming back." Later, clipper ships were to strive for a single fast voyage, a fast run between points, or a big day's run, and a few hours cut off a passage between points or a number of miles added to a day's run would bring immortality to a clipper, but with American transatlantic (or coastal) packets it was very different. The Black Ball Line owners and management started in early to rate a packet and the line's service based on the average time required for completing passages throughout the years (and all the seasons of the year) and on dependable regularity of good performance, particularly on the difficult westward North Atlantic run. During 1826 the average time for all westbound passages of Black Ball sailing packets (Liverpool to New York) was 36 days and of all the packet lines engaged in this service, 37 days; whereas the average length of the crossing for ordinary shipping between the same ports was 42 days. The fastest westbound packet ship run during the year was 24 days, and the best time made by an ordinary merchant (and non-packet) vessel was 30 days. The slowest run for the year was 67 days for a packet and 84 days for a non-packet sailing ship.

The following record of transatlantic sailing packets of the Black Ball liners in the New York service, during the period 1818-1827, is from statements officially made by the management of the line in 1828. The length of passages stated is from port to port and not from land to land; i.e., it is the true total time from the city or port of departure to the city or port of destination. The average length of all passages was stated for the first ten years that the line had been in operation as "Eastbound—New York to Liverpool, 24 days; westbound—Liverpool to New York, 38 days." The following is an analysis of eastbound passages prepared from "Eastbound—Length Distribution" figures made public:

Passage in Days	No. of Passages	Cumulative No. of Passages	Cumulative Percentage of Total	Passage in Days	No. of Passages	Cumulative No. of Passages	Cumulative Percentage of Total
16	1	1	0.53	27	8	159	84.57
17	3	4	2.13	28	9	168	89.36
18	9	13	6.92	29	2	170	90.42
19	12	25	13.30	30	4	174	92.55
20	15	40	21.27	31	1	175	93.08
21	27	67	35.64	32	2	177	94.14
22	18	85	45.21	33	3	180	95.74
23	15	100	53.19	34	3	183	97.34
24	16	116	61.70	35	3	186	98.94
25	17	133	70.74	36	1	187	99.47
26	18	151	80.40	37	1	188	100.00

The monthly average length of passages on both the eastbound and westbound crossings was stated as follows:

Month	Average Length of Passages in Days: East-bound	West-bound	Month	Average Length of Passages in Days: East-bound	West-bound	Month	Average Length of Passages in Days: East-bound	West-bound
January	24	42	May	24	35	September	25	33
February	24	40	June	25	38	October	24	37
March	23	36	July	24	40	November	22	38
April	24	34	August	23	36	December	24	48

The fastest ship average announced by the Black Ball Line in 1828, covering service up to the end of 1827, was that of the *Canada* of 525 tons, built in 1823, with an average length of passages of 21 days eastbound and 34 days westbound, which was amazingly fast. The slowest ship average stated was for the *Orbit* of 384 tons, built in 1821, which ran in the line temporarily in 1822-1824; during this time, the vessel averaged 29 days eastbound and 46 days westbound.

Racing of the packet sailing ships across the Atlantic Ocean in the second quarter of the nineteenth century has been described as "fast and furious," which is an exaggeration. The winners of the "races," however, received good advertising, and all fast packet passages were given a large amount of publicity; but there is a big difference between the speed attained by sailing ships in fast record passages, under unusually favorable conditions of wind and sea, and the average performance of an individual vessel and of a line of packets. The *Canada,* for a number of years, was the greyhound of the Black Ball fleet, and she is credited with an eastbound passage of 15 days and 18 hours. The *Canada* also headed the fleet for the best average time of crossings; during several years this record average, for this limited period, was advertised as 19 days eastbound and 36 days westbound. For the entire ten years (1823-1833) that the *Canada* was engaged in the Black Ball New York-Liverpool service, she averaged 34 days for her westbound passages, port to port, her best crossing being in 23 days and her slowest passage occupying 62 days under wretched sailing conditions of wind and sea. Later, in 1833-1835, in the London Red Swallowtail Line, she made a westward passage in 22 days, and her longest crossing under that flag was of 40 days, with an average of 36 days. After eight years as a general trader and transient, the *Canada* was a New Bedford whaler, and she also participated in the California Gold Rush. As a whaler, she was lost off Brazil in 1856 through no fault of the ship.

The Transatlantic Packet Expansion Year of 1822—the Founding of the Red Star and Blue Swallowtail Lines and the Doubling of the Black Ball Line Service

The Black Ball Line operated without competition in the transatlantic packet field for over four years, but three new lines came into existence in 1822—two with packets running (as did the Black Ball ships) to Liverpool and one to Havre, France. The first competition to appear was the Liverpool Red Star (or Second) Line, organized by Byrnes, Trimble & Company, a New York firm of Quakers engaged in the Chesapeake flour trade. (J. & R. Loines, a New York importing house, was a silent partner, and Byrnes married Mary A.

Loines.) For years, Byrnes, Trimble & Company had been operating regular traders between New York and Liverpool, but on January 3, 1822, it publicly announced the founding of a packet line modeled after the Black Ball Line, with four ships and definite, scheduled monthly sailings. On January 25, its pioneer packet ship *Meteor* (Capt. Nathan Cobb) left the dock as advertised bound for Liverpool; however, the harbor was so blocked with ice that she did not pass down the bay and through the narrows until January 27, and then she had to be towed through the ice.

The original fleet of four ships of the Red Star Line averaged 355 tons each and was somewhat smaller in tonnage than the pioneer quartet of the Black Ball Line, which averaged 393 tons. Upon commencing the service, the ships of the Red Star Line averaged three and one-half years old; the Black Ballers, three and three-quarters years. The pioneer ships of the Red Star Line, with their dimensions, builders, and length of service as transatlantic packets, can be described as follows:

Name of Packet	Tonnage Measurement	Dimensions Feet and Inches			Builder	Year Built	Service in Red Star Line
		Length	Beam	Depth of Hold			
METEOR	325	106-5	26-1	13-0	Newburyport, Mass.	1819	1822-1825
HERCULES	334	103-0	27-1	13-6	J. Lozier, New York	1816	1822-1823
MANHATTAN	390	110-0	28-3	14-1	S. Wright, New York	1818	1822-1826
PANTHEA	370	106-0	28-1	14-0	Fickett & Crockett, New York	1821	1822-1827

These vessels were good average sailers and averaged 41 days on their westbound passages (during an average length in the service of three and one-quarter years per vessel). The *Panthea* made her best westward crossing in 29 days, the *Meteor* in 30 days, the *Manhattan* in 31 days, and the *Hercules* in 33 days. The slowest passage of the *Meteor* was 51 days; the *Hercules,* 52 days; the *Panthea,* 63 days; and of the *Manhattan,* 67 days. The *Hercules'* career as a packet was brief; she was withdrawn from the line in the winter of 1822-1823 and resumed her work as a regular trader, the newly built *John Wells* of 366 tons, constructed by Brown & Bell, of New York, taking her place. The "*Wells*" was the fastest of the original quintet of Red Starrers that saw service in the line in its first six years, and whereas not so fast as many contemporary Black Ballers (such as the *Albion, Columbia, William Thompson, Canada,* and *Florida*), she continued to be the fastest packet of the Red Star Line until the *Sheffield* of 578 tons, built by Smith & Dimon, appeared in the service in 1831. Of the first five vessels operated as packets by the Red Star Line, one, the *Panthea,* was wrecked (at Holywood, Wales, January 14, 1827), after five years in the service, and the other four became whalers. The *Meteor* and the *Hercules* went into the whaling trade in 1827, and both remained in that trade until 1865, i.e., for thirty-eight years, at which time the *Meteor* was forty-six years old and the *Hercules* forty-nine years. The *Manhattan* was a whaler during the years 1830-1856 (twenty-seven years), and when forty-three years old, she was acquired by the government and deliberately sunk in 1861 as one of the "Stone Fleet" to blockade Charleston Harbor. The *John Wells* became a whaler in 1834, survived the period of the Civil War, and continued in the trade for thirty-seven years, or until she was forty-nine years old. Of the first ten packet ships sailing under the Black Ball flag, four became whalers, four were wrecked, and two passed to other lines or types of trading; five of the first ten ships of the Red Star Line became whalers, two were wrecked, and three drifted into transient trading.

The Black Ball Line met the competition of the Red Star Line by doubling the number of its packet ships and inaugurating middle-of-the-month sailings to augment its fleet which sailed early in the month. Why the Red Star Line started its sailings during the third week of the month is unknown, but by doing so the new line played into the hands of the Black Ballers; for the pioneer packet line was enabled to double its sailings, keeping them uniformly half a month apart, and have no sailing within a week of that of a competitive packet. Another strange thing is the fact that the mid-month sailing of the Black Ballers was designated by the contemporary marine fraternity as the Liverpool "Third Line," which it was not, being merely additional service and sailings supplied by the Liverpool—Black Ball—Old (or First) Line.

The Black Ball Line, when it doubled its service between New York and Liverpool by mid-month sailings in 1822, added six new packets to its fleet in that year, one in 1823, and two in 1824; it lost by disasters the services of the *Albion* and the new *Liverpool* in 1822, sold the old *James Monroe* in 1823 and the *Orbit* in 1824, and lost both the *Amity* and *Nestor* when they were wrecked in 1824. The following nine packet ships were placed in the Black Ball Line during the years 1822-1824 inclusive:

Name of Packet	Tonnage Measurement	Dimensions in Feet and Inches			Builder	Year Built	Service in Black Ball Line
		Length	Beam	Depth of Hold			
COLUMBIA I	492	123	29-10	14-11	S. Wright, New York	1821	1822-1826
JAMES CROPPER	495	120	30- 5	15- 2	S. Wright, New York	1821	1822-1828
WILLIAM THOMPSON	495	120	30- 5	15- 2	S. Wright, New York	1821	1822-1830
LIVERPOOL I	496	126	29- 6	14- 9	S. Wright, New York	1821	1822
NEW YORK I	516	127	30- 0	15- 0	Brown & Bell, New York	1822	1822-1834
ORBIT	384	108	28- 4	14- 2	Brown & Bell, New York	1821	1822-1824
CANADA	525	131-6	35- 3	15- 1	Brown & Bell, New York	1823	1823-1833
PACIFIC II	586	133-6	31- 2	15- 4	Brown & Bell, New York	1824	1824-1834
FLORIDA	522	123	30-10	15- 5	Smith & Dimon, New York	1822	1824-1831

The *Columbia I* was a fast vessel, but after four and a half years in Black Ball service, she ran in the London Red Swallowtail Line until 1833, when she was condemned after a collision in the English Channel. The *James Cropper,* after six years in the line, became a transient, and she was wrecked near Cape Henlopen December 15, 1832, when eleven years old. The *William Thompson,* after eight years as a Black Baller, was sold for a whaler in 1830 and sailed out of New Bedford in that trade for thirty-three years (1830-1863), until the Civil War put an end to her profitable activities. The *Liverpool* struck an iceberg and was lost July 25, 1822, on her maiden eastbound Atlantic crossing. The *New York I,* after twelve years' service in the line, became in 1834 a New York-Greenock "packet," and the *Orbit* of 384 tons, acquired in an emergency, proved far too small and slow for the service and was sold in 1824 to Baltimore registry. The *Canada* was an outstanding early packet, and in addition to being probably the first "luxury liner" as far as appointments were concerned, she was beamy, a comfortable sea boat, and fast. After ten years as a Black Baller, she operated for two years in the New York-London Red Swallowtail Line (1833-1835), following which she was a general trader and transient for eight years and in 1843 became a New Bedford whaler. She was diverted to the California trade in 1849-1851, resumed whaling, and was lost on the coast of Brazil in 1856, when thirty-three years old, due to South American incompetence. The *Pacific II,* after ten years' service in the line, became a transient, and the *Florida,* after seven years, was sold in 1831 to Philadelphia registry. There were eight Black Ball liners in service at the commencement of 1824, but during that eventful year one vessel was sold, two wrecked (the *Nestor* on Christmas Day), and two new vessels put in the service, the numerical strength of the fleet being restored to the required eight vessels by the acquisition of the new but very slow packet *Manchester* of 561 tons in early 1825.

With packet sailings from New York to Liverpool at the commencement of the first, third, and fourth weeks of every month, it was natural that the opening for a line with sailings on the second week of each month would soon be filled. The Red Star Line's initial sailing was on January 25, 1822; the Black Ball Line inaugurated its mid-month schedule (while continuing its first-of-the-month sailings) on March 16, 1822; and on August 8, New Englanders entered into the New York-Liverpool packet field when Fish & Grinnell formed the Blue Swallowtail (or Fourth) Line, with the sailing of the *Robert Fulton* of 340 tons (Capt. Henry Holdredge) carrying aloft the swallowtail flag of her owners, which became the symbol of and gave the name to the line. With the sailing of the *Robert Fulton,* New York had a packet service to Liverpool of four sailings a month (practically one each week) and a like number of return sailings from Liverpool. For sixteen years (1822-1838), the following schedule of transatlantic sailings between the two ports remained unchanged:

Date of Sailing Each Month	Line		Date of Sailing Each Month	Line	
	Popular Name	Known as		Popular Name	Known as
First	Black Ball Line	Old Line	Sixteenth	Black Ball Line	Third (or Old) Line
Eighth	Blue Swallowtail Line	Fourth Line	Twenty-fourth	Red Star Line	Second Line

The popular names mentioned above did not come into general use until the forties; during the twenties and thirties, the lines were referred to as the "Old Line" (occasionally Black Ball), "Second Line," and "Fourth Line."

The first four ships to see service in the Liverpool Blue Swallowtail (or Fourth) Line were the following:

Name of Packet	Tonnage Measurement	Dimensions in Feet and Inches			Builder	Year Built	Service in Blue Swallowtail Line
		Length	Beam	Depth of Hold			
ROBERT FULTON	340	103-4	27- 2	13- 7	B. Brooks, Boston	1818	1822-1824
CORTES	381	106-6	28- 6	14- 3	New Bedford, Mass.	1820	1822-1826
CORINTHIAN	401	112-6	28- 3	14- 1	Smith & Dimon, New York	1822	1823-1827
LEEDS	408	112-8	28- 6	14- 3	S. & F. Fickett, New York	1823	1823-1827

The pioneer ship of the Blue Swallowtail Line, the *Robert Fulton,* was both slow and small for the service, averaging, during her two and one-half years of service in the line, 44 days for her westbound crossings (best run, 37 days; slowest, 60 days). In the fall of 1824, she was transferred to the transatlantic New York-Greenock and Belfast runs and was replaced in the Blue Swallowtail New York-Liverpool service by the *Silas Richards* of 454 tons, built by Isaac Webb & Company, New York. This packet ran for ten years in the line notwithstanding the fact that she was a slow sailer and averaged 39 days on her westward passages (best crossing, 25 days; longest, 67 days). (The "*Richards*" was a transient for eight years and then a whaler for thirteen years, 1841-1854, during which time she was set on fire three times by her crews before being lost in Shanta Bay, South Pacific.) The *Cortes* was transferred to the London line of the company in 1826 and replaced by the *York* of 433 tons, built by W. Crockett, New York. The *Corinthian,* in 1827, and the *Leeds,* in 1828, were moved over to the London run and replaced, in the more important and competitive Liverpool service, by the *Napoleon* of 538 tons (built at New Bedford) and the *George Canning* of 551 tons (built by Brown & Bell, New York)—newer and larger ships.

These early vessels of the New York-Liverpool Blue Swallowtail Line (excluding the *Robert Fulton,* withdrawn from the service in 1824) averaged 36½ days on their westbound passages during the years 1822-1836. The best westward runs of these ships were: *George Canning* 21 days, *Leeds* 23 days, *Cortes* 24 days, both *Corinthian* and *Silas Richards* 25 days, *Napoleon* 26 days, and *York* 31 days. The slowest westbound passage was a 67-day crossing of the *Silas Richards,* whereas the slowest westward run of the *Leeds* in the Liverpool-New York service occupied only 40 days. Of the first five vessels of the Liverpool Blue Swallowtail Line, three—the *Cortes, Corinthian,* and *Silas Richards*—went later into the whaling trade. The "*Richards*" made whaling voyages for thirteen and one-half years (1841-1854), the *Cortes* for nearly thirty years (1828-1857), and the *Corinthian* for about thirty-seven years (1831-1868), being forty-six years old when her whaling days were over. The *Robert Fulton,* after four years as a regular trader, three years as a Liverpool Swallowtail liner, and about five years as a New York-Greenock and Belfast "packet," was wrecked at the Azores in October 1830. The *Leeds,* after six years in the Blue Swallowtail Liverpool line, was transferred and ran in 1828-1829 in the London Red Swallowtail Line and then went into transient trading, as a larger ship (the *George Canning* of 551 tons) displaced her.

All of the ships of the Black Ball Line, throughout its history of sixty-one years (1818-1878), were built in New York, and the last fourteen of them (launched 1836-1855) were constructed by Webb (four by Webb & Allen in 1836-1843 and the last ten by W. H. Webb during 1843-1855). The first ship of the Red Star (or Second) Line was built at Newburyport, Mass., in 1819, and the last one (the clipper packet *Phoenix*) was built at Cape Elizabeth, near Portland, Maine, in 1853; the other nineteen vessels were built in New York with the exception of the *John R. Skiddy* of 980 tons, which was constructed at Newburyport in 1845. (This Second Line, which never quite measured up to its competitors in quality of ships and service, was operated from 1822 to 1867, a period of about forty-six years.) The Fourth Line (Blue Swallowtail) commenced operation with two New England-built and two New York-built ships, and of its twenty-five ships operating in the service during a period of over forty-five years (1822-1867), seventeen were built in New York and eight in New England.

Two New Yankee-owned Packet Lines to London
Black X and Red Swallowtail

London, the greatest seaport in the world in those days, did not become the terminus of a line of transatlantic sailing packets until 1824, or over six years four months after Liverpool had enjoyed the benefits of packet line connections with America. The reasons for this are probably many, but two stand forth conspicuously. London was essentially a port of imports and not an outlet for exports as was Liverpool. The location of London on the east coast of England and "well up the Thames River" made it necessary for ships to sail the erratic English Channel, Straits of Dover, and around the Kent coast; therefore, London was not so handy a port to reach and make good passage "to and from" as was Liverpool on the west coast. This refers to cargo shipments only, for passengers to London disembarked at a channel port (generally Portsmouth), and both passengers and mail—outbound and incoming—were transported between the city terminus of the line and the channel port by coaches. Moreover, the sailing time between ports of the London packets is given as the time of the passage between their leaving and arriving at the mail and passenger ports; therefore, in comparisons of length-of-passage statistics, the London packets are not handicapped by the geographical location of the east coast, "upriver" Thames port, for Portsmouth is about the same distance from New York and as easy to reach or sail from as are Havre and Liverpool.

Again, the carrying of British manufactures westward was not only the prime cause for the founding of the first packet lines but also, for long years, the "financial backstay" of the packet service, and Liverpool—not London—was the shipping port of the products that, through the industrial revolution, made northern and central England the "workshop of the world" and Yorkshire and Lancashire supreme in the manufacture of cottons and woolens. The founders of the Black Ball Line were primarily importers of British textiles, and some of the partners were interested in shipping raw cotton for fabrication to the English north counties. Nevertheless, an effort was made to establish a line of packets between New York and London in September 1822, but this attempt failed. It was not until May 1824 that a line was properly organized, promptly followed by an initial sailing from New York, on June 1, of the *Hudson* of 368 tons (Capt. Henry L. Champlin). This London packet service, which became known as the Black X Line, had three ships in the run in 1824, and the prime mover in the venture was John Griswold, a Yankee from Old Lyme, Conn. John Griswold and his brother Charles C., who also was active in the line, were cousins of the Griswolds of the prominent New York commercial house of N. L. & G. Griswold (popularly referred to as the "No Loss and Great Gain" Griswold firm.

Another outstanding New England shipping house, Fish, Grinnell & Company (later Grinnell, Minturn & Company), inaugurated a second New York-London packet line in 1824 with the sailing of the *Brighton* of 354 tons. This firm owned and operated the Liverpool Fourth, or Blue Swallowtail, Line running between New York and Liverpool, and the "New Line" to London, which commenced scheduled sailings two years after the firm initiated a packet service to Liverpool, became known as the London Red Swallowtail Line. Albion says that the Swallowtail lines "were almost purely Yankee concerns, with operators and owners chiefly from the whaling port of New Bedford." Fish and Grinnell (a partnership of Preserved Fish and Joseph Grinnell, his cousin) were originally in the fish oil business, from which they expanded into many other fields, including shipowning and packet ship management. As Albion says in SQUARE-RIGGERS ON SCHEDULE:

> The most conspicuous operating record in the New York packet service was probably that of the Grinnells with their Swallowtail lines to Liverpool and London. They managed packets with unbroken continuity throughout the period, when most of the other lines were changing hands; they owned and ran more packets than any other firm, for in the late forties they had eight on the Liverpool run and six in the London service at one time; and, finally, their ships, while seldom spectacular, built up a remarkable record for punctuality in their sailing dates and for steady regularity in their voyages. The Swallowtail ships made better winter records than any others, and, while they seldom made exceptionally short trips, they seldom made extra long ones.

During the first four years of operations (1824-1827 inclusive), each of the two New York-London packet lines—Black X and Red Swallowtail, or the Griswold and the Fish, Grinnell & Company lines—put five ships into the service, and from the first there was very close conjunction between these two "Yankee-owned lines"; the Black X and Swallowtail ships sailed alternately, the two services often advertised jointly, and when new ships were needed each line built one. The lines were, nevertheless, separate entities, and the operation of each was distinct from that of the other; yet by co-operative competition they kept would-be rivals from establishing packet lines between New York and London. Whereas the famous and original Black Ball, or Old, Line (New York-Liverpool) had to contend with four high-class rival packet lines (Red Star, Swallowtail, Dramatic, and New Line) during the years 1822-1868, the two pioneer New York-London lines (Black X and Red

Swallowtail) kept the London service to themselves from 1824 to the end of the sailing packet era in 1881, and no transatlantic sailing packets other than six Red Swallowtail ships —*American Congress* (863 tons), *Rhine* (1,037 tons), *Plymouth Rock* (973 tons), *Sir Robert Peel* (940 tons), *Liverpool* (1,077 tons), and *Cornelius Grinnell* (1,117 tons)—were engaged in the sailing packet service on any line to any port after the old Black Ball Line suspended operations and withdrew its last three ships—*Isaac Webb* (1,359 tons), *Great Western* (1,443 tons), and *James Foster, Jr.* (1,410 tons)—from the service in 1878.

The first five ships of the London Black X and of the Red Swallowtail lines were the following:

Name of Packet	Line	Tonnage	Dimensions in Feet and Inches: Length	Beam	Depth of Hold	Builder	Year Built	Service in Line
HUDSON	Black X	368	106-0	28- 0	14- 0	S. & F. Fickett, New York	1822	1824-1832
ACASTA	Black X	330	99-0	27- 7	13- 9	Athens, New York	1818	1824-1828
CRISIS	Black X	336	103-0	27- 2	13- 7	S. Story, Norwich, Conn.	1819	1824-1826
BRIGHTON	Red Swallowtail	354	105-4	27- 6	13- 4	W. Crockett, New York	1824	1824-1831
YORK	Red Swallowtail	433	118-6	28- 6	14- 3	W. Crockett, New York	1824	1825-1833
CORTES*	Red Swallowtail	381	106-6	28- 6	14- 3	New Bedford, Mass.	1820	1826-1827
CAMBRIA	Black X	362	108-2	27- 6	13- 9	Kensington, Pa.	1826	1827-1832
ROBERT EDWARDS	Black X	355	103-0	28- 0	14- 0	F. Cheeseman, New York	1817	1827-1830
COLUMBIA I**	Red Swallowtail	492	123-0	29-10	14-11	S. Wright, New York	1821	1827-1833
CORINTHIAN*	Red Swallowtail	401	112-6	28- 3	14- 1	Smith & Dimon, New York	1822	1827-1831

* Transferred from Liverpool Blue Swallowtail Line.
** Acquired from Liverpool Black Ball Line.

Seven out of the earliest ten New York-London packets later entered the whaling trade. Of these, the *Acasta* is known to have been whaling in 1840 when twenty-two years old, the *Brighton* in 1859 when thirty-five years old, the *York* in 1847 when twenty-four years old, the *Cortes* in 1857 when thirty-seven years old, and the *Corinthian* in 1868 when forty-six years old. The *Hudson* and *Cambria* have their ends surrounded in mystery; both as whalers were "sold foreign" during the Civil War when capable of many more years of service, although when disposed of to escape the depredations of Confederate commerce raiders the *Cambria* was thirty-six and the *Hudson* forty-one years old. Of the other three ships, the *Crisis* (Black X) "went missing" on her London-New York March 1826 sailing, the *Columbia* (Swallowtail) was condemned after a collision in the English Channel, and the *Robert Edwards* (Black X), withdrawn from the line in 1830, was sold to Rhode Island parties.

Contrary to the general statements made by marine historians, the packet ships of the two New York-London lines made relatively good time (compared with the packets on other routes) in their ocean crossings between passenger and mail ports—and this from the inauguration of the service.

The Three New York-Havre Packet Lines

The year 1822 not only saw the New York-Liverpool packet ship service extended from four ships with sailings of one each month to sixteen ships—owned by three lines—with sailings of four each month (i.e., virtually a service with a vessel dispatched from each side each week) but also marked the inauguration of a packet service from an American port to a European continental port. An attempt had been made to form a New York to Le Havre, France, packet line on the New York-Liverpool Black Ball model, but nothing had come of it. In 1822, with the undeniable success of the Black Ball service to work on and with the Red Star (Second Line) and Blue Swallowtail (Fourth Line) entering the field and the "Old Line" (Black Ball) doubling its fleet and service, a New York-Havre line of packets was organized by Francis Depau (assisted by Isaac Bell and Capt. Miles R. Burke) "to sail six ships a year from each side and hoping to get encouragement enough to increase very soon to a monthly service." Captain Burke himself took out from New York on September 10, 1822, the packet ship *Montano* of 365 tons. The service, which became known as the first Havre line, or "Old Line," and later (when it combined with the Whitlock) as the "Union Line," started with two ships, quickly increased to three, and within a year was operating four ships averaging 337 tons. All of these ships were new when they entered the service except the pioneer *Stephania,* which was three years old. One of this original quartet was the diminutive *Henry* of only 257 tons, a ship built for coastwise service and far too small and slow for a transatlantic packet plowing the North Atlantic, particularly in the winter season.

No sooner had the first Havre line of packets been established than a second line was organized (announced January 13, 1823) with four ships, one of which sailed from New York the first of each month. The initial sailing of the Havre Second Line was that of the small and relatively old, little Baltimore-built ship *Marmion* of only 277 tons. Although the *Marmion* was replaced in 1824, the *Queen Mab,* built as a Savannah coastwise trader, operated in the line for four years (1824-1828), and she was of only 270 tons.

A third New York-Havre line, also inaugurated in 1823, was that of William Whitlock, Jr., who had a particular interest in southern cotton. Whitlock was an isolationist in business and would not have partners or be one of a group of owners of a single vessel or of a line. He placed his 306-ton *Cadmus* in the run between New York and Havre, in 1823, as a packet ship operating on a definite schedule. She sailed in this one-ship packet line for five years and was replaced in 1829 by the larger, new ship *Formosa* of 450 tons, which ran alone in the Whitlock Line until 1833, or until the still larger *Poland* appeared and made the Whitlock a two-ship line. By 1838 the line was operating four ships regularly, *Albany* (468 tons), *Poland* (546 tons), *Emerald* (518 tons), and the *Duchesse d'Orleans* (798 tons), and the *Formosa* was withdrawn from the service. The Havre Second Line was a loosely organized affair under the management of John J. Boyd, and Whitlock operated his "lone wolf" line of one or two ships for years in co-operation with the "Boyd Line," or Second Line. Albion comments on the fact that the Havre packet service "covered the whole range of ownership from Whitlock with his solitary stand, through the conventional group control exercised by the Depau-Fox-Livingston group (Old Line), to Boyd (Second Line), who spent most of his time managing other people's ships."

The early New York-Havre packet ships of all three lines were too small for transatlantic service, but larger vessels gradually replaced them, and the Havre packets, while never so big, well run, or important as the Liverpool packets, held their own quite well with the London packets until the Civil War and were the only important sailing packets operating on a definite, advertised schedule between an American and a European continental port. The pioneer ships of the three Havre packet lines, including all of the vessels that entered the service prior to the close of 1824, were as follows:

Name of Packet	Line	Tonnage Measurement	Dimensions Feet and Inches: Length	Beam	Depth of Hold	Builder	Year Built	Service in Line
MONTANO	Old	365	104-6	28- 2	14- 1	N. Brown, New York	1822	1822-1829
STEPHANIA	Old	315	97-0	27- 3	13- 7	N. Brown, New York	1819	1822-1828
HENRY	Old	257	93-6	25- 0	13-11	Brown & Bell, New York	1822	1823-1826
LEWIS	Old	412	116-0	28- 8	14- 4	C. Bergh & Co., New York	1822	1823-1827
MARMION	Second	277	94-4	25-10	12-11	Baltimore	1811	1823-1824
BAYARD	Second	339	99-0	28- 0	14- 0	C. Bergh, New York	1819	1823-1829
DON QUIXOTE	Second	260	97-0	24- 6	12- 3	C. Bergh, New York	1823	1823-1829
PARIS	Second	338	103-0	27- 3	13- 7	C. Bergh, New York	1823	1823
CADMUS	Whitlock	306	97-6	26- 9	13- 4	S. Wright, New York	1818	1823-1828
HOWARD	Second	336	107-0	26- 6	13- 3	Smith & Dimon, New York	1822	1823-1827
QUEEN MAB	Second	270	92-0	25- 0	13- 4	J. Morgan, New York	1824	1824-1828
DESDEMONA	Second	294	97-6	26- 2	13- 1	Middletown, Conn.	1823	1824-1826
EDWARD QUESNEL	Second	388	106-0	28-10	14- 5	C. Bergh & Co., New York	1824	1824-1831

These thirteen vessels averaged 321 tons, were a little over two years old when put in the service, and continued to run in one of the Havre lines on an average of somewhat over five and one-half years. They averaged, while in the run, about 38½ days on their westbound passages (the *Bayard, Don Quixote,* and *Howard,* each with an average of 36 days, being the fastest and the *Henry* with 44 days and the *Edward Quesnel* with 42 days being the slowest). The fastest single westbound crossing was a spectacular passage of the *Bayard* in 18 days, but the next best runs were those of the *Marmion* and the *Howard* in 26 days. The slowest westbound crossings were made by the *Stephania* and the *Edward Quesnel,* each in 61 days.

Whitlock's "lone" packet, the *Cadmus,* achieved a measure of historic prominence by bringing Lafayette to America in 1824—the entire ship being placed at the disposal of the Frenchman as a patriotic gesture. The *Paris* had the second briefest career among either transatlantic or coastal American packets. She piled up on the French coast on November 1, 1823, about twenty miles from Cherbourg and was dashed to pieces; fortunately, no lives were lost in this disaster, but the second mate and crew were later lost in the foundering of a French sloop that was taking them from Cherbourg to Havre. The *Paris* was launched by Christian Bergh on April 12, 1823, for her owner-commander, Capt. Henry Robinson, and she was wrecked near the end of her second eastbound passage. Of the first thirteen ships in the New York-Havre packet lines, five later became whalers, two were wrecked, three went into the Savannah coastal packet service, and three became transient traders, or sailing tramps. The *Lewis* of the Old Line was wrecked at Barnegat Inlet, New Jersey, on March 6, 1827, when the ship was four and one-half years old. The *Stephania,* one of the two pioneers of the Havre packet line, had a long and honorable career. Built in 1819, she operated three years as a regular trader, ran six years (1822-1828) in the Havre Old Line, and for over forty years (1828-1868) was a successful and profitable whaler, after which, when forty-nine years old, she was "sold British" while at Sydney, Australia, and was renamed the *Onward.* The *Montano,* which initiated the New York-Havre packet service, ran in the line for over seven years (1822-1829), following which she was in the whaling trade for twenty years (1829-1849), sailing around the Horn and taking a ship's load of Argonauts and their belongings to California during the Gold Rush. The *Cadmus* was a whaling ship during the period 1831-1842; the *Edward Quesnel,* from 1832 to 1839. The *Desdemona,* after two years as a Havre packet and seven years as a regular trader, became a whaler in 1833 and was still registered as such at New Bedford sixty-two years later, when she was seventy-two years old. The Havre Old Line and the Whitlock Line later combined and operated as the Union Line until 1863-1864, when the service was discontinued because of the Civil War and the fact that the French lines had been virtually sustained eastbound by shipments of southern cotton (with some volume of continental immigrants westbound).

The ships of the various packet lines that entered the trade prior to 1830 and continued the longest in the service after that time were as follows:

Line	Packet Ship	Builder	In Service	Length of Westbound Passages in Days: Average	Best	Slowest	Subsequent Service
Black Ball, Liverpool	CALEDONIA (647 tons)	Brown & Bell, New York	1828-1836 (8 yrs.)	37	17	50	Transient after collision
Red Star, Liverpool	JOHN JAY (502 tons)	Brown & Bell, New York	1827-1834 (7 yrs.)	41	24	59	Whaler and Cape Horner
Blue Swallowtail, Liverpool	NAPOLEON (538 tons)	New Bedford, Mass.	1827-1836 (9 yrs.)	34	26	46	Transient
Black X, London	HUDSON (368 tons)	S. & F. Fickett, New York	1824-1832 (8 yrs.)	36	25	59	Whaler
Black X, London	CAMBRIA (362 tons)	Kensington, Pa.	1827-1832 (5 yrs.)	41	30	48	Whaler
Red Swallowtail, London	HANNIBAL (440 tons)	Fickett & Crockett, New York	1829-1836 (7 yrs.)	35	25	57	Transient
Old Line, Havre	FRANCOIS I* (496 tons)	C. Bergh & Co., New York	1828-1847 (17 yrs.)	36	24	56	Transient
Second Line, Havre	CHARLES CARROLL (411 tons)	C. Bergh & Co., New York	1828-1840 (12 yrs.)	41	30	66	Whaler
Second Line, Havre	ERIE** (451 tons)	C. Bergh & Co., New York	1829-1840 (11 yrs.)	42	24	82	Whaler
Whitlock, Havre	FORMOSA (450 tons)	Fickett & Thomas, New York	1829-1838 (9 yrs.)	40	27	58	Whaler

* Out of service 1839-1841 following accident.
** Has the reputation of being the slowest of the transatlantic packets, but according to the records, there are a few packets that challenge her for this negative "honor."

Sailing Records of New York Transatlantic Packets Prior to 1830 and the Liners' Length of Service

An analysis of the sailing records of the various lines actually shows that the ships put in the London (Portsmouth) branch of the transatlantic packet service prior to 1830 made, on an average, better time on the westbound run than those engaged in either the much better patronized and popular Liverpool-New York route or on the Havre-New York run. Available statistics show that the New York transatlantic packets that entered the service prior to 1830 on the Liverpool run were thirty-five in number, saw a total of 190 ship-years in the service (an average of a scant five and one-half years per ship), and averaged, for the entire period that they were in this packet trade, westbound passages of 37¾ days. On the London run, twelve ships entered the service in the same period and saw a total of 59 ship-years in the trade (an average of about five years per ship), and the average length of their westbound passages was only 36⅔ days, or over a day less than that of the packets on the shorter Liverpool run. On the Havre route, twenty-four ships entered the packet trade prior to 1830, saw a total of 167 ship-years of service, and averaged 38¾ days on their westbound passages. The total for the eight transatlantic packet lines on the three routes shows seventy-one ships entering the service prior to 1830 and sailing 416 ship-years (an average of a scant six years per vessel), and the average length of westbound passages ("uphill," or against the prevailing west wind) was 38 days. The breakdown of these figures for the eight New York transatlantic sailing packet lines over the three trade routes (to Liverpool, London, and Havre), covering all vessels that entered the service prior to 1830, gives the following data:

Line	Number of Ships Entering Service Prior to 1830	Number of Ship-years of Service Prior to 1830	Average Length of All-time Westbound Passages of All Ships That Entered Service Prior to 1830			Average Length of Packet Service per Ship	Average Tonnage per Ship	Average Age of Packets	
			All Passages	Shortest	Longest			Entering Service	With-drawn from Service
			Days	*Days*	*Days*	*Years*	*Tons*	*Years*	*Years*
Black Ball, Liverpool...	18	104	37½	27	56½	5¾	502	1½	7¼
Red Star, Liverpool.....	9	39	39½	29	54	4⅓	436	2½	6⅞
Blue Swallowtail, Liverpool	8	47	36¾	26½	51¼	6	438	1¼	6¾
Total three Liverpool lines	35	190	37¾	27⅓	55¼	5½	470	1⅔	7
Black X, London.......	5	22	38¾	29½	53¼	4½	350	5	9
Red Swallowtail, London	7	37	35½	25½	53½	5¼	416	4¼	9
Total two London lines.	12	59	36⅔	27¼	53½	5	388	4½	9
Old Line, Havre.......	9	79	37½	27	55¼	8¾	411	⅔	9½
Second Line, Havre.....	13	74	40	27¼	55¾	5¾	349	1½	6¾
Whitlock, Havre	2	14	39	22	49	7	378	2½	9½
Total three Havre lines..	24	167	38¾	26¾	55	7	375	1¼	8
Total eight transatlantic lines	71	416	38	27⅛	54⅞	5⅞	424	2	7⅔

The transatlantic packet ships eastbound naturally made good time, on the average, for conditions of wind and sea were usually favorable on the outbound run, and the average time of the eastward passages—with the ships benefiting by the prevailing west wind and Gulf Stream current and sailing "downhill"—was always materially less than that of the westbound, or homeward, passage. Albion, in an appendix of his excellent work SQUARE-RIGGERS ON SCHEDULE, gives figures adapted from statements made by owners and material printed in the JOURNAL OF COMMERCE (1828) on the length of all Black Ball Line transatlantic passages during the first ten-year period of operation (1818-1827 inclusive), the passages being—according to the owners' declarations—"not reckoned from land to land, as is sometimes the case, but from one city to the other":

Average all ships eastbound, New York to Liverpool..24 days
Average all ships westbound, Liverpool to New York..38 days
Average fastest ship eastbound, CANADA, New York to Liverpool......................21 days
Average fastest ship westbound, CANADA, Liverpool to New York......................34 days
Average slowest ship eastbound, ORBIT, New York to Liverpool.........................29 days
Average slowest ship westbound, ORBIT, Liverpool to New York.........................46 days

During this period, the Black Baller *William Thompson* (495 tons) was credited with a westbound passage of 20 days, and the *Columbia* (492 tons) with a westward crossing of 21 days. Both ships were built by Sidney Wright, New York. Eastbound on the run from Sandy Hook to Liverpool, the *New York I* of the same line (built by Brown & Bell, New York) is said to have made a crossing in 1822 in 15 days 18 hours, although her best time westbound was 25 days.

Several vessels of the various lines that entered the packet trade prior to 1830 saw longer service than the vessels mentioned above, although their connection with the line terminated at an earlier date. The Black Ball Line had the *New York I* (516 tons) in the service for twelve years, the *Canada* (525 tons) and *Pacific II* each for ten years, and the *Britannia* for nine years. The Liverpool Blue Swallowtail Line operated the *Silas Richards* (454 tons) for ten years (1824-1834).

The following is a record of the number of packets that entered the service of the eight regular New York transatlantic lines operating on schedule prior to January 1, 1830, and the average length of their service in the trade. The seventy-one ships that entered the New York packet lines to Liverpool, London, and Havre during the twelve years 1818-1829 inclusive operated in such service an average of 5.8 years each. The average length of service in the packet trade steadily increased as the years advanced, the lines gained and profited by experience, the real packet type of Western Ocean liner was developed and perfected, and the ships became larger.

Line	Prior to 1820		1820-1824 Inclusive		1825-1829 Inclusive	
	No. of Packets Entering Line	Average Service in Yrs.	No. of Packets Entering Line	Average Service in Yrs.	No. of Packets Entering Line	Average Service in Yrs.
Black Ball, Liverpool	5	3.4	10	6.3	3	8.0
Red Star, Liverpool	—	—	5	3.4	4	5.5
Blue Swallowtail, Liverpool	—	—	5	5.4	3	6.3
Black X, London	—	—	3	4.7	2	4.0
Red Swallowtail, London	—	—	1	7.0	6	4.5
Havre Old Line	—	—	4	5.2	5	11.6
Havre Second Line	—	—	8	3.9	5	8.4
Havre Whitlock	—	—	1	5.0	1	9.0
Total	5	3.4	37	5.0	29	7.2

The First Phase of the New York Transatlantic Packet Era, 1818-1836 Inclusive

The first phase of the transatlantic packet era has been considered as the first twenty years of operation of the liners, i.e., 1818-1837 inclusive, but inasmuch as the first eight New York transatlantic packet lines inaugurated their services during the period 1818-1824 and no additional legitimate line came into existence until 1836 (with regular fleet sailings delayed until 1837), the first period can properly be considered as covering the years from the pioneer sailings of the Black Ball liners in January 1818 to the placing of the first fleet of four ships of the New York-Liverpool Dramatic Line in service in 1837. (One of this quartet, the *Shakespeare,* sailed alone in 1836.) During the years 1818-1835 inclusive, the New York transatlantic lines that qualify as legitimate packet lines were as follows:

Name of Line	Service between New York and	Sailings Began	Service Continued until	No. of Packets Used in Line Prior to 1837	No. of Packets in Service in 1836	Tonnage of Packet Ships: Total Used Prior to 1837	In Service in 1836	Average of Total	Average in 1836
						Tons	Tons	Tons	Tons
Black Ball	Liverpool	1818	1878	26	9 (8 regular)	13,936	5,748	536	639
Red Star	Liverpool	1822	1867	14	4	7,146	2,495	510	624
Blue Swallowtail	Liverpool	1822	1867	12	5 (4 regular)	6,277	3,309	523	662
Black X	London	1824	1868	12	5 (4 regular)	5,448	2,814	454	563
Red Swallowtail	London	1824	1881	13	6 (4 regular)	6,350	3,356	488	559
Havre Old Line (later Union Line)	Havre	1822	1863	16	10 (8 regular)	7,672	5,270	479	527
Havre Second Line	Havre	1823	1869	14	4	5,067	1,798	362	449
Havre Whitlock (later Union Line)	Havre	1823	1864	4	3	1,770	1,464	442	488

In 1836 the newest and largest packet ships of each of the well-established and regular New York transatlantic packet lines were as follows:

A. *Liverpool Black Ball, or Old, Line:*

1. OXFORD of 752 tons, built by Webb & Allen, New York, in 1836. Entered service in 1836 and continued until 1850, a period of fourteen years. Average time westward passage, 34 days; shortest, 21 days; longest, 47 days. Was a good, reliable packet and the first vessel built by Webb for the line.

2. ENGLAND of 729 tons, built by Smith & Dimon, New York, in 1834. Entered service in 1835 (after running a year in Red Star Line, for which she was built) and continued until December 1844, when she "went missing" on passage from Liverpool to New York. Was a fast sailer for her day, with an average of 32 days for the westward passage; best run, 21 days.

3. COLUMBUS of 663 tons, built in Newburyport in 1834. Ran in line steadily for eleven years (1834-1845), when she became a regular trader in transatlantic service. The vessel was rather slow, her average length of westward passage being 36 days (shortest, 28 days), but she made no unusually slow passages, her longest occupying only 50 days.

The EUROPE of 618 tons and the SOUTH AMERICA of 605 tons were built and entered the line in 1833 and 1832, respectively; the former was in the service for fourteen and the latter for eleven years (following which she operated as a whaler for seventeen years and was bought by the government and sunk in the "Stone Fleet" during the early days of the Civil War). The only other packets larger than 600 tons acquired by the Black Ball Line prior to 1837 were the BRITANNIA of 630 tons, built by Brown & Bell, New York, in 1826, and operated for nine years, following which she was sold for a transient; the CALEDONIA of 647 tons, built at the same yard from the same model (with 46 inches added amidships) in 1828 and sold following a collision in the English Channel after eight years' service; the NORTH AMERICA of 610 tons, also built by Brown & Bell, in 1831, which ran steadily in the line until beached and lost in a northeast gale and blinding snowstorm on the New Jersey shore near entrance to New York Harbor on January 14, 1843.

B. *Liverpool Red Star, or Second, Line:*

1. ST. ANDREW of 651 tons, built by C. Bergh & Co., New York, in 1834. Entered service in 1835 and continued until wrecked in the destructive "Liverpool Hurricane." She was driven ashore January 9, 1839, but whereas the ship became a total loss, everyone was rescued by "surfboats" or lifeboats sent out from the shore.

2. UNITED STATES of 650 tons, built by Smith & Dimon, New York, in 1833. Entered service when completed and ran in line for eleven years, but left Liverpool on November 26, 1844, with only about thirty persons aboard (there being only one passenger), and "went missing" during a period of terrific westerly winter gales, during which the Black Ball liner ENGLAND was also lost, as she likewise mysteriously disappeared.

3. VIRGINIAN of 616 tons, built by Smith & Dimon, New York, in 1832. Ran in line for fifteen years, averaging 34 days in her westward passages and making one run to New York in only 20 days.

4. SHEFFIELD of 578 tons, built by Smith & Dimon, New York, in 1831. Entered service when completed and continued twelve years. She ran ashore on the Sandy Hook Bar at night on November 14, 1843, when in charge of a pilot. The vessel sank, but was later raised and operated successfully as a whaler for fifteen years (1845-1860).

C. *Liverpool Blue Swallowtail, or Fourth, Line:*

1. PENNSYLVANIA of 808 tons, built by Webb & Allen, New York, in 1836. After less than three years' service as a packet, the ship was lost in the "Liverpool Hurricane" of January 9, 1839, which also destroyed the ST. ANDREW of the Red Star Line and a host of other vessels. Lloyd's estimated the marine losses from the storm at £500,000. The PENNSYLVANIA was not as fortunate as the ST. ANDREW, for whereas the latter packet suffered no loss of life, the PENNSYLVANIA hit violently on a sandbank some three miles from shore, and of forty persons aboard, only twenty-five were saved—this being "the heaviest toll of life in the New York ocean packet service between 1824 and 1847" (a British ship nearby suffered a loss of 53 persons).

2. INDEPENDENCE of 732 tons, built by S. Smith, New York, in 1834. Ran in the Liverpool Blue Swallowtail Line for thirteen years (1834-1847) and in the London Red Swallowtail Line for five years (1847-1852), a total of eighteen years, following which she continued in service for another ten years until wrecked in the China Sea October 31, 1862, bound from Manila to New York. The INDEPENDENCE was one of the fastest transatlantic packets of her day and had the best average speed record of any of the fifteen Blue Swallowtail packets put in service prior to 1846. Her average westbound passage was 32 days, which was beaten in the line only one day by the big McKay clipper packet NEW WORLD of 1,404 tons, built in 1846, and equaled by only the 1,327-ton CONSTITUTION, built by Brown & Bell, New York, also in 1846. The INDEPENDENCE had a better speed record than all the other vessels put in the line after her (i.e., during the period 1836-1854), all of which were much bigger and nine of which were of over a thousand tons, the AURORA being 1,639 tons and the ALBERT GALLATIN 1,435 tons.

3. ROSCOE of 622 tons, built by Smith & Dimon, New York, in 1832. She ran in the line steadily until 1843 (i.e., eleven years) and later became a Baltimore-Liverpool packet. The vessel was a good, comfortable sea boat, a reliable sailer, but rather slow for the transatlantic "shuttle." The average time of all her westward passages was 38 days; fastest, 24 days; slowest, 59 days.

4. GEORGE WASHINGTON of 609 tons, built at New Bedford in 1832, was about the size of the SOUTH AMERICA, built the same year in New York for the rival Black Ball Line. Charles Dickens returned to England from America in the summer of 1842 in the GEORGE WASHINGTON and was much more comfortable on the ten-year-old American sailing packet than he had been on his outward trip taken on the relatively new British Cunard steamer BRITANNIA. The GEORGE WASHINGTON ran in the Blue Swallowtail Line between New York and Liverpool steadily for thirteen years (1832-1845), when she was sold after sustaining damages in a gale off the Irish coast, as she had become too small for the service and was replaced with the HENRY CLAY of 1,207 tons—a vessel just twice her size. The GEORGE WASHINGTON was a good packet of medium speed, averaging 35 days on her westward passages; her fastest run was 23 days and her slowest 54 days. It is interesting to note that the big HENRY CLAY, which took her place in the line in 1845, is credited with no faster westward passage than the GEORGE WASHINGTON of half her size and built thirteen years earlier. The "CLAY'S" average time of passage was only one day less, i.e., 34 days as against 35 days.

D. *London Black X Line:*

1. WESTMINSTER of 631 tons, built by C. Bergh & Co., New York, in 1835. This ship was promptly put in the London run after leaving her builder's yard, and she sailed as a regular packet in the line for fifteen years. She was replaced in 1850 by the new OCEAN QUEEN of 1,182 tons, and the WESTMINSTER was transferred to the New Orleans packet service, operating regularly in the Louisiana & New York Line for seven years (1851-1857). The WESTMINSTER is credited with a fast 20-day westward passage of the Atlantic and an average length of passage of 37 days; her longest run took 56 days.

2. TORONTO of 631 tons was a sister ship of the WESTMINSTER and was constructed by the same builder, in the same yard, at the same time. The TORONTO ran in the Black X Line for thirteen years (1835-1848), when she was displaced by the new, larger, and faster DEVONSHIRE of 1,149 tons, built in 1848. A comparison of the record of the two sister ships TORONTO and WESTMINSTER in the transatlantic packet service, running in the same line between the same ports during the same years, is of interest. The TORONTO did not last as long as her sister in the run by two years, but the average length of her westward passages was one day less (36 days as against 37 days). Her fastest run was 23 days, which was three days longer than the best passage of the WESTMINSTER, but whereas the latter packet's slowest run occupied 56 days, the worst performance of the TORONTO was a trip of 50 days. The WESTMINSTER later sailed as a New Orleans packet until 1857, but the TORONTO, placed in the N. Y. & N. O.

Line in 1851, was wrecked off Cuba on January 2, 1851.

3. PHILADELPHIA of 542 tons, built by C. Bergh & Co., New York, in 1832. This packet operated for eleven years in the line (1832-1843), when she was replaced by the new, larger, but slower VICTORIA of 860 tons, built in 1843, which, notwithstanding her lack of speed, proved a popular packet and continued in the line for twenty-one years. She was "sold British" in 1864 during the Civil War. The PHILADELPHIA'S fastest westward passage was the same as that of the VICTORIA, i.e., 24 days; nevertheless, the PHILADELPHIA beat the new and bigger packet, which took her place in the line, in the average length of all westward passages by five days (33 days as against 38 days). The PHILADELPHIA'S longest passage was of only 50 days, whereas on one occasion the VICTORIA took 84 days in traversing the same course.

4. MONTREAL of 542 tons was a sister ship of the PHILADELPHIA, but was constructed by the same builders in 1833, a year after they had launched the first of the pair. The MONTREAL made a two-day faster westward passage than her sister (22 days against 24 days), and her longest trip was only 47 days as against 50 days for her sister (both records for slow passages during a period of eleven years being noticeably good); yet it is surprising that the MONTREAL is credited with an average length of passage on the westward, or homeward, run of 38 days as against only 33 days for her sister vessel. The MONTREAL, after six years as a regular trader and transient, was sold as a whaler. She operated out of New Bedford hunting whale for twelve years (1850-1862), following which she was sold at New York during the Civil War.

The SAMUEL ROBERTSON of 421 tons, built in 1825, ran in the London Black X Line for one year (1833-1834), but she was far too small for the line; from 1835 to 1859 (twenty-four years), the "ROBERTSON" was a whaler, following which she was a transient freighter for four years. The packet ships built for the London Black X Line prior to the PHILADELPHIA and MONTREAL were all under 500 tons, the largest and best being the PRESIDENT of 468 tons and the SOVEREIGN of 462 tons (another pair of sisters), built by C. Bergh & Co., New York, in 1831 and 1830, respectively. The PRESIDENT ran in the line for ten years (1831-1841), but she struck on Goodwin Sands in February 1841 and was condemned at London. The SOVEREIGN was even less fortunate, for after five years' service in the line (1830-1835), she ran ashore and was lost on Squam Beach, New Jersey, on February 17, 1835. A passenger named Labatt lost his life because of love of gold, as he loaded his pockets with the precious metal before taking to the water to swim ashore. The PRESIDENT was the faster of these two sister packets, as she made one westward passage in the remarkable time of only 19 days, and the average length of all her homeward runs was 36 days; corresponding figures for the SOVEREIGN are reported as 22 and 39 days, respectively.

E. *London Red Swallowtail Line:*

1. QUEBEC of 653 tons, built by C. Bergh & Co., New York, in 1836. Operated in the transatlantic packet line for eleven years (1836-1847), following which she was transferred to the New Orleans packet service, running in the New York & Louisiana Line for six years (1847-1853). After leaving the packet service, she became a freighting transient, or sailing "tramp." The QUEBEC, which later won a reputation for speed as a New Orleans packet, made no fast westward passage during the eleven years that she operated as a transatlantic packet. Her fastest trip required 27 days, although her average of 35 days for all westward passages and 46 days as her longest trip are good sailing performances.

2. GLADIATOR of 649 tons was virtually a sister of the QUEBEC and was constructed one year earlier (1835) by the same builders. After fourteen years in the London packet service (1836-1850), during which she proved herself to be a comfortable and good sea boat, but rather slow for a transatlantic packet, she was sold to New Bedford parties to become a whaler and was the largest and one of the last ocean packets to be transferred to that trade. The GLADIATOR operated as a whaler for four years (1850-1854), when she was withdrawn from that service, for which obviously she was "too big." The GLADIATOR was a slower vessel than her sister packet. Whereas each made a westward passage in 27 days, the average length of all westward runs for the GLADIATOR was 38 days as against 35 days for the QUEBEC, and the GLADIATOR'S slowest passage of 62 days was sixteen days longer than her sister vessel's poorest run.

3. ST. JAMES of 641 tons was built by Webb & Allen, New York, in 1835 and sailed for thirteen years (1835-1848) in the London Red Swallowtail packet service, where she proved herself to be an excellent, reliable, and comfortable vessel and a good carrier of average speed. The ST. JAMES made no fast transatlantic crossings, her best westward run requiring 26 days, but she also made no poor passages. Her longest westward passage occupied only 46 days, and the average of all her homeward runs of 36 days, whereas one day longer than that of the QUEBEC, was two days shorter than the average of the GLADIATOR.

In 1830-1831, the London Red Swallowtail Line built two packets of "about 485 tons" and placed the orders with different New York builders. The ONTARIO I of 489 tons was constructed by Webb & Allen and ran in the transatlantic packet line thirteen years (1830-1843), following which she operated as a whaler out of Sag Harbor and New Bedford for twenty-three years (1843-1866) and was abandoned after a collision in the North Pacific when her crew refused duty. The SAMSON of 484 tons was built by C. Bergh & Co. and operated in the transatlantic line for ten years (1831-1841). In May 1841, her career came to an end when she struck a rock off Cape Sable and was badly damaged. Vigorous work at the pumps kept the packet afloat until she could be beached on the Nova Scotia coast (White Head); the hull was sold as she lay for $1,088, and "the sails and cordage fetched about two thousand dollars."

The CANADA of 525 tons, built by Brown & Bell, New York, in 1823 for the Black Ball Line, was sold after ten years of excellent service (1823-1833) in that line to the London Red Swallowtail Line, where she operated for two years (1833-1835), later becoming a regular trader, a transient, and from 1843 to 1856 (a period of thirteen years) a New Bedford whaler except that during the California gold-finding boom, she was operated in that trade during 1849-1851. Later, the loss of the CANADA on the coast of Brazil was attributed to the "intemperance of Brazilian officials." The CANADA not only proved to be an able vessel and a good sailer but also was the largest and best appointed packet ship of her day. When put in the transatlantic service in 1823, she was proclaimed "magnificent with luxurious passenger quarters," and English shipmasters who inspected the ship declared that there was "nothing on the Thames, not excepting the royal yacht, that excelled her."

F. *Havre Old Line:*

1. BURGUNDY of 762 tons, built by Webb & Allen, New York, in 1836, was the first of a fleet of fifteen transatlantic packets built by the Webbs (six by Webb & Allen and nine by W. H. Webb) for the Havre Old, and later Union, Line during the fifteen-year period 1836-1851—an average of one packet per annum for the New York-Havre packet lines. The BURGUNDY entered the service in 1836 and operated with success for twelve years (1836-1848). She was wrecked on the Goodwin Sands November 14, 1848. The packet was fast; she is credited with a 21-day passage and an average of 34 days for all her passages westbound and made no very long trips, as her slowest crossing occupied only 47 days.

2. SYLVIE de GRASSE of 641 tons was built by Burgess at Hartford, Conn., in 1833, and she ran in the line for fourteen years (1834-1848), following which she was sold for a Gold Rush voyage to California and was wrecked at the mouth of the Columbia River in September 1849, when loaded with "nearly half a million feet of lumber." The "SYLVIE" was a good sailer and made a fast 20-day passage from Havre to New York. The average of all her westbound passages was 35 days. She was beaten only by the CHARLEMAGNE of 442 tons (built in New York in 1828) of all the fifteen vessels sailing in the line prior to the appearance of the BURGUNDY in 1836. (The CHARLEMAGNE, operating in the Havre Old Line for six years, 1832-1838, was fast, but previously, running in the Second Line [or Boyd Line] for four years, 1828-1832, she had made a very poor record, the average length of her passages being 41 days as against only 34 days after she changed ownership, but continued to operate between the same ports.)

3. FRANCIS DEPAU of 595 tons, built by Brown & Bell, New York, in 1833, operated in the service for only three years (1833-1836). This vessel had the principal cabin on deck, and most of the packets that succeeded her were built with what were termed "poop cabins." She proved to be slow, and after an average of 41 days, with a best crossing of 29 days and a longest of 79 days, on her westward passages, she suffered an accident at Havre, where she was condemned and sold to be repaired and used as a sailing "tramp."

4. NORMANDIE of 500 tons, built by Smith at Hartford, Conn., in 1833, was the only vessel besides the SYLVIE de GRASSE and FRANCIS DEPAU built for the line following the construction of the RHONE of 471 tons by Bergh, New York, in 1831 and prior to the building of the BURGUNDY by Webb & Allen in 1836. The career of the NORMANDIE as a packet was brief. She ran in the line for only three years (1834-1837), when she was sold to become a transient, and as such she "went missing" in December 1844 when making a passage from Liverpool to New York.

G. *Havre Second Line:*

1. UTICA of 525 tons, built by C. Bergh & Co., New York, in 1833. The vessel promptly entered the packet service and operated in the line for fifteen years (1833-1848). Like most of the Havre Second Line vessels of her time, the UTICA was slow.

2. ERIE of 451 tons, built by C. Bergh & Co., New York, in 1829. Entered the Havre packet service in 1829 and ran in the line eleven years, until 1840. The only claim of the ERIE to fame was the slowness of her passages. She is the only transatlantic packet to have made three westward passages of over 70 days, and her record longest crossing occupied 82 days. A semi-official English chronicle of marine movements and casualties, with a reputation for conservatism and accuracy of statement, reported that the ERIE, bound west from Havre, had been totally lost with all on board when leaving the English Channel in late December 1837. Many Americans and French of the marine fraternity were skeptical of the accuracy of the English news, but when over eleven weeks passed and nothing had been heard of the packet, fears were openly expressed for the safety of the vessel and those aboard her.

When the dilatory ship finally did appear at New York, Captain Funk had as great a welcoming crowd of news boats and reporters to greet him as if he had just established a record for speed rather than slowness. He was eagerly asked for news of the terrific gales encountered, but Funk pointed to his spars and sails, which were in excellent condition, and declared that instead of having too much wind, he had had too little and had merely been delayed by persistent, annoying calms.

The ERIE was unquestionably a very slow sailer, but it is doubtful as to whether her sailing record entitles her to the dubious honor of being as generally declared "the slowest of all transatlantic packets." Records of the Havre sailings report the ERIE as making the slow 82-day crossing, the longest transatlantic run from that port; but London sailings from Portsmouth to New York show that the HANNIBAL of 440 tons of the Red Swallowtail Line (December 3, 1833-February 24, 1834) made an 83-day crossing, the SWITZERLAND of 567 tons of the same line in 1843 made an 82-day passage, and Albion reports that the big packet LONDON of 1,145 tons, built in 1848 for the London Red Swallowtail Line, made one crossing (Portsmouth to London) that occupied 85 days.

The average length of the westward passages of the ERIE is stated as 42 days for eleven years (Albion also says 42.8 days for eight years), but the FRANCE of 411 tons, built in 1827, is given the same average of 42 days for ten years (1827-1837), and it is said that her sailing for years at the start of her packet service was "very slow"; the ERIE'S best crossing was made in 24 days, whereas the best passage of the FRANCE occupied 31 days. The EDWARD QUESNEL (388 tons), also of the Havre Second Line, is credited with an average of 42 days for all her westward passages, and in much later days the big Havre-New York packet WILLIAM NELSON (1,039 tons) of the Union Line, which was in the service 1856-1863, showed an average length of crossing of 42 days.

The ERIE was engaged in the whaling trade for fifteen years (1847-1862), sailing out of Fairhaven and New Bedford, Mass., and in 1862 she was dismasted and abandoned off Cape Horn. The other slow Havre Second Line packets also turned to whaling. The FRANCE (1837-1846) operated out of Sag Harbor, N. Y.; the EDWARD QUESNEL (1832-1839) hailed from Fall River, Mass. (she was wrecked on Long Island with a full cargo of oil in 1839); the CHARLES CARROLL of 411 tons (built by Bergh, New York, in 1828—one year before the ERIE), after twelve years in the Havre packet service (1828-1840), in which she averaged 41 days on her westward passages, was a New London whaler from 1844 to 1862, other than for a period taken out in 1849 to participate in the California Gold Rush. The DESDEMONA of 294 tons, built in 1823, ran in the Havre Second Line for two years (1824-1826), and her fastest westbound passage occupied 35 days (as against 24 days for the ERIE). The DESDEMONA was operated out of New York as a whaler in 1833 and as late as 1895, when seventy-two years old, was still registered at New Bedford.

H. *Havre Whitlock Line:*

Prior to 1838 and the merger of the Havre Old Line with the Whitlock to form the Union Line, the Whitlock Line, although organized in 1823, ran only one ship in the service until 1831 and three from 1831 to 1838. The largest packet ship in this service prior to 1838, when the Webb-built DUCHESSE d'ORLEANS of 798 tons appeared in the Union Line, was the POLAND of 546 tons, built in 1832, which was in the run for seven years (1833-1840), until burned at sea on May 11, 1840. The ALBANY of 468 tons, built by Bergh, of New York, in 1831, holds the record for length of service for Whitlock Line packets. Although rather slow, she remained in the line for sixteen years (1831-1847), following which she was operated as a transient. The two earlier ships of the line, FORMOSA and CADMUS, ended their careers as whalers, and both were wrecked in the Pacific while engaged in this trade.

The following is a list of the regular and qualified New York transatlantic packet lines, with a record of the years that each was in service:

Name of Line	Sailing to and from	Packet Sailings: Commenced	Ended	Years Operated	Comments
Black Ball	Liverpool	1818	1878	60	Doubled service and changed from monthly to two sailings per month in 1822.
Red Star	Liverpool	1822	1867	45	Known as Second Line, New York-Liverpool.
Blue Swallowtail	Liverpool	1822	1867	45	Known as Fourth Line, New York-Liverpool. (Black Ball Line mid-month sailings were termed Third Line.)

Continued on next page.

Name of Line	Sailing to and from	Packet Sailings Commenced	Ended	Years Operated	Comments
Black X	London	1824	1869	45	Worked closely in co-operation with the Red Swallowtail Line.
Red Swallowtail	London	1824	1881	57	Associated with the Blue Swallowtail New York-Liverpool line.
Havre Old Line	Havre	1822	1863	41	Joined with Whitlock Line in 1838 and formed Havre Union Line.
Havre Second Line	Havre	1823	1870	47	Originally under management of John J. Boyd and known as Boyd Line.
Havre Whitlock Line	Havre	1823	1864	41	Originally co-operated with Boyd Line. Later joined with Old Line to form Havre Union Line.
Dramatic	Liverpool	1836	1868	32	Known as the Fifth Line, New York-Liverpool. Sold by Edw. K. Collins in Sept. 1848 to Spofford, Tileston & Co.
New Line	Liverpool	1843	1849	6	Known as the Sixth Line, New York-Liverpool. Taken over by Blue Swallowtail Line in 1849.

The original owners of the pioneer Black Ball packet line were Isaac Wright & Son, Francis and Jeremiah Thompson, and Benjamin Marshall. In 1828, Jeremiah Thompson, "the heaviest cotton trader in the world and the leading [packet] shipowner in the United States," came out of a frenzied cotton boom bankrupt; in 1832, Francis Thompson died, followed a month later by Isaac Wright. Benjamin Marshall, being absorbed in his upstate cotton factories and having no time to devote to ships, expressed a desire to sell out, released his shares to his brother Joseph, and William Wright, son of Isaac, bore the burden of managing and financing the line. This proved to be too big a job for William Wright's resources, so early in 1834 the Black Ball Line was sold outright—ships, shore facilities, house flag, etc.—to Goodhue & Company (assisted by a loan from Baring Bros., of London), with interests taken by Capt. Charles H. Marshall and Capt. Nathan Cobb. Baring Bros. took over the Liverpool agency of the line, Goodhue & Company handled the business and accounting affairs in New York, and Captain Marshall (who had left the sea in the fall of 1833 for a shore job) supervised the maintenance and operation of the ships. For a while, Goodhue & Company (with Perit and Durand as partners) and C. H. Marshall were the apparent owners of record, but eventually Goodhue & Company withdrew, and the Black Ball Line became managed by C. H. Marshall alone and later by C. H. Marshall & Company.

Capt. Nathan Cobb continued for years as a part owner of Black Ball packet ships, but in 1835 he conceived the idea of a steam transatlantic packet line, sold some of his sailing packet ship interests to help finance his steamship project, commenced construction in 1836 of a steamship named the *Despatch,* and was hit so hard by the panic of 1837, which cut off his promised and needed financial support, that he had to abandon the venture a year before the *Sirius* and *Great Western* made their pioneer voyages under steam from England.

Capt. Charles H. Marshall managed the Black Ball Line from 1836 to the time of his death in 1865, and his firm, C. H. Marshall & Company, continued to control the line until it discontinued service in 1878. The Marshalls really dominated the famous pioneer packet line from 1834 to its end in 1878—a period of forty-four years. Fourteen packet ships were built for the line during the years 1836-1855, all by Webb, of New York (the first four by Webb & Allen and the others by W. H. Webb). In the sixties, four large ships of a regular trader and post-packet type were added to the line, two built by Webb, of New York, and two at Waldoboro, Maine; but the last Black Ball liner, the *Charles H. Marshall,* was built for the line in 1869 by Webb, who during a period of some forty-three years (1835-1878) constructed all the Black Ball ships except the two Maine-built ships *William F. Storer* and *Hamilton Fish,* which were launched in 1856 and purchased by Captain Marshall for the Black Ball service in 1861, when they were five years old.

In 1835 the New York-Liverpool Red Star Line was sold outright to another group of owners just as the Black Ball Line had been the year before, and Robert Kermit, son of a New York captain, with the financial backing of two wealthy New York Yankees, Stephen Whitney and Nathaniel Prime, became the manager and continued as such for a period of twenty years and until his death. During this period, the old Red Star (or Second Line) was popularly known as the Kermit Line, and for years Robert Kermit operated it under his own name.

The Swallowtail lines to Liverpool and London were started by the Yankee firm of Fish & Grinnell, but in 1829 both Preserved Fish and Joseph Grinnell, the founders, withdrew and the New Englanders Moses Hicks Grinnell, Henry Grinnell, and Robert Bowne Minturn (Henry Grinnell's brother-in-law) took over the business. In 1833 the company name was changed to Grinnell, Minturn & Company, and it became the outstanding firm of sailing packet operators in the country, with the trio of men who took over the control in 1829 guiding its affairs until after the Civil War.

The Griswolds managed the Black X Line to London from the start and operated in close and friendly conjunction with the Grinnells and Minturn of the Red Swallowtail London line. John Griswold, the original manager of the Black X Line, and his brother Charles C., associated with him, were cousins of Nathaniel L. and George Griswold of the prominent New York commercial house of N. L. & G. Griswold. John Griswold operated the Black X Line until 1851, when Alexander Wiley and Capt. Elisha E. Morgan entered the picture, and in its later days the line was intimately associated with Captain Morgan's name.

Philadelphia in the Transatlantic Packet Service—the Cope Line and the Spackman "New Line"

Other American ports attempted to compete with New York in the transatlantic service, but the efforts of Boston and Philadelphia are the only ones worth recording. The announcement of the organization and sailings of the original transatlantic sailing packet line, which became known as the Black Ball Line, between New York and Liverpool was made in the public prints of October 27, 1817, with initial sailings of the service advertised to commence from both sides on specified dates of the first week of January 1818. Some four years later, both Boston and Philadelphia followed New York with the organization of a "competitive sailing packet line to Liverpool," but by the time that the Boston and Philadelphia lines were really operating, New York had three transatlantic packet lines running to Liverpool (Black Ball, Red Star, and Blue Swallowtail) and also had inaugurated transatlantic packet lines to Havre, France, and coastal sailing packet lines to Charleston, S. C., and to New Orleans, La.

Thomas P. Cope, a Philadelphia shipping merchant who had been engaged in the Liverpool trade since 1807, established the house of Thomas P. Cope & Son in 1821 and, the following year, organized a four-ship sailing packet line with monthly service to Liverpool. Cope's line operated on this basis with moderate success until the Civil War. Albion says, "In 1835 there were only twelve arrivals of American ships at Liverpool from Philadelphia, and those were the Cope packets, which were apparently enough for all the direct trade. In 1839 it was said of the Cope Line that it seemed to 'drag on a rather languid existence.'" At this time, there were twenty-four packet ships engaged in the transatlantic New York-Liverpool "shuttle" service, with weekly sailings from each side throughout the year. The pioneer ship of the Cope "Liverpool packet line" was the *Lancaster* of 290 tons, built in 1807 (Captain Dixey), and her running mate was the larger *Tuscarora* of 349 tons, built in 1810 (Capt. James Serrill). Capt. Arthur H. Clark says that among the Cope Philadelphia packets were "some of the finest ships on the Atlantic," but it is evident that this line achieved no measure of importance and attracted practically no attention outside of Philadelphia until 1833, when the most noteworthy ship of the line, the *Susquehanna* of 583 tons, entered the service.

The *Susquehanna* sailed on her maiden voyage April 30, 1833, with Captain Dixey in command. She was built in 1832-1833 and was 129 ft. long, 32.6 ft. beam, and 20 ft. draft. Henry and Alfred Cope (successors to Thomas P. Cope & Son) were the owners of record. The model of the *Susquehanna* was described by Lloyd's (with which she was rated as late at 1869, i.e., when thirty-six years old) as "sharp," and some Philadelphia historians have even described her as an "early clipper." Apparently, she was a strong, rather fine-lined and modeled ship, with the usual packet rig found by experience to be well adapted to the Western Ocean trade. It is said that the vessel "made many runs of 20 days and less from the Capes to Liverpool" when favored with strong and steady westerly winds. The *Susquehanna* was a sizable transatlantic sailing packet for her period, and her 583-ton registered measurement can be compared with the 618 tons of the Black Baller *Europe* and the 650 tons of the Red Star's *United States,* both of which New York ships were put in commission the same year as the Philadelphia packet, and with the 732 tons of the fast and record-making Blue Swallowtail New York-Liverpool liner *Independence,* which was put in service the following year (1834).

The *Montezuma* was popular as a running mate to the *Susquehanna,* and two other Philadelphia sailing packets of the period that were favorably known for years were the *Algonquin* and the *Monongahela* (509 tons). Thomas P. Cope died in March 1834, and although the name of the firm operating the packet line became H. & A. Cope & Company, the son Alfred (who died in 1875) really succeeded his father in the shipping business. The later important ships of the Cope Line were the *Saranac* (854 tons), built in 1844, the *Tonawanda* (1,503 tons) and *Wyoming* (912 tons), built in 1845, the *Thomas P. Cope* (800 tons), and the *Tuscarora II* (1,449 tons), built in 1848.

About a year after the Liverpool packet line founded by Thomas P. Cope & Son commenced operations, another line that aspired to be a Philadelphia-Liverpool packet line was established by Samuel Spackman, No. 21 Church Alley, Philadelphia. This line, which was called the "New Line," is said to have operated with "more vessels than the Copes had during the early part of their history." For a short time, the Spackman ships sailed with a fair degree of regularity between Philadelphia and Liverpool, but the service did not pay, and before long the route was changed. The ships sailed from Philadelphia to Savannah, Ga., and thence to Liverpool and usually returned to Philadelphia direct, but occasionally brought a cargo to some other American Atlantic Coast port. At the beginning of 1825, the Philadelphia "New Line" owned and operated the following ships: *Julius Caesar* of 346 tons (Capt. Francis M. French), *Globe* of 500 tons (Capt. James Hamilton), *Colossus* of 399 tons (Capt. Robert Marshall), *Courier* of 388 tons (Capt. George H. Wallace), and *Delaware* of 412 tons (Capt. John Hamilton). The sailing day of this fleet from Philadelphia, as advertised in the newspapers, was on the twentieth day of each month. It would seem that the ship *Minerva* of 380 tons (Capt. John C. Mayol) was added to the line about the middle of 1825, and a new ship, named *Bolivar* (Capt. Josiah L. Wilson), took the place of the *Globe* during the latter part of that year.

The Spackman shipping firm, of Philadelphia, was undoubtedly one of the most important pioneers of the transatlantic triangular cotton-port service, which was very extensively used in later years by American regular traders and by Boston and Philadelphia so-called "lines" that were unable to compete with the New York packet lines in direct transatlantic service. It is said that, around mid-century, "a good many of Cope's ships loaded cotton from New Orleans" and that "the *John H. Jervis* of 1,790 tons and *Chimera* of 1,300 tons were both built for the Philadelphia-New Orleans transatlantic triangle trade in 1852."

Boston Attempts to Compete with the Enterprising New Yorkers in the Western Ocean Packet Trade

The only energetic competition with the New York transatlantic packet lines came from Boston and was as intermittent and variable as it was at times earnest and often bitter. Much has been written about Boston as a great sailing packet port, but it was not until five years following the announcement of the founding of the New York-Liverpool Black Ball Line that William Appleton and some fifty leading Boston merchants organized the Boston and Liverpool Packet Company, which the following year (1823) inaugurated the service of the "Little Jewels"—a transatlantic packet line operating four fast little ships named for jewels. This quartet of sailing packets, with which Boston was determined to compete with New York and "to take all the New England, a good part of the western, and some of the southern trade" from that port, was as follows:

Name of Vessel	Tonnage	Builder	Name of Vessel	Tonnage	Builder
TOPAZ	363	Thatcher Magoun, Medford, Mass.	AMETHYST	359	Boston, Mass.
EMERALD	359	John Wade, Boston, Mass.	SAPPHIRE	366	E. & H. Rogers, Medford, Mass.

These four packets, which averaged 362 tons register, were each about 110 ft. long and 27 ft. beam. Their tonnage can be compared with that of the New York transatlantic packets put in the service during the same period (1822-1825):

Line	Number of Vessels	Average Tonnage	Largest Ship	Line	Number of Vessels	Average Tonnage	Largest Ship
Black Ball, Liverpool	10	507	PACIFIC II 586 tons	Red Swallow-tail, London	2	394	YORK 433 tons
Blue Swallow-tail, Liverpool	5	397	SILAS RICHARDS 454 tons	Old Line, Havre	4	337	LEWIS 412 tons
Red Star, Liverpool	5	357	MANHATTAN 390 tons	Second Line, Havre	9	314	EDWARD QUESNEL 388 tons
Black X, London	3	345	HUDSON 368 tons	Whitlock, Havre	1	306	CADMUS 306 tons

The average tonnage of the twenty sailing packets put into service on the Liverpool lines during the period was 442 tons, or 22 per cent greater than the average tonnage of the

Boston "Jewel" packets, but the average tonnage of all of the thirty-nine New York transatlantic sailing packets enumerated above, half of which were running to Portsmouth (London), England, and to Havre, France, was 388, or only 7 per cent in excess of the average tonnage of the "Little Jewels" of Boston.

The *Emerald* was loftily rigged, crossing skysail yards, and gained a reputation for speed primarily because of the sail-carrying and driving of her commander, Capt. Philip Fox, of Cohasset. In early 1824, the *Emerald* was credited with a remarkable passage of 17 days from Liverpool to Boston, which Lubbock, the English marine historian, describes as follows:

> At 3 P.M. on 20th February, she left the Mersey, picked up an easterly gale and carried it all the way to the Boston Light, where she hove to for a pilot at 3 P.M. on 8th March. Capt. Fox had kept her travelling with all the sail she would bear, and her lee rail was under water most of the time. When she anchored off Fort Independence three hours later, her owners thought she had put back in trouble, but their concern was changed into jubilance when Capt. Fox calmly handed them the Liverpool papers of 20th February. This wonderful passage was undoubtedly due more to the hard driving of Capt. Fox and the lucky easterly slant than to any unusual speed in the EMERALD. Fox was a noted carrier of sail, and it was not the first time that he had forced a ship beyond her designed speed.

This 17-day crossing of the Atlantic from Liverpool to Boston was equivalent to an 18-day passage over the longer distance between the British port and New York.

Later, the *Topaz* was in the news for an entirely different reason. After leaving the transatlantic packet service, she became a general trader and transient and, in 1828, made a voyage to Calcutta under Captain Brewster. On her homeward passage in 1829, the *Topaz,* totally unarmed and unprepared, was captured, when close to St. Helena, by the pirate Capt. Mansel Alcantra in the Spanish brig *Macrinarian,* and the whole ship's company was butchered. News of this disaster reached America, since the pirate Alcantra, at about the same time, captured also the *Caudace* of Marblehead, whose supercargo, effectively disguised as a devout priest, was permitted to escape when the other officers and members of the crew were put to death.

The Boston management of the "Jewel Line" evidently lacked the practical knowledge and experience of the managements of the New York packet lines, for it attempted to operate a "line" with a separate agent for each ship in Liverpool—a procedure that weakened the line and contributed to the failure of the service. It is said that it was the "lack of adequate return cargoes" that soon led to the failure of the Boston and Liverpool Packet Company (or Appleton's "Jewel Line"). The company was reorganized, or rather its successor was established, in 1827, when several prominent Boston merchants, including Henry Hall, Joshua Blake, and David Henshaw, became interested in the enterprise and inaugurated Boston's second line of transatlantic packets. This new Boston transatlantic packet line, like its predecessor (the Boston and Liverpool Packet Company, popularly known as the Boston "Jewel Line"), failed to obtain a charter from the Massachusetts legislature, and the service met the same fate as its predecessor and discontinued operations in 1833 "after struggling for several years to meet expenses."

Bostonians charged that the New York packet owners "tried to undermine their competition by an early practice of the 'rebate' system" and claimed that the New York owners "charged $10 a ton for fine freight from Europe, but on shipments for Boston merchants, they reduced the price to $8 to lure the business in their direction." Evidently, New York shippers did equalize freight and seek to make the cost of freight between Boston and Liverpool no more than that between New York and Liverpool. (With identical freight charges per ton in effect for transatlantic transport, port to port, a Boston packet line should have been able to enjoy a monopoly of the business of Boston and environs, for Boston is nearer to Europe than is New York, and a Boston merchant shipping via New York would have to pay freight from New York to Boston and wait longer for his goods, as transshipping takes time.)

It seems strange that "lack of adequate return cargoes" could kill off the Boston competition of the New York packets. The trouble appears to have been in getting good, paying freights for the vessels running east, or outbound, for toward the end of the so-called "packet" service, the Boston owners, in an attempt to keep operating, frequently sent their ships from Boston to Charleston, S. C., to pick up cargo (principally cotton), and this most assuredly would not have been done if Boston could have furnished the ships with paying loads. This practice of sailing for Liverpool via Charleston naturally ruined the line's passenger and express freight business from Boston and New England, and when the regularity of the service was destroyed, the line was no longer a packet line and soon passed out of existence. Lubbock says, "The trouble in those early days was that Boston could not provide anything more valuable for export than what were called 'notions,' such as rubber shoes, cow horns, and corn husks, and the outward packets were forced to go to Charleston, South Carolina, for a cargo of cotton." Notwithstanding the claims of Boston merchants and their denunciations of the tactics of the New York packet lines (that they were "by unscrupulous discrimination" determined "to drive any Boston packet line from the seas"), Lubbock adds, "This was the real cause why neither of the early Boston lines was a success."

In the summer of 1825 and shortly before the Erie Canal was completed, an able Boston analyst and economist had the following to say of the situation wherein New York had unquestionably outgeneraled Boston and, because of this fact and a geographical location which was to give New York increased advantages as the West and the South developed, was clearly occupying a dominant position as America's greatest port and commercial metropolis:

It is asked whether New York consumes so many more goods than Massachusetts as to enable her to support so many packets, I answer no; it is owing to her merchants having more enterprise than ours.

We rest satisfied with supplying New Orleans, Charleston, and other western and southern places with the natural products of New England, while the New Yorkers import for them all their European and India goods; and setting up their young men, forming establishments, and daily increasing their business in all those places. Look at the New Orleans newspapers and it will be seen what quantities of dry goods they are constantly receiving from New York; it is not uncommon for one house to receive fifty packages by a single packet. New Orleans is increasing every year with the greatest rapidity; and New York is grasping at the whole trade.

Their packets are excellent, ably commanded, always towed up the river by a steamboat, and complete the voyage in nine and sometimes in six weeks. Our packets are three months in performing the same. . . . Besides the cotton received for the goods sold to the southern and western states, the New York merchants are constantly receiving large quantities for the express purpose of shipping to Europe. Thus they not only load their regular packets; and others of their own ships; but have lately given full freights to our northern vessels, besides employing a great many to bring the cotton from New Orleans and Mobile. Our Liverpool packets find little or no freight here and, therefore, go to Charleston for freight.

Every day there is one or more of their packets arriving from Charleston and Savannah. I am told that the number of passengers from those places to and from New York amounts yearly to nearly 10,000. The average passages are only six days; to our port, I presume that the yearly average is fifteen days.

Supposing that the merchants make nothing by all these shipments, yet the community are great gainers, for the number of people employed in building and manning their ships, loading and unloading them, the extra number of warehouses required, clerks and apprentices, and all these persons and their families to be clothed and fed.

The Liverpool Packet Company, operating Boston's second line of transatlantic packets, had as its first ship the *Dover* of 425 tons (Capt. Ira Bursley), built by John M. Robertson at Charlestown, Mass. In advertising the service and asking a fare to Liverpool of "140 dollars, including bedding and wine," special attention was directed to the passenger accommodations of the *Dover*, which had "a main cabin 45 feet long, with eleven 6 feet staterooms opening into it," the "head room" of which was "7 feet." There was a "bathing room" (no tub or shower but space "to sluice with a bucket of sea water") and a library, but nothing is said of a smoking room. The middle space between the staterooms was, of course, the lounge and dining room combined. Another early packet used by the line was the *New England*.

Thatcher Magoun, of Medford, Mass., built for this service the following sailing packet ships, which, it was said by contemporaries, were "able, seaworthy ships; not fast, but good carriers and reliable sailers":

Year Built	Name of Vessel	Tonnage	Year Built	Name of Vessel	Tonnage	Year Built	Name of Vessel	Tonnage
1828	BOSTON I	428	1832	BOSTON II	426	1832	LOWELL	430
1828	LIVERPOOL	429	1832	TRENTON	441	1833	PLYMOUTH	440

The average tonnage of these six ships was 432 tons, which can be compared with the average tonnage of the following ships put in service by the eight New York transatlantic lines during the same period of from 1828 to 1833:

Line	Number of Vessels	Average Tonnage	Largest Ship	Line	Number of Vessels	Average Tonnage	Largest Ship
Black Ball, Liverpool	5	606	CALEDONIA 647 tons	Red Swallow-tail, London	5	469	CANADA 525 tons
Red Star, Liverpool	4	598	UNITED STATES 650 tons	Old Line, Havre	7	505	FRANCIS DEPAU 595 tons
Blue Swallow-tail, Liverpool	3	594	ROSCOE 622 tons	Second Line, Havre	4	457	UTICA 525 tons
Black X, London	5	487	PHILADELPHIA and MONTREAL each 542 tons	Whitlock, Havre	3	488	POLAND 546 tons

The average tonnage of the twelve sailing packets put into service on the New York-Liverpool lines during the six-year period 1828-1833 inclusive was 600 tons, or 39 per cent more than the average tonnage of the six Magoun-built Boston packets referred to above. The average tonnage of the thirty-six New York transatlantic packets enumerated above—ten of which were in the Portsmouth (London) and fourteen of which were in the Havre service—was 523 tons, or 21 per cent in excess of that of the Boston-Liverpool sailing packets.

It is said that the Liverpool Packet Company at one time operated eight ships in the service between Boston and Liverpool, but after four or five years of "indifferent and unprofitable" business, it was compelled to abandon the enterprise. Albion, referring to the attempts of Boston, Philadelphia, and other and far less important ports and ventures to establish transatlantic sailing packet lines, has written:

> This host of imitators, the steady increase in the number and size of the ships, and the extraordinary vitality of the packet lines, even after the competition of steam, all demonstrated the soundness of the vision and initiative of Jeremiah Thompson and his colleagues when they organized the Black Ball Line in 1817. . . . The service that they provided had been successful in keeping the transatlantic trade flowing toward Sandy Hook instead of to rival ports, and the value of the line principle was so adequately demonstrated that it has lived on, long after the old sailing packets went to their final resting places.

In this connection, it is well to record that in 1839, or about twenty-two years after the sailing packet line idea was developed and presented to the public, it was said of the results attained in the practical operation or exploitation of the plan, "In a national point of view, the Thompsons, the Wrights, and Marshall . . . are, with their packet ships, scarcely less of public benefactors than Fulton and Whitney were with their steamboats and cotton gins." These originators of the Black Ball Line, in addition to presenting a principle governing transportation that proved of great advantage to the world, really did more to make New York the leading port and trading metropolis of the United States than did the much-publicized Erie Canal, for the packet ship idea was adapted to coastwise as well as transatlantic shipping, and New York merchants were longheaded enough to develop the idea and capitalize on its possibilities to the full.

The Cunard Line of subsidized British wooden side-wheel steamers commenced running from Liverpool to Boston, via Halifax, Nova Scotia, in 1840, and three years after this (1843), Enoch Train, a prominent merchant of Boston, established Boston's third and most ambitious sailing packet line to run between Boston and Liverpool. Enoch Train was favorably known as an enterprising merchant and shipowner, and when he announced, in 1843, the inauguration of the White Diamond Line of sailing packets to operate on a regular, advertised schedule between Boston and Liverpool, much was expected of the service, even though at that time Samuel Cunard's wood paddle-wheel steamers were operating regularly between the same two ports by way of Halifax, Nova Scotia. Train had been engaged in the South American trade in the thirties with the ships *Dorchester* of 415 tons, *Cairo* of 600 tons, and *Governor Davis* of 800 tons. In 1839 he built "the superior packet ship *St. Petersburg*" for the Baltic trade. This vessel, constructed at the yard of Waterman & Ewell, of Medford, Mass., was of 814 tons register, 160 ft. long, and 33 ft. beam; she had a square stern, painted ports, and large accommodations for passengers. It is said that in the Boston-Charleston-Baltic trade, under the command of Capt. Richard Trask, the *St. Petersburg* "created a sensation at every port she touched at." Trask has been described as "one of those princely owner-skippers with the grand manner" and as "a lavish entertainer." He was evidently popular at St. Petersburg and at Baltic way ports of call, and his cargo of southern cotton was in demand and sold well. It was Captain Trask's experience with the *St. Petersburg* that influenced Train to organize his White Diamond Line of transatlantic packets, but Train apparently failed to realize that trading to the Baltic direct from a southern cotton port was an entirely different matter from running a real line of regular sailing packets, with scheduled departures, direct across the North Atlantic between Boston and Liverpool. Train's White Diamond Line commenced transatlantic packet service in 1844 with the *Dorchester, Cairo,* and *Governor Davis,* diverted from the South American trade, and the *St. Petersburg* from the cotton Baltic trade. All were advertised as "first-class, Medford-built, copper-fastened, coppered, and fast." These ships averaged about half the size of the Cunarders, and from the start they were "compelled to accept lower rates for freight and passengers."

In addition to this nucleus of a transatlantic packet fleet, Train put in the service the *Bostonian* and *John Eliot Thayer,* and in 1844 William Pickett, of Newburyport, Mass., with Donald McKay as master shipwright and partner, built the *Joshua Bates* of 620 tons (length 143 ft. and beam 31 ft.) for Enoch Train's White Diamond transatlantic packet line. The lure of far eastern trade caused Enoch Train & Company to withdraw the *"Bates"* from the Boston-Liverpool run and send her out to Canton toward the end of the forties. Prior to the removal of the *"Bates"* from the North Atlantic service, the Boston CORRESPONDENT made caustic comments on Train's Boston-Liverpool White Diamond Line, stating that, whereas there were four ships in the fleet, only one of them, the *Joshua Bates,* "could sail." Cutler says, "Even at that, the line might have given satisfaction of a sort were it not for the fact that 'sailing day' as often as not saw the ship starting for a southern port to fill up instead of leaving for Liverpool."

The *Joshua Bates* was a good sailer for a packet ship, but she made no records in the transatlantic "ferry" service or elsewhere. She made a rather long homeward passage of 120 days in the "new style tea trade" with Captain Stoddard in command, and this at the same time that the *Houqua* (Captain Palmer) ran home in 101 days. The *"Bates"* sailed from New York on March 12, 1851, for California and arrived at San Francisco on October 16, 1851. This figures 218 days elapsed time, port to port, but the passage was reported at 156 days net, which was slow sailing time. In 1852 the ship cleared Shanghai on January 28 and arrived at London on June 11 after a passage of 135 days—an ordinary run. Her best sailing was when she participated in a five-vessel race of some twelve thousand miles from Anjer home. The *Samuel Russell, N. B. Palmer,* and *Wild Pigeon,* all clipper ships, the *Comet,* a medium clipper bark, and the *Joshua Bates* all cleared Anjer on April 27, 1853. The *Samuel Russell* arrived at New York on July 26 and the *N. B. Palmer* and the *Wild Pigeon* on July 28; the *Comet* reached Boston on July 29; and the *Joshua Bates* finished last, reaching New York on August 2—one week after the "*Russell*" and only four or five days after the three other clippers. This 97-day passage of a packet type of ship is most creditable when compared with the 90- to 93-day runs of the sharper-lined, more heavily canvased ships.

After Enoch Train had financed Donald McKay and got him established in a yard of his own in East Boston, McKay built the following sailing packets during the six-year period 1845-1850 inclusive for the Train Boston-Liverpool White Diamond packet line:

Name	Year Built	Tonnage	Length			Beam	Depth
			Keel	Deck	Over-all		
		Tons	*Feet*	*Feet*	*Feet*	*Feet*	*Feet*
WASHINGTON IRVING	1845	751	142	151	157	33	21
ANGLO-SAXON	1846	894	147	158	162	35	21
OCEAN MONARCH	1847	1,301	188	195	205	38	23
ANGLO-AMERICAN	1848	704	145	150	156	33	20
PARLIAMENT*	1849	998	160	170	182	37	22
DANIEL WEBSTER	1850	1,187	173	182	195	38.5	24

*The PARLIAMENT, which operated in the line, was built for Upton, of Boston, as was McKay's first clipper, the STAG HOUND.

Another transatlantic sailing packet, the *Plymouth Rock*, built by Donald McKay, East Boston, in 1849 for George B. Upton et al., Boston, was chartered by Train & Company for service in its Boston-Liverpool line. This ship of 973 tons (length 168 ft. on deck, beam 36½ ft., depth 21½ ft.) was acquired in 1856 by the New York-London Red Swallowtail Line of sailing packets and ran twenty-four years in that service, or until 1880, when the line discontinued operations. The ship was sold to the Norwegians after thirty-one years of transatlantic packet duty sailing from the ports of Boston and New York to Britain.

Bostonians, generally, did not think well of Train's packet line and were free to criticize both the ships and the management. Some of the McKay-built ships were small for first-class transatlantic packet service in the late forties, when a ship of from 1,000 to 1,500 tons was the order of the day. Cutler says:

> There is little doubt that at this period Boston-built ships were inferior in size, model, and strength to the New York vessels. This was not the fault of the builders, for they knew how to build fine ships. The fact seems to be that Boston merchants did not want to invest the money in a single hull that the New York firms did. Probably, owing to local conditions, which included the competition of the Cunard steamers, a liner which cost around $100,000—the price of a first-class packet—could not have earned her way at the time in the Boston-Liverpool trade.

The best vessel of Train's White Diamond Line was the McKay-built packet *Daniel Webster*. The "*Webster*" was described, when she first appeared in service in 1851, as "of 1,187 tons register, 1,500 tons burthen, measuring 186 feet from head to taffrail, 40 feet extreme beam, 24 feet depth of hold, and a draught of 16 feet." It was further said: "Under water, she is as sharp as a wedge but full enough above, with ample bearings. She is a three-decker, with a long poop running almost up to the end of a long topgallant forecastle, and the ship can be worked from the weather decks without a man having to put step on the main deck." The *Daniel Webster's* passenger accommodations, first and second class and also steerage, were, it is said, "unusually good and capacious." The lower deck was fitted with iron berths for 450 emigrants, "whilst below this the timbering was prepared for another deck should it be required." The "*Webster*" evidently did her best sailing or encountered the most fortunate conditions on her maiden passage, when she ran from Boston Light to Cape Clear in 13 days 10 hours.

It is said that Train's Boston packet line, for a while, "did a flourishing immigrant business." A few fast runs were made by the bigger and better ships when conditions were to their liking. The *Ocean Monarch,* "the giant of the Boston fleet," which sailed from Boston in March 1848 four hours after the Cunard S.S. *Britannia,* arrived in the Mersey the same day as the steamer, both vessels making the eastbound passage in 15 days. But disaster soon followed the quick run of the *Ocean Monarch,* and she was destroyed by fire off Orm's Head, Liverpool, within sight of the English coast, on August 24, 1848, with a loss of four hundred lives.

Enoch Train was influenced by Donald McKay to build and operate big, fast ships, and the following clipper packets were constructed by McKay for his patron and friend:

Name of Clipper Packet	Year Built	Tonnage	Length: Keel	Length: Deck	Length: Over-all	Beam	Depth
		Tons	*Feet*	*Feet*	*Feet*	*Feet*	*Feet*
STAFFORDSHIRE	1851	1,817	215	228	240	41	22
STAR OF EMPIRE............	1853	2,050	208	220	232	43	27.5
CHARIOT OF FAME..........	1853	2,050	208	220	232	43	27.5

Prior to the calamitous loss by fire of the *Ocean Monarch,* the Train Boston packet *Dorchester* foundered on December 12, 1844, and the *Rochester* (714 tons) of the New York-Liverpool New Line (built by Brown & Bell, New York, in 1839), under the command of Capt. John Britton, rescued the passengers and crew during a terrific gale at sea.

During the last days of 1853, Enoch Train's "great pride and joy," his clipper packet ship *Staffordshire,* met a disastrous end in the North Atlantic service. This ship (one of the largest vessels afloat and thirty-nine tons bigger than the famous *Flying Cloud*) was built by Donald McKay for Enoch Train & Company and designed for use in either the California-Australia or the North Atlantic trade. The *Staffordshire* is credited with a run from Boston to Liverpool, under Capt. Albert H. Brown in 1851, of 13½ days, pilot to pilot, and 14 days 18 hours, dock to dock. Under the command of Capt. Josiah Richardson, she first sailed for India and ran home from Saugor (January 26) to Boston (April 20), in 1852, in 82 days—a record over the Calcutta course. The *Staffordshire* then sailed from Boston, on May 3, around the Horn to San Francisco, where she arrived August 13, 1852, after a fine passage of 102 days, beating by four days the clipper *Shooting Star,* which sailed from Boston at the same time. (The next best run of any April 15 to May 15 sailing was that of the *Flying Cloud* in 115 days—reported as 113 days.) On this voyage, the *Staffordshire* carried 120 passengers and, it is said, had a "freight list 13 feet long." Following another Indian trip, the vessel was put in the transatlantic service "owing to the stagnation of both the California and Australian trades." Returning home from Liverpool in December 1853 (sailing December 9) with 180 Irish emigrants aboard and the total number of passengers and crew stated as 214, the *Staffordshire* encountered extremely heavy gales on the banks. On December 24, her rudderhead was badly sprung and the steering gear disabled; later, her bowsprit and head gear were carried away, the foremast with everything on it went overboard, the temporary rudder was lost, the steering device destroyed, and Captain Richardson was severely injured. On the night of December 30, the ship struck on Blonde Rock, off Cape Sable, partly due to a miscalculation of position, and was destroyed, with the loss of 170 persons, including her captain. It has been truly said, "Few tragedies of the sea made a deeper impression on contemporaries than the loss of the *Staffordshire.* It was a gloomy ending to a year of unparalleled achievement by ships of the sail."

The *Star of Empire* and *Chariot of Fame,* designed and built by McKay "for either the transatlantic or Australian service," did not see much transatlantic service, but they helped to bankrupt Enoch Train, whose shipping interests collapsed as soon as the California Gold Rush boom commenced to subside. The *Star of Empire* met misfortune, as did so many other Train ships, early in her career. Under Captain French, she put into Algoa Bay, South Africa, badly battered, strained, and leaking on June 28, 1856, when on a voyage from Rangoon to Falmouth, England, and was condemned.

The *Chariot of Fame* (Capt. A. H. Knowles) operated first as a Boston-Liverpool packet and made seven round voyages. She was launched in April 1853 and is said to have averaged good time, but to have had one strenuous westbound passage that came near ending disastrously. Leaving Liverpool on January 11, 1854, with a cargo valued at half a million dollars (said to be the heaviest and most valuable cargo to leave that port for the United States) and 79 steerage and about a dozen cabin passengers, she collided the first night out with an unknown bark and lost her jib boom. On January 23, in a heavy gale with high seas, she lost several sails and broke her main yard; the bulwarks were smashed, the cabin was flooded, and four boats were washed away. The next day, furled sails were torn from the yards, and the figurehead was washed away. On February 7, she found herself in the same longitude as on January 22. She reached the entrance to Boston Bay on February 23, encountered a fierce northwest gale, and lost more sails. With no more canvas to bend and with many of her crew incapacitated or frostbitten, the vessel put into Provincetown in a blinding snowstorm and was towed into Boston by the steam ocean tug *R. B. Forbes* on February 26, 1854, after a passage of 46 days. She had been detained in the same longitude for sixteen days and had failed to reach her destination under her own sail. The "*Chariot*" saw service in the White Star Line of Australian packets and then engaged for a while in general trade. In 1858 she entered the California trade and made three westbound around-the-Horn passages from New York to San Francisco in 126, 117, and 143 days, respectively. She then sailed between England, Australia, and New Zealand and was sold, in 1868, to Wilson & Chambers, of Liverpool. (The ship disappeared from the records in 1874.)

The *Cathedral,* chartered and operated by the Train line, was thrown on her beam ends at sea and foundered in 1857, with the loss of many lives. It has been truly said, "No New York line of packets approaches the tragic record of Enoch Train's Boston line, which in a brief space of time had a series of wrecks involving the loss of several hundred lives." Enoch Train, an energetic visionary (and the man who not only discovered but also made Donald McKay by financial and moral support), overreached himself and failed during the panic of 1857. His ships were sold—many to the British—and his successors in ship operations, Thayer and Warren, substituted chartered British steamers for American wood sailing vessels in the Boston-Liverpool trade and later, as the Warren Line, operated steamships under the British flag until 1913.

Enoch Train was undoubtedly a man of great ability, persistence, and energy, but he was unable to make a success of his packet line between Boston and Liverpool. He probably listened to Donald McKay too much and "went too strong" for clipper models in the Atlantic trade, and he certainly did experience a great measure of unusually bad luck, but even without these handicaps, he would have been fated to failure. During the decade in which Train operated, no one could have made a Boston transatlantic sailing packet line succeed or even survive in competition with the larger and better New York sailing packets, the British-subsidized steam Cunard Line running to both Boston and New York, and the fast New York-Liverpool American steam Collins Line, which rendered excellent and reliable express (ten-day) service during 1850 and for several years thereafter.

Coastal Packets—"Feeders" for the New York Transatlantic Lines

Prior to the sailing of the Black Ball transatlantic packet ships, the name "packet" was lightly and erroneously used, particularly in the coastal trade. Albion comments on this indiscriminate use of the word "for everything from sloops to full-rigged ships operating with varying degrees of regularity" and refers to vessels being given names "to indicate regular functions that were not maintained." Regular traders were often referred to as "packets," and this practice continued with the years and was not limited to the coastwise trade. Of extreme illegitimate uses of the word "packet" actually incorporated into the registered name of a vessel, Albion writes, "In the course of a single year, there arrived at New York the *Boston Packet* from Philadelphia, the *South Carolina Packet* from St. Croix, and the *Manchester Packet* from New Orleans" (also the *London Trader* from Canton).

In 1818 a number of 180-ton sloops made regular passages between New York and Boston, but real coastwise packet lines were not established until the Black Ball Line (with its first sailings in January 1818) had proved that the idea of sailing as per a regular, advertised schedule was feasible and could be profitably applied. Competitive Liverpool packet lines entered the trade in 1822, and in that same year the Charleston Ship Line came into being, following by a year the inauguration of the first coastal packet line, the New Orleans (Old) Line, which had its first sailing in 1821. In 1824 the New York-Savannah line came into operation, and a second New Orleans line of packets—the Holmes Line—commenced regular sailings, so by the time (1824) that eight New York transatlantic packet lines were in practical and successful operation (three to Liverpool, three to Havre, and two to London), four New York coastal packet lines were established with regular, scheduled sailings. These lines were: (1) New Orleans (First, or Old) Line, which put three brigs of from 244 to 254 tons in the service in 1821, (2) Charleston Ship Line, which had five ships of from 204 to 265 tons on the run in 1822, (3) Savannah Line, which operated five ships of from 228 to 313 tons in 1824, and (4) New Orleans Holmes (or Second) Line, which placed three ships of from 276 to 309 tons and one brig of 195 tons (four vessels in all) in the service in 1824.

A coastwise packet line was established between New York and Mobile in 1826, with three ships of from 192 to 306 tons entering the service that year; five years later (1831), the important Louisiana & New York Line inaugurated its packet service with five new and relatively large ships for the coastal trade (513 to 542 tons, average 523 tons). In 1839 the fourth and last New Orleans sailing packet line (the New York & New Orleans Line) commenced operations, sailing three ships of from 427 to 680 tons that year and putting two more ships (one of 427 and one of 799 tons) on the run the following year. The last of the real New York coastal sailing packet lines was the Charleston Bulkley Line, which had an initial sailing of one ship of 499 tons in 1843, but had three other ships of from 436 to 524 tons in the service in 1844.

The coastal packets were primarily "feeders" (and distributors) of and a vital supplement to the New York lines of transatlantic, or ocean, packets. These ships brought southern products—primarily cotton—to New York, and on their outbound southern (or westward) passages carried a good portion of the European wares brought to New York by the Liverpool, London, and Havre packets. New England generally traded with Europe direct from Massachusetts and Down East ports, using regular traders and occasionally a packet line from Boston. Connecticut and Rhode Island (and at times Massachusetts) used the New York packets and coasters for shipments of commodities to and from Europe, but the volume of business of the New York packets was in New York and up-state goods (coming from points farther and farther inland following the completion of the Erie Canal in 1825) and products brought to New York as a trading center by water from the South. It was natural, therefore, that New York coastal packet lines (by far the most important ones and, it has been said, "the only real coastwise square-rigged ship packet lines" of the period) ran to and from cotton ports in the South.

During the sailing packet ship period, in addition to the eight major lines before mentioned, there were other less important and relatively inferior "brig" or "brig and schooner" lines operating between New York and Charleston, Savannah, New Orleans, and Mobile, some of which had their initial sailings prior to 1822. Other minor packet lines ran between New York and Florida ports, such as Appalachicola, St. Joseph, St. Marks and Magnolia, St. Augustine and Jacksonville, also to New York from Darien, Ga.; Wilmington and Washington, N. C.; Norfolk, Petersburg, and Richmond, Va.; Baltimore, Md. (the Old Line, also Todd's, Despatch, and Miller & Banker's), Alexandria, Georgetown, and Washington on the Potomac; Boston (the Despatch, Commercial, Tremont, and New lines) and Salem, Mass.; Portsmouth, N. H., and from several Long Island Sound ports, such as New Haven, Hartford, Middletown, New London, and Norwich, Conn., and Providence, R. I. There were also packet lines between New York and Cartagena, Vera Cruz, and Havana and minor transatlantic lines to Greenock, Scotland, and Bell's line to Liverpool via Belfast, Ireland.

The Cotton Triangular Trade—the Economic National and International Importance of Cotton

It has been said that the New York transatlantic packet lines in the twenties and thirties would have been no more successful than the lines that "dragged on a weary existence" from Boston and Philadelphia had it not been for the inauguration in the early twenties of an excellent system of southern coastwise packets which routed transatlantic business via New York. One historian has gone so far as to say that the New York ocean packet lines owed their success to the "enslaving of the cotton ports." This is an extreme and unwarranted statement, but undoubtedly New York owed much of its volume and profits in its transatlantic packet trade to the operation of the auxiliaries—the southern cotton packets. Albion writes:

> The close relation between New York and those cotton ports resulted from the creation of the "cotton triangle"— one of the most impudent acts in American commercial history. The New Yorkers dragged the trade between the South and Europe two hundred miles out of its normal course in order that they might exact their lucrative toll from it and secure eastbound cargoes for their ocean packets. To clinch this abnormal arrangement, they developed the coastal packet lines, without which they would have found it extremely difficult to make the eastbound trips of the ocean packets profitable. Part of the South's cotton and other products, therefore, went to Europe by way of New York, and a far greater proportion of the South's imports of European goods came by the same indirect route. . . . The shrewd aggressiveness of the New Yorkers in thus causing commerce to travel along two sides of a triangle when it might have gone straight along the base was a very vital factor in the port's rise to maritime prominence. It may be argued that, for a considerable part of the period, it brought more business to the port than did the Erie Canal and that without it New York could not have attained its commanding position in handling the nation's imports.

The "cotton triangle" affecting the South was merely a later version of the old "sugar triangle" of colonial days. Prior to the Revolution and for some period thereafter, Europe could not use northern American products in a quantity to offset America's need and desire for European manufactured goods, so New Englanders developed the triangular trade, taking their lumber, fish, etc., to the West Indies, exchanging it for sugar or molasses, and shipping this to Europe where it had a ready market, the sales revenue being used in acquiring desirable manufactured goods for American consumption. When Britain, through its commercial policy and navigation laws, closed this trade to American ships, cotton was used to a great degree in the place once held by sugar, and the cotton triangle was developed to the advantage of both southern planters and northern shipping interests.

The real cotton triangle trade was not one that benefited the New York packets or even New York both ways, although the business was handled—as had been the sugar triangle trade—by Yankee ships. Vessels handling the "out-and-out" triangle trade would sail from a northern port (generally New York) to Charleston, Savannah, Mobile, New Orleans, or any southern port, load and take from there cotton direct to Liverpool or some other European port, cross the Atlantic westbound with manufactures, and then proceed to the southern cotton port again with some of these European goods or in ballast.

Generally, northerners took all of the financial risk of this export business, and there were occasions when they not only lost heavily but also were driven into insolvency by the European market on cotton, with its depressions and panics (and long periods of time required for news of conditions in Liverpool or Havre to reach the shipping ports of the South or the northern cotton factors in inland southern towns). The South, at times, rebelled against the domination of the southern cotton business by "Yankee shipowners and merchants." One southerner, refusing to look at more than "one side of the shield" and ignoring the risks taken by the "Yankees" and the cost of transportation, all handling and insurance, indignantly declared that, out of every dollar paid for southern cotton, forty cents went to the northerners and only sixty cents to the southern planters.

The South was not marine-minded, nor did it take kindly to commerce and mercantile pursuits. The southerners were content to produce a single, specialized commodity, cotton (as the Caribbean planters did sugar), and let northerners manage the South's commerce. New York and, later, Yankee businessmen handled the exports of the southerners, advanced them money, and often engineered their entire business and took all of the financial risk; at the time of the Civil War, Maine was not only building cotton ships for the New Orleans trade but also supplying the men who became the prominent merchants, exporters, and shipping men of the southern city. Yet in the sailing packet days, the situation was much as expressed by a contemporary writer: "If we liken the European packets to an Atlantic railroad, the coasting packets may be called branch roads which collect the necessary outward and disperse the rich homeward cargoes of the forty-eight liners—both together—making New York the mart for exchanging the products of America for the manufactures of Europe."

Of New York's total exports of domestic products valued at $9,228,000 in 1822, nearly sixty per cent was in southern commodities; cotton exports of $3,925,000 represented 42½ per cent of the total and were five times the value of the next item, which was northern flour ($794,000), and southern tobacco, valued at $754,000, or 8¼ per cent of total exports, ran a close third. Other New York exports of southern products ranked in seventh and eighth places in relative value and consisted of naval stores ($232,000) and rice ($213,000); also, part of the fifth item, furs and skins ($291,000), originated in the South. The biggest export items of northern products following flour were pot- and pearl-ashes (potash from burned wood), $464,000; flaxseed, $277,000, followed by salt beef and pork. In 1822, of 51,000 bales of cotton shipped from New Orleans coastwise, 28,000 bales (55 per cent) went to New York, 10,000 to Philadelphia, and 7,000 to Boston. In 1825, during the speculative boom, out of 69,000 bales shipped to American ports, 51,000 bales (74 per cent) went to New York, 7,000 to Boston, and 3,000 to Philadelphia.

Southern cotton was first exported to England in 1785, but commencing with the second decade of the nineteenth century, the demand for it grew so rapidly that cotton soon became and continued up to the Civil War the principal crop for export and the prime commodity providing stable employment for northern ships. Bath, Maine, which later became a leading cotton shipowning port, sent its first vessel to the South for a cotton cargo in 1802; this was the brig *Androscoggin,* which sailed to New Orleans for her freight. Whereas in 1790 exports of cotton amounted to only 379 bales, they had increased to 163,894 bales in 1815 (or, it was said at the time, "enough to load about forty vessels") and at the close of the twenties "passed the half million bales mark." As early as 1821, cotton accounted for 37 per cent of the money value of all American exports (excluding specie) and represented a worth of about twenty million dollars in shipments per annum. Hutchins refers to the northern shipbuilding towns, "especially those in Maine," which built in large numbers "great bluff-bowed, flat-floored, kettle-bottomed cotton freighters." They carried such appropriate names as *Arkwright, Lancashire,* and *Alabama,* and their size rapidly increased from "about 400 gross tons in 1830 to about 1,400 gross tons in 1850." The well-modeled full-rigged ship *Rappahannock I* of 1,133 tons, built by Clark & Sewall, of Bath, Maine, in 1841 and heralded as one of the largest and finest ships of her day, was built for the cotton trade.

The production and export of southern cotton during the thirty-year period 1830-1859 were as follows:

Year	Bales of Cotton Produced	Bales of Cotton Exported	Year	Bales of Cotton Produced	Bales of Cotton Exported
1830	732,218	553,960	1850	2,136,083	1,854,474
1840	1,347,640	1,060,408	1859	4,309,642	3,535,373

The export cotton was not all handled direct from the port of shipment to the foreign port of destination, for a good part of it was carried to New York by coastwise vessels and transshipped there to transatlantic packets and general traders for the British, French, and other European markets. Gradually, however, the larger part of the cotton export business was handled by triangular trade, by which the New York and New England cotton freighters sailed some seven or eight hundred miles from New York to Charleston or Savannah (and later some seventeen or eighteen hundred miles to the newer Gulf and Mississippi cotton ports—New Orleans and Mobile), took a load of cotton to a British or other European port (generally Liverpool or Havre), and then made a westbound transatlantic passage to New York with a cargo generally of manufactured goods, a part of which (or its equivalent) would be carried to the southern cotton port on the first leg of another triangular voyage.

I. D. Andrews estimated that in 1852 some eight hundred thousand tons of American shipping, employing forty thousand men, were engaged in the foreign portion of this cotton triangular trade. This tonnage, it was said, comprised about forty-seven per cent of the registered fleet, and it was also estimated that the coastwise shipping employed in this cotton trade "amounted to one million one hundred thousand tons, manned by fifty-five thousand seamen, or fifty-five per cent of the tonnage documented for the coastwise trade." It has been truly said, "The prosperity of the northern seaports and shipping interests was closely tied to southern cotton growing, a fact which later became a great weakness." The two prime reasons for Britain's openly expressed sympathy for and interest in the South during the Civil War were (1) England's jealousy and envy of the superior American merchant marine, whose ships were practically all built and owned in the North, and (2) the great need of England's mills and of the English people, both at home and abroad, for cotton grown in the southern states.

Joshua Bates, in his testimony before the British Select Committee on Manufactures, Commerce and Shipping, said in 1833 that American ships engaged in the cotton trade possessed notable competitive advantages. These cotton carriers, unlike most foreign vessels, had broad, flat bottoms on account of the shallow water on the Mississippi Bar, etc. They also had greater length than had been customary and "swollen sides" (flat floors with kettle bottoms). They had proved to be good sailers and could carry some two thousand pounds of cotton per registered ton in comparison with some nine hundred pounds carried by the freighters of about twenty years before. The conclusion of the British committee was that the American ships engaged in the cotton trade were superior to the shorter, smaller, and proportionately deeper British craft; that by virtue of their excellent construction and "clean cargo turnout" American cotton ships could demand and receive from shippers a freight premium; that American vessels were protected by the navigation monopoly on the coastwise leg of the triangular transatlantic voyage and that, consequently, American-built and owned ships dominated the growing and most important cotton trade, carrying some seventy-five or eighty per cent of such cargoes. This statement in regard to volume was probably correct, for in 1855, out of 604,405 tons of shipping clearing New Orleans, La., 480,505 tons, or 80 per cent, were under the American flag and only one-fifth of the total tonnage, or 123,900 tons, under the flags of all other nations.

Lancashire, England, the greatest cotton goods manufacturing center of the world, became dependent on southern cotton, but the Civil War, with the blockade of southern ports by the Union fleet, promptly operated to terminate this business. Cotton exports, which were over three and a half million bales in 1859, dropped to ten thousand bales in 1861 and were negligible for the remaining years of the war. It was said that 72 per cent of the cotton used in the world-famous British mills, then supplying most of the world with cotton goods, was grown in the southern states. The suspension of this transatlantic cotton trade caused a cotton famine in England and did much to throw the sympathies of the British to the South during the Civil War. Their support of the South and their antagonism toward the North were expressed in many very definite ways, one of which was the furnishing and manning of Confederate commerce raiders; it is significant that the dreaded *Alabama,* which either destroyed so much northern merchant shipping or drove it from the seas (and much into British registry), was built in Birkenhead, across the River Mersey from the County of Lancashire, where England's great cotton mills are located.

However, England and other foreign countries did not suffer alone by the termination for several years of the cotton export trade. The blockade of the Union fleet deprived northern ships of their largest and most valuable outbound cargo, and the suspension of this business caused a severe disruption of the northern shipping and shipbuilding industry. Prior to the commencement of hostilities, New England ports and shipbuilding centers were very close to the South in a personal as well as business way. Indeed, it was said that Bath, Maine, one of the farthest north of the country's shipping and shipbuilding centers, was "nearer New Orleans than New York." Bath men operated shipping in New Orleans, Bath ships carried New Orleans cotton to the markets of the world, and families of Bath, Maine, and New Orleans, La., were united by marriages extending over a period of more than half a century. From the firing of the first shot, the sympathies of Bath, Maine, in a political and military sense, were fully with the North, and its patriotic support of the Union was praiseworthy; nevertheless, it was associated with many heartbreaks. In an economic sense, Bath, Maine, had more to lose than any community of its size and wealth in the country because of the Civil War—its immediate crippling effect upon American shipping and its ultimate detrimental effect upon the United States merchant marine.

During the Civil War, southern capital interests in marine tonnage were generally sold to the British as was some of the unemployed northern-owned tonnage. After the war, the cotton trade never came back as far as the use of northern ships in handling the export business was concerned, and, as a matter of fact, the export volume to Britain did not equal the 1859 volume until twenty years had gone by. The marine tonnage clearing New Orleans with cotton in 1865 was less than one-twelfth that of five years before, and the tonnage of the American cotton fleet in this trade as it resumed after the war was only one-twentieth that of 1860. The enmity of the South toward the North was evident. British and Canadian ships were favored over those of New England. In the late sixties, many northern-built ships that had been acquired in England by "distress sales" during the American depression and panic of the late fifties and the period of the Civil War operated in the southern cotton trade under the British flag, and United States ships of similar size and type could not compete with them profitably because of the constantly rising cost of operating under the Stars and Stripes and the much cheaper cost of navigation under the British flag. Gradually, British iron screw steamers of shallow draft, built to go up the Mississippi, took the bulk of the trade away from American wood sail and British iron sail. Steamships clearing New Orleans in 1870 represented 26 per cent of the foreign tonnage, and by 1880 the tonnage of steamships leaving New Orleans in foreign trade, loaded primarily with cotton, aggregated over 465,000 tons and represented 64 per cent of the total foreign tonnage.

Charleston Ship Line

Whereas so-called coastal packet lines were in existence during the eighteenth century, the real packet service, with established, responsible lines operating on an advertised and regular schedule, did not start until March 1822—the eventful year which saw the New York transatlantic packet service increase from one to three lines and from monthly to weekly sailings. January 1822 saw the initial sailing of the newly organized Red Star (Liverpool) Line, and two days before the Black Ball doubled its Liverpool sailings, with eight packets sailing fortnightly instead of four packets monthly, and a few months before the Blue Swallowtail Line to Liverpool and the first Havre line commenced their packet services, the following news item appeared in the New York MERCANTILE ADVERTISER of March 14, 1822, calling attention to a shipping advertisement appearing in that issue:

LINE OF PACKETS TO CHARLESTON—Messrs. Barker and Hopkins, and O. Mauran, it will be seen, have arranged to run the ships PRESIDENT, COMMODORE PERRY, AMELIA, and FRANKLIN as a line of packets between this port and Charleston, at regular periods, one of the ships to leave each port on the 1st, 10th, and 20th of every month. The great and increasing intercourse between the two ports will no doubt warrant this undertaking, and the enterprise cannot fail to be beneficial to the public.

This pioneer coastal packet line, at the end of the first summer, added a fifth ship, the *Empress,* to the service and inaugurated a weekly schedule. It continued operations until 1855 and was, in many respects, better than the many coastal packet lines that followed it from the standpoint of regular and punctual sailings and of maintaining the essentials of a real packet service. The original New York-Charleston packet line was known as the "Ship Line," as all its vessels were full-rigged ships, and competitive lines sprung up using brigs and schooners. Prior to the forming of a line to conform with packet requirements, most of the vessels sailing between the ports had been loosely designated "packets"; hence for many long years, in both coastal and ocean trade, it became necessary to differentiate between real packets and pseudo-packets by calling the true packet ships "line ships."

Charleston was an important port in late colonial days, when it practically equaled Philadelphia, New York, and Boston in volume of trade. It was the first of the American cotton ports, but in the twenties New Orleans commenced to challenge it, and as cotton planting extended to the west and south, New Orleans and Mobile supplanted Charleston and its nearby and companion port of Savannah as the country's prime cotton ports. Charleston, prior to the inauguration of the Charleston Ship Line, had traded more heavily with New York than with other northern ports, and during the first half of 1822, out of 165 arrivals of vessels of all types at Charleston from the four principal trading ports to the north, 47 per cent were from New York, 25 per cent from Baltimore, 15 per cent from Philadelphia, and 13 per cent from Boston.

The four pioneer packets of the Charleston Ship Line, with the vessels added to the service during the period 1822-1825, were as follows:

Name of Packet	Tonnage	Dimensions Feet and Inches: Length	Beam	Depth of Hold	Builder	Year Built	Period of Packet Service
PRESIDENT	243	94-0	24- 9	11-9	Fairfield, Conn.	1818	1822-1831
COMMODORE PERRY	262	92-0	25- 6	12-9	N. Brown, New York	1816	1822-1827
AMELIA	204	82-0	24- 0	11-0	Saybrook, Conn.	1815	1822-1823
FRANKLIN	212	84-0	25-10	11-6	Killingworth, Conn.	1819	1822-1825
EMPRESS	265	91-0	25- 6	13-1	F. Cheeseman, New York	1820	1822-1831
NIAGARA	319	94-6	26- 8	14-6	Saybrook, Conn.	1822	1823-1840
CALHOUN	285	101-6	26- 4	12-0	Brown & Bell, New York	1823	1823-1844
CHARLESTON I*	167	81-0	23- 5	10-5	Fairfield, Conn.	1822	1823-1824
LAFAYETTE	341	105-0	25- 9	14-1	N. Brown, New York	1824	1824-1841
OTHELLO	264	87-3	26- 2	13-5	Middletown, Conn.	1822	1825-1831
SALUDA	289	98-8	25- 4	12-9	N. Brown, New York	1821	1825-1838

*Originally a brig and the smallest of the packets; when she was a year old, a third mast was added, and she was changed to a ship rig so that she could qualify for service in the Charleston Ship Line. The vessel proved to be too small for the trade and was withdrawn in 1824.

Of the eleven Charleston packets here enumerated, six (55 per cent) were built in Connecticut and five (45 per cent) in New York; whereas of the forty-five packets that entered the New York transatlantic packet lines up to and including 1825, thirty-nine (86⅔ per cent) were built in New York, three in Massachusetts, two in Connecticut, and one in Baltimore. The coastal packets were small, particularly so for full-rigged ships, and the first eleven vessels of the Charleston Ship Line averaged only 259 tons. The ships averaged about three years old when they entered the service and twelve years old when they were withdrawn, showing an average length of service in the line of nine years. Of these first eleven Charleston packets, three were wrecked—all near the entrance of New York Harbor. The *Franklin* was wrecked at Island Beach, New Jersey, April 28, 1825, after three years in the line and when six years old; the *Othello* on Rockaway Beach, Long Island, January 4, 1831, after six years in the line and when nine years old; and the *President* on the New York Bar on December 5, 1831, after nine years in the line and when thirteen years old. One, the *Lafayette* of 341 tons, the largest of the eleven earliest Charleston packets, went to the whaling trade in 1842 after seventeen years of continuous service in the line and served as a whaler for at least thirty-five years (1842-1877) and was still registered as a whaler at New Bedford six years later (in 1883); in 1852 she was renamed *Gazelle.*

The *Calhoun* (285 tons) was in every respect a noteworthy ship. She held the all-time record for length of service (twenty-one years) in the Charleston, Savannah, and Mobile lines, and her time as a packet in continuous coastwise service was beaten only after mid-century by the *Vicksburg* (479 tons), which operated from 1835 to 1857, or twenty-two years, in two different New York-New Orleans lines. The *Westminster* (631 tons) and the *Wellington* (726 tons), which finished their packet careers in the (New Orleans) Louisiana & New York Line in 1857 and 1859, respectively, each with a record of twenty-two years as packets, operated only six years as coastal packets, the other time being spent in the New York-London transatlantic service. The *Calhoun* (285 tons), with an average length of passage from New York to Charleston of 5.9 days for twenty-one years (1823-1844), holds the best maintained speed record between these ports, being challenged only by the *President* (243 tons), *Othello* (264 tons), and *South Carolina* (580 tons), which showed for nine, six, and four years, respectively, the same average passage of 5.9 days, and by the *Angelique,* which for the short period of three years (1833-1836) is reported to have averaged only 5.3 days. The *Calhoun, President, Othello,* and several other packets were credited with 3-day passages, but the best runs of the *South Carolina* and of the *Angelique* were of 4 days' duration. However, the *Calhoun* achieved notoriety in February 1831 with a long passage—against severe gales—of 22 days (one day shorter than the record long packet passage between the ports made in January 1837 by the 319-ton *Niagara*); the Savannah packet *Tybee,* experiencing the same storms as the *Calhoun,* was 36 days in making her passage and, it is said, was "driven halfway across the Atlantic."

The packet ships materially reduced the length of passage between the coastal ports. Albion, referring to the inauguration of the New York-Charleston Ship Line in 1822, writes: "The average running time of the non-packets from New York was nine days, identical with the average from Philadelphia and Baltimore. The ships of the new line, however, averaged two days faster. Boston, handicapped by its greater distance, had a thirteen-day average." During the entire life of the Charleston Ship Line (1822-1855), the twenty-one vessels in the fleet, averaging about nine years of service per ship (a total of 194 ship-years), had an average length of northbound passage of 6½ days, and it is surprising to note that, although the packets increased in size with the years, the average speed held fairly constant during the thirty-three and one-half years that the line was in operation, as the following record shows:

Number of Vessels	Period Entering Service	Average Tonnage	Number of Ship-years	Length of Northbound Passages		
				Average	Shortest	Longest
11	1822-1825	259	102	6.35	3	23
5	1826-1833	367	56	6.55	3	18
5	1834-1850	512	36	6.74	3	15
21	1822-1850	345	194	6.51	3	23

Albion reports 1,295 northbound coastal passages from Charleston to New York, of which 60 were made in 3 days, 162 in 4 days, and 281 in 5 days. The longest passages recorded were one each of 24, 23, 18, and 17 days, respectively; five of 16 days, nine of 15 days, ten each of 14 and 13 days, respectively, and twenty-five of 12 days. Seventy per cent of all the passages made occupied from 4 to 7 days, nineteen per cent took from 8 to 10 days, and six per cent from 11 to 15 days.

It appears that, at times, these southern packets carried more first-class, or cabin, passengers than the transatlantic packet ships. In late May 1825, the *President* (243 tons) and the *Calhoun* (285 tons) of the Charleston Ship Line carried eighty-eight and seventy-six cabin passengers, respectively, from Charleston to New York.

Of the last ten vessels that saw service in the Charleston Ship Line, the largest were the *Chace* of 625 tons (the last vessel to enter the service), built at Warren, R. I., in 1850; the *South Carolina* of 580 tons, built by J. Williams, New York, in 1845; and the *Catharine* of 477 tons, built at the same yard in 1839. Of these ten ships, five were built in New York, four in Connecticut, and one in Rhode Island. One, the *William Drayton* of 370 tons, built by Brown & Bell, New York, was wrecked at New Inlet near Currituck, N. C., February 24, 1833, while in the service. Three, the *Sutton* (346 tons), the *South Carolina* (580 tons), and the *H. Allen* (373 tons), sailed around Cape Horn to California in 1848, 1849, and 1850, respectively; the *H. Allen* and the *Sutton* were sold to Pacific owners, but the *South Carolina,* after being a Cape Horner, became a transient, or ocean sailing tramp, and was wrecked on Mobile Bar January 15, 1859, when fourteen years old. The reputedly "very fast" packet *Angelique* (420 tons), after three years' service (1833-1836) in the Charleston Ship Line, operated in the Savannah Line for two years (1836-1838) and, running in company with the *Oconee* and *Ocmulgee* (the two 460-ton sister ships built in New York in 1835), did not have a sailing record in the New York-Savannah service as good as either of her sailing mates. Leaving the Savannah packet service in the fall of 1838, the *Angelique* became a regular trader in the New York-Amsterdam run. The *Catharine* (477 tons), the *Sullivan* (436 tons), the *Columbia* (441 tons), and the *Chace* (625 tons) were the last Charleston Ship Line packets and carried on the service until 1855; later, the *Catharine* was sold to the British during the Civil War.

Charleston Bulkley Line

Another New York-Charleston line gave regular, fast packet service of quality between the two ports during the period 1843-1854. This line, known as the Charleston Bulkley Line, operated the following six vessels:

Name of Packet	Tonnage	Dimensions Feet and Inches			Builder	Year Built	Period of Packet Service
		Length	Beam	Depth of Hold			
SOUTHPORT	499	128-0	29-4	16-8	East Haddam, Conn.	1840	1843-1849
CHARLESTON II	492	128-0	29-2	16-7	Connecticut	1839	1844-1849
SULLIVAN	436	114-0	28-0	15-3	East Haddam, Conn.	1839	1844-1850
NEW YORK	524	132-3	29-6	15-5	New York	1844	1844-1853
FAIRFIELD	587	139-0	30-5	17-0	W. H. Brown, New York	1846	1849-1854
E. BULKLEY	730	148-0	33-0	19-6	East Haddam, Conn.	1850	1850-1852

The *Sullivan* ran in the Charleston Ship Line from 1850 to 1855 and saw, altogether, about twelve years of service in the two New York-Charleston lines. Another ship that saw her last packet service in the Old Line, after running in a competing line, was the 441-ton *Columbia* (built in 1846), which in 1849 changed from Dunham & Dimon's Charleston "line" (of sorts) to the Charleston Ship Line and, altogether, spent nine years in the New York-Charleston packet service. The *Southport* functioned as a regular trader in the Savannah run following her withdrawal from Charleston packet service in 1849. The *Charleston II* was burned at sea off Cape Lookout, North Carolina, September 21, 1849, and the big 730-ton *E. Bulkley* (built in 1850), which outclassed in size all other ships in the East Coast packet service and was exceeded in size by only some packets entering the New York-New Orleans service in the forties and fifties, is said by Albion to have been the "only packet built in Connecticut after 1848."

Of twenty-six ships placed in the service of the Charleston Ship Line and Bulkley Line and operating during the period 1822-1850 and herein considered, nineteen are credited by Albion, in SQUARE-RIGGERS ON SCHEDULE, with 3-day runs, port to port, on the northbound passage. The passage records of these ships are as follows:

Name	Tonnage	Period	Length of Service Years	Passages in Days Average	Shortest	Longest
ANGELIQUE	420	1833-1836	4	5.3	4	7
CALHOUN	285	1823-1844	21	5.9	3	22
PRESIDENT	243	1822-1831	9	5.9	3	15
OTHELLO	264	1825-1831	6	5.9	3	12
SOUTH CAROLINA	580	1845-1849	4	5.9	4	8
E. BULKLEY	730	1850-1852	2	6	3	9
LAFAYETTE	341	1824-1841	17	6.1	3	16
NEW YORK	524	1844-1853	9	6.2	3	15
CHARLESTON II	492	1844-1850	6	6.2	3	12
AMELIA	204	1822-1823	2	6.2	3	10
SULLIVAN	436	1844-1855	12	6.3	3	14
SALUDA	289	1825-1838	13	6.4	3	16
CHARLESTON I	167	1823-1824	2	6.4	3	9
SUTTON	346	1832-1848	16	6.5	3	18
H. ALLEN	373	1832-1850	18	6.6	3	16
COLUMBIA	441	1849-1855	6	6.7	3	15
FRANKLIN	212	1822-1825	3	6.7	4	14
COMMODORE PERRY	262	1822-1827	5	6.8	4	14
NIAGARA	319	1823-1840	17	7	3	23
ANSON	324	1832-1849	17	7	3	17
CATHARINE	477	1839-1855	16	7	3	13
EMPRESS	265	1822-1831	9	7	4	14
SOUTHPORT	499	1843-1849	6	7	3	16
FAIRFIELD	587	1849-1854	5	7.1	4	11
CHACE	625	1850-1855	5	7.1	5	12
WILLIAM DRAYTON	370	1831-1833	2	7.5	4	13

The New York-Charleston coastwise sailing packets ranged from 167 to 587 tons, the four largest and the four smallest ships in this service being as follows:

Name	Tonnage	Length Ft.	Year Built	Year Entered Service	Service Record of Runs Fast	Slow	Average
A. *Smallest Ships*							
CHARLESTON I	167	81	1822	1823	3	9	6.4
AMELIA	204	82	1815	1822	3	10	6.2
FRANKLIN	212	84	1819	1822	4	14	6.7
PRESIDENT	243	94	1818	1822	3	15	5.9
B. *Largest Ships*							
FAIRFIELD	587	139	1846	1849	4	11	7.1
SOUTH CAROLINA	580	131	1845	1845	4	8	5.9
NEW YORK	524	132	1844	1844	3	15	6.2
SOUTHPORT	499	128	1840	1843	3	16	7.0

New York-Savannah Packet Service

The regular packet service between New York and Savannah, Ga., commenced in 1824. Savannah was peculiarly connected with transatlantic service from 1819, when a Savannah- and New York-owned ship named the *Savannah* had machinery placed in her (in New York) and made the pioneer run for a steam vessel across the Atlantic, using steam, however, for only a very small part of the passage. John Griswold, founder of the New York-London Black X Line, and William Whitlock, Jr., interested in the New York-Havre packet service, were responsible for two lines of New York-Savannah sailing packets that started regular sailings in January 1824, within nine days of each other. The Griswold packet service "folded up" before the end of the summer, and the surviving Whitlock-sponsored line soon had different owners. Whitlock, who was important in the founding and operation of the Savannah line up to the time of his withdrawal in 1829, was the son of a New York sea captain and for years had lived in Georgia and operated as a cotton factor. While connected with the line, Whitlock was located in New York, and he was interested primarily in feeding with cotton and other southern products the Havre packets that he owned and was managing. Hall & Hoyt acted as agents for his ships in Savannah, and the Seguines, of Staten Island, N. Y., held a substantial interest in the line.

In 1836 two practically distinct lines were formed; one line was organized with the older six packets of from 302 to 590 tons, averaging 382 tons (excluding the unusually large *Louisa* of 590 tons, the average tonnage of the other five was 341 tons), and the other line was formed around the two new 460-ton packets *Ocmulgee* and *Oconee*, to which were added four more ships of from 420 to 456 tons in 1836-1838. The ascendancy of New Orleans as the South's premier cotton port, the proximity of Savannah to the more active Charleston, and the fact that the Savannah River became unsuitable (because of silting up) for the handling of the bigger packets resulted in the transfer of six of the Savannah packets to the New York-New Orleans service in 1839-1841. After 1839 only three ships, the *Celia* of 338 tons, the *Gaston* of 456 tons, and the *Newark* of 306 tons, continued in the Savannah service, supplemented by smaller brigs. The *Celia* continued to run between New York and Savannah until 1842, and the average length of all her northbound passages for her nine years of service (1833-1842) was 7 days, her fastest run being 3 days and her longest 12 days. The *Gaston* was moved to the (New Orleans) Louisiana & New York Line in 1841, and the *Newark* was wrecked on Carysfort Reef, Florida, in 1845. The *Newark* was the last of the ships that had engaged from 1824 to 1845 in the New York-Savannah service. The ships that entered the New York-Savannah packet line during the years 1824-1830 inclusive and saw steady service in that line were as follows:

Name of Packet	Tonnage	Dimensions Feet and Inches			Builder	Year Built	Period of Packet Service
		Length	Beam	Depth of Hold			
SAVANNAH	248	86-0	24-4	13- 7	New York	1822	1824-1827
WILLIAM WALLACE	228	86-9	25-4	12- 0	Hudson, New York	1822	1824-1825
LOUISA MATILDA	313	97-0	27-2	13- 7	S. Wright, New York	1820	1824-1827
AUGUSTA	236	85-6	25-0	12- 9	Saybrook, Conn.	1821	1824-1827
EMPEROR	302	94-0	26-3	14- 0	Thorne & Williams, New York	1824	1824-1837
STATIRA	253	94-6	24-7	12- 3	J. Morgan & Sons, New York	1825	1825-1834
HOWARD	336	107-0	26-6	13- 3	Smith & Dimon, New York	1822	1827-1828
HENRY	257	93-6	25-0	13-11	Brown & Bell, New York	1822	1827-1832
MACON	359	110-0	27-0	13- 6	C. Bergh & Co., New York	1827	1827-1836
FLORIAN	335	99-0	26-3	14- 7	Fickett & Crockett, New York	1823	1828-1832
TYBEE	298	104-6	25-2	12- 8	S. Grice, Philadelphia	1829	1830-1832

The pioneer ship of the New York-Savannah packet line (which saw two years' service as a general trader and four years' as a coastal packet before she was transferred in 1827 to the Vera Cruz line) was not the vessel that in 1819 achieved renown in sailing and steaming across the Atlantic and in being the first vessel with steam power (in this case merely auxiliary power) to cross the Western Ocean. The coastwise packet *Savannah* was built three years after her namesake's famous transatlantic voyage, and her first passage as a packet between New York and Savannah was made five years following the arrival in Liverpool of "the smoking *Savannah*" that, notwithstanding her side wheels, was first reported as "an American ship on fire."

Two ships that entered the Savannah packet line trade in 1827 due to Whitlock's influence were the *Howard* (336 tons) from the New York-Havre Second Line and the *Henry* (257 tons) from the Havre Old Line. The *Henry* had the distinction of being the smallest ship ever placed in the transatlantic packet service, but she was kept in the Havre run for nearly four years (1823-1826), after which she served five years (1827-1832) in the Savannah Line and then entered the South American trade. No ship as small as the *Henry* was put in any of the major New York coastal packet lines after the *Henry's* entry in the service in 1827. The *Howard* gave good satisfaction as a New York-Havre sailing packet for nearly five years (1823-1827), and she was as fast as any transatlantic Havre packet of her day, averaging 36 days for her westward passages to New York—which was eight days better than the 44-day average of the *Henry*.

The *William Wallace* (228 tons) was wrecked on Egg Harbor Beach, New Jersey, on August 21, 1825, after about a year's service in the New York-Savannah packet line. The *Louisa Matilda* (313 tons) was wrecked on Boddy's Island, North Carolina, on August 24, 1827, after three years' packet service, and the *Belle* (340 tons), built in New York in 1833, was also wrecked on Boddy's Island, North Carolina, on August 15, 1836, after she had discontinued regular service in the line; all three vessels were the victims of August southern (or Gulf) hurricanes. The *Milledgeville* of 399 tons, built in New York in 1835, ran four years in the Savannah packet service and was wrecked twenty miles north of Cape Hatteras on October 23, 1839.

The Savannah line packets that were transferred from 1839 to 1841 to the New Orleans packet lines were:

Name of Packet	Tonnage	Dimensions Feet and Inches: Length	Beam	Depth of Hold	Builder	Year Built	Period of Packet Service: Savannah	New Orleans
LOUISA	590	137-2	29-4	14-8	J. Williams, New York	1832	1832-1838	1839-1843
OCMULGEE	460	119-4	29-4	18-6	Smith & Dimon, New York	1835	1836-1839	1839-1844
OCONEE	460	119-4	29-4	18-6	Fickett & Thomas, New York	1835	1836-1839	1839-1845
TRENTON	427	117-0	28-7	16-9	Fickett & Thomas, New York	1837	1837-1839	1841-1842
AUBURN	427	117-0	28-7	16-9	Fickett & Thomas, New York	1837	1837-1839	1839-1847
GASTON	456	120-6	29-0	15-6	Smith & Dimon, New York	1838	1838-1841	1841-1845

The only Savannah packets to go into the whaling trade were the *Macon* (359 tons), which, after nine years in the packet service and three years as a general trader, made whaling voyages out of Holmes Hole, Mass., during the years 1839-1844, and the *Ocmulgee* (460 tons), which, after three years of packet service in the Savannah line and five years in the Louisiana & N. Y. Line, operated as a whaler nearly nineteen years (1844-1862), or until, when twenty-seven years old, she was captured and burned in 1862 during the Civil War, off the Azores, by the Confederate commerce raider *Alabama*.

The *Oconee,* sister of the *Ocmulgee,* was wrecked on Stirrup Key, Bahamas, in March 1845 after some nine years' service as a coastal packet, over three years in the Savannah line, and six years in the New York-New Orleans service. The *Trenton* was wrecked on Man o' War Key, Bahamas, in December 1842 after five years' service as a Savannah and New Orleans packet, and the *Auburn* was wrecked on Barnegat Beach, New Jersey, on September 25, 1847, after sailing ten years in similar coastal packet lines. In this catastrophe seventeen lives were lost.

The Savannah-to-New York sailing packets averaged 7.3 days on their northbound passages, and Albion, recording 456 of such runs (1824-1840), shows 7 passages of 3 days, 30 of 4 days, and 66 of 5 days. The longest northbound run occupied 36 days, the next took 22 days, and there was 1 passage of 18 days, 2 of 17 days, 1 of 16 days, and 35 that required from 11 to 15 days. Sixty-nine per cent of all the passages north occupied 5 to 8 days, with about eight per cent better than 5 days and about eighteen and a half per cent in from 9 to 12 days.

Of twenty ships that entered the Savannah service during the years 1824-1838 inclusive, on which Albion records length of passages, five are credited with runs of 3 days, seven of 4 days, four of 5 days, and four of 6 days—all port to port on the northbound run. The passage records of these ships are as follows:

Name	Tonnage	Period	Length of Service Years	Passages in Days Average	Shortest	Longest
OCONEE	460	1836-1839	4	5.3	4	7
WILLIAM WALLACE	228	1824-1825	2	6.2	4	10
TRENTON	427	1837-1839	3	6.5	5	8
LOUISA MATILDA	313	1824-1827	3	6.6	4	10
LOUISA	590	1832-1838	6	6.7	5	10
NEWARK	306	1834-1845	10	7	5	12
CELIA	338	1833-1842	9	7	3	12
HENRY	257	1827-1832	5	7	3	12
OCMULGEE	460	1836-1839	3	7	6	9
EMPEROR	302	1824-1837	13	7.1	3	13
FLORIAN	335	1828-1832	4	7.2	3	14
SAVANNAH	248	1824-1827	3	7.4	4	15
ANGELIQUE	420	1836-1838	2	7.6	4	17
BELLE	340	1833-1834	1	7.7	3	22
STATIRA	253	1825-1834	9	7.8	5	15
MACON	359	1827-1836	9	7.9	4	15
AUGUSTA	236	1824-1827	3	8	4	15
HOWARD	336	1827-1828	2	8.4	6	12
MILLEDGEVILLE	399	1835-1839	4	8.6	6	13
TYBEE	298	1830-1832	2	9.9	6	36

The New York-Savannah coastwise sailing packets ranged from 228 tons to 590 tons, the four largest and the four smallest ships in this service being as follows:

Name	Tonnage	Length Ft.	Year Built	Year Entered Service	Service Record of Runs in Days Fast	Slow	Average
A. *Smallest Ships*							
WILLIAM WALKER	228	87	1822	1824	4	10	6.2
AUGUSTA	236	86	1821	1824	4	15	8
SAVANNAH	248	86	1822	1824	4	15	7.4
STATIRA	253	94	1825	1825	5	15	7.8
B. *Largest Ships*							
LOUISA	590	137	1832	1832	5	10	6.7
OCONEE	460	119	1835	1836	4	7	5.3
OCMULGEE	460	119	1835	1836	7	7	7
GASTON	456	121	1838	1838	5	10	7.5

The Mobile Line

Mobile, about thirty-five miles up a roomy bay (some eight to twelve miles wide), on the north shore of the Gulf of Mexico, and at the junction of two rivers—the Tombigbee and Alabama—draining a good cotton-growing country, naturally became an export cotton port, but it was late in developing. The region was not opened up as a territory until 1818 and, though included technically in the Louisiana Purchase from France in 1803, was actually held by Spain until 1812 and was not an undisputed part of the United States until the Florida Purchase from Spain in 1819. New Yorkers dominated the Alabama cotton trade from the start, and Mobile passed Savannah and equaled Charleston as a port in the late thirties. However, its foreign business was almost entirely export, as its imports reached it by way of New York—a natural result of triangle trade.

The Mobile line was organized by Elisha D. Hurlburt in the fall of 1825 with three Connecticut-built ships—*Henry Hill* (192 tons), *Extio* (278 tons), and *Indiana* (306 tons). Eleven other ships were added to the "line" during the years 1827-1839, but because of their erratic schedules little can be said, with definiteness, about them except that six (*Elisha Denison* of 359 tons, *Tuskina* of 420 tons, *Alabamian* of 384 tons, *Lorena* of 527 tons, *Hector* of 557 tons, and *Cotton Planter* of 501 tons) changed from the packet to the cotton triangle trade operating under the same owners; that the *Matilda* (312 tons) was wrecked on Isabella Shoals near Havana on November 27, 1837, and that the *Russell Baldwin* was wrecked on the Island of Abaco, Bahamas, in November 1838. The average tonnage of Mobile line packets entering the service prior to 1830 was 296 tons (for six ships) and after 1830, 443 tons (for eight ships). The largest vessels in the run were the *Hector* of 557 tons, built in 1833, the *Lorena* of 527 tons, built in 1832, and the *Cotton Planter* of 501 tons, built in 1838. Twelve of the fourteen Mobile line ships (i.e., 84½ per cent) were built in Connecticut and the other two, the *Alabamian* of 384 tons and the *Matilda* of 312 tons, in New York. The only ships to operate more than three years in the Mobile line were the *St. John* of 397 tons for eleven years (1829-1840), the *Extio* of 278 tons for seven years (1826-1833), the *Junior* of 377 tons for seven years (1831-1838), and the *Indiana* of 306 tons for six years (1826-1832).

Hurlburt was an opportunist operator of ships. He organized packet lines and then ran the vessels of the "lines" at such times, to such ports, and over such routes as seemed to promise the greatest return over a period of time. He inaugurated a line of packets sailing to and from the west Florida, new Gulf port of Appalachicola, which tapped a rich cotton country, and for years there was a mix-up between Mobile and Appalachicola packets. The "packet" ships engaged at times in the cotton triangle trade, and direct arrivals at New York became scarcer, the ships often reaching the northern port from Liverpool, Havre, Antwerp, Amsterdam, Rotterdam, or Mediterranean ports. Not much Mobile cotton was taken to Europe via New York, but Mobile was kept dependent upon New York for its needed import goods. Hurlburt even announced the forming of another New York-Havre packet line, but it was soon found that his Havre "packets" returning to New York were just as likely to have cleared from some other continental port as from Havre. Albion says that Hurlburt, in the operation of his "packet" ships, may have found that "the principle of regularity did not pay—he kept advertising lines and then performing otherwise." But Hurlburt was not the only erratic Mobile "packet" ship-operator, for Ripley, Center & Company, another New York firm interested in the Mobile trade, advertised packet sailings, and its quasi-packet vessels were even worse than the Hurlburt ships as far as regularity and reliability of sailings and compliance with the fundamentals of the packet service were concerned.

Albion, in SQUARE-RIGGERS ON SCHEDULE, records 166 northbound coastal passages from Mobile to New York during the years 1826-1840. These passages averaged 17.7 days and ranged from 10 to 50 days each. There were 11 made in 12 days or better, 10 in 13 days, 18 in 14 days, and 17 in 15 days. The three longest passages occupied 50, 47, and 36 days, respectively; there were two trips of 28 and 27 days each, one of 26 days, one of 24 days, and three of 23 days. About seventy per cent of all the northbound passages were made in from 14 to 20 days, with twelve per cent in from 21 to 24 days and about twelve and two-thirds per cent in from 10 to 13 days.

Of the thirteen ships placed in the Mobile service during the years 1826 to 1837 inclusive, of which speed records are available, three are credited by Albion with runs of 10 days, two of 11 days, two of 12 days, three of 13 days, and two of 14 days—all port to port on the northbound passage. The speed records of these ships are as follows:

Name	Tonnage	Period	Length of Service Years	Passages in Days		
				Average	Shortest	Longest
RUSSELL BALDWIN	464	1835-1838	3	14.5	10	20
ELISHA DENISON	359	1827-1830	3	16.1	11	20
HECTOR	557	1836-1838	2	16.3	13	20
INDIANA	306	1826-1832	6	17.3	12	28
LORENA	527	1832-1833	2	17.3	13	22
TUSKINA	420	1831-1832	2	17.4	14	27
EXTIO	278	1826-1833	7	17.8	10	36
ALABAMIAN	384	1832-1835	3	18.2	12	22
JUNIOR	377	1831-1838	7	18.8	10	27
ST. JOHN	397	1829-1840	11	19.1	13	50
HENRY HILL	192	1826-1829	3	19.9	16	28
AMELIA	244	1827-1830	3	20.1	14	47

The *Elisha Denison, Tuskina, Alabamian, Lorena,* and *Hector* continued under the same owners in the so-called cotton triangle trade. The long voyages of the *St. John* (50 days) and of the *Amelia* (47 days) in the run from New York to Mobile (but little more than half the distance of a transatlantic voyage) are conspicuous.

The New York-Mobile coastwise sailing packets ranged from 192 tons to 557 tons, the three largest and the three smallest ships in this service being as follows:

Name	Tonnage	Length Ft.	Year Built	Year Entered Service	Service Record of Runs in Days		
					Fast	Slow	Average
A. *Smallest Ships*							
HENRY HILL	192	80	1822	1826	16	28	19.9
AMELIA	244	89	1825	1827	14	47	20.1
EXTIO	278	94	1825	1826	10	36	17.8
B. *Largest Ships*							
HECTOR	557	134	1833	1836	13	20	16.3
LORENA	527	126	1832	1832	13	22	17.3
COTTON PLANTER	501	125	1838	1839	12	25	18

The New Orleans Fleet of Packets

The New York-New Orleans sailing packet lines, which gradually with the years grew to be the most important and longest-distance domestic coastal packet service in the world, were initiated in 1821—a year before the Charleston Ship Line, three years before the Savannah line, the Black X and Red Swallowtail London lines, and three years after the inauguration of the service of the pioneer transatlantic Black Ball (Liverpool) Line. New Orleans, lying about a hundred miles up the Mississippi River from the Gulf of Mexico and some seventeen hundred fifty nautical miles from New York, was early (soon after the Louisiana Purchase) "invaded by New Yorkers and Yankees," who gradually gained the ascendancy in commercial matters over the original French (and Spanish) mercantile houses. New Orleans then rapidly forged to the lead as a great southern—and cotton—port. In the early twenties, its volume of business as a port was practically the same as that of Charleston, but by the forties it exceeded even New York for a while in the volume of its exports. Because of the length of the run (usually two and a half or three weeks), the nature of the route, and the wealth, commercial prominence, and volume of trade of the two terminal cities, the packets on the New York-New Orleans run rivaled for many years—in size, quality, and performance—the ships engaged in transatlantic service. When the *Mississippi* of 647 tons, *Yazoo* of 677 tons, and *Shakespeare* of 747 tons (a ship that was later to see service as a transatlantic packet in the New York-Liverpool Dramatic Line) appeared in the New York-New Orleans packet service (the first two in 1833 and the latter in 1835), it is interesting to note that the largest packet ships in the other established lines, both transatlantic and coastal, were as follows:

Line	Name of Packet	Tonnage	Year Built	Builder	Entered the Service
Black Ball, Liverpool	ENGLAND (also ran in Red Star Line in 1834)	729	1834	Smith & Dimon, New York	1835
Red Star, Liverpool	UNITED STATES	650	1833	Smith & Dimon, New York	1833
Blue Swallowtail, Liverpool	INDEPENDENCE	732	1834	S. Smith, New York	1834
Black X, London	TORONTO and WESTMINSTER (sister ships)	631	1835	C. Bergh & Co., New York	1835
Red Swallowtail, London	ST. JAMES	641	1835	Webb & Allen, New York	1835
Old Line, Havre	SYLVIE de GRASSE	641	1833	D. & H. Burgess, Hartford, Conn.	1834
Second Line, Havre	UTICA	525	1833	C. Bergh & Co., New York	1833
Whitlock, Havre	POLAND	546	1832	New York	1833
Charleston Ship	ANGELIQUE	420	1833	New York	1833
Savannah	LOUISA	590	1832	J. Williams, New York	1832
Mobile	LORENA	527	1832	Essex, Conn.	1832

In 1821, John W. Russell advertised the sailing of his three brigs, *Phoebe Ann* (244 tons) and *Edward* and *Fanny* (each of 254 tons), in regular packet service between New York and New Orleans. These brigs were each some 87½ ft. long, about 25 ft. beam, and 13¼ ft. deep. The *Phoebe Ann* and *Edward* were built by Fickett & Crockett, New York, in 1819 and 1821, respectively, and the *Fanny* by G. & J. Fickett, New York, in 1820; they ran in the line as packet brigs for a period of from two to three years. In 1822, Russell placed his first full-rigged ship, the *William* (292 tons), in the packet service, and by 1825 ships had entirely replaced brigs in the Russell (New Orleans) Old Line, which for several years ran its vessels on schedule but not with uniform, regular sailings. This line, which operated until 1834, had the following packet ships running in its service:

Name of Packet	Tonnage	Dimensions—Feet and Inches: Length	Beam	Depth of Hold	Builder	Year Built	Period of Packet Service
WILLIAM	292	94-0	25- 2	14- 0	Fickett & Crockett, New York	1822	1822-1825
VIRGINIA	355	100-0	27- 3	14-10	S. & F. Fickett, New York	1823	1823-1827
FLORIAN	335	99-0	26- 3	14- 7	Fickett & Crockett, New York	1823	1823-1825
FRANCES	367	105-0	22- 2	14- 1	S. & F. Fickett, New York	1824	1824-1831
AZELIA	383	106-9	28- 6	14- 3	S. & F. Fickett, New York	1825	1825-1831
RUSSELL	386	107-0	28- 6	14- 0	S. & F. Fickett, New York	1825	1825-1832
JOHN LINTON	413	117-0	28- 0	14- 0	S. & F. Fickett, New York	1827	1828-1834
DE WITT CLINTON	417	118-0	28- 0	14- 0	New York	1828	1828-1832
CINCINNATI	457	121-6	28-10	14- 5	Smith & Dimon, New York	1831	1831-1834
SARATOGA	542	131-4	30- 2	15- 1	Webb & Allen, New York	1832	1832-1834

The *De Witt Clinton* was wrecked in May 1832, when she was four years old. The *Virginia* went to the Vera Cruz line, the *Florian* to the Savannah line, and the *Saratoga* was transferred to the rival Holmes Line when the Russell line suspended operation. Four of the ships became whalers: *Frances* (1831-1846), *Russell* (1833-1847), *Cincinnati* (1845-1860) after three years as a packet and eleven years as a regular trader, and *Saratoga* (1845-1860) after thirteen years as a packet. The *Azelia* was put on the South American run as a regular trader, and the *John Linton* did service as a transient.

After the brig *Phoebe Ann* was withdrawn by Russell from the packet service in 1823, her captain, Silas Holmes, decided to organize a New York-New Orleans packet line of his own. In 1824 he inaugurated this service with the brig *Edwin* (195 tons), built by C. Bergh, New York, in 1823, and the three ships *Chancellor* (276 tons), *Lavinia* (309 tons), and *Crawford* (289 tons); the first two of these ships were built at Chatham, Conn., in 1823, and the *Crawford* was launched by H. Eckford, New York, in 1824. (She went ashore on the Bahama Banks on October 1, 1825, and was taken over and sold by underwriters.) None of the original quartet of the Holmes Line operated in the run after 1827; the *Edwin* and *Chancellor* went into transient trade and the *Lavinia* to the Vera Cruz line. The Holmes Line of packets continued actively in business until the Civil War, but as far as new tonnage placed on the run is concerned, the last thirty-six years of operation can be divided into four periods, with the vessels *entering* the service described as follows:

Period	Number of Ships Put in Line	Average Tonnage per Ship	Largest Ships	Smallest Ships	Average: Year Built	Length of Service in Line	Length of Passage
						Years	*Days*
1825-1830	5	396	KENTUCKY I (415 tons) TENNESSEE (415 tons)	LOUISIANA (344 tons) TALMA (391 tons)	1826	7	19.6
1831-1840	8	563	PANTHEA (641 tons) KENTUCKY II (629 tons)	ALABAMA (474 tons) VICKSBURG (479 tons)	1833	11	17.6

Continued on next page.

Period	Number of Ships Put in Line	Average Tonnage per Ship	Largest Ships	Smallest Ships	Average Year Built	Average Length of Service in Line	Average Length of Passage
						Years	*Days*
1841-1847	5	715	GALENA (881 tons) MEMPHIS (798 tons)	LOUISA (590 tons) SILAS HOLMES (644 tons)	1841	12	16.4
1848-1856	6	730	ST. LOUIS (938 tons) MAID OF ORLEANS (934 tons)	ANDOVER (484 tons) PACIFIC (531 tons)	1849	7½	18.0
Total—1825-1861	24	602	ST. LOUIS (938 tons)	LOUISIANA (344 tons)	1837	9½	17.7

The Holmes Line was the first New Orleans packet service to announce fixed and regular dates of sailing each month, and in 1826, with six ships making four round trips each per year, Holmes fixed the sailing dates of the packets from each terminal port as the first and fifteenth of every month. Transatlantic packets at the time were making three round trips a year, and ships in the New York-Charleston or Savannah service one round trip per month, or twelve each year.

It is known where twenty-seven of the twenty-eight Holmes packets were built, and of these, twenty-two, or 81.5 per cent, were built in New York, three in Connecticut, one in Newburyport, Mass., and one at Bath, Maine. The Ficketts and Crockett, of New York, who built either ten or eleven of the New Orleans Old (Russell) Line packets (about eighty-five per cent of them), constructed two and possibly four of the Holmes Line packets; of the other Holmes packets built in New York, Bergh launched six, Brown & Bell (or J. Bell) five, and the Webb yard four. Three of the New Orleans Holmes Line packets were wrecked in service: *Crawford* of 289 tons (as before stated) on the Bahama Banks, October 1, 1825; *Kentucky I* of 415 tons, fifty miles north of Cape Florida, November 20, 1832; and *Kentucky II* of 629 tons at Bimini, Bahamas, September 9, 1838. The *Illinois* (413 tons), after seven years in the packet trade, became a whaler and operated in that industry for forty-three years (1833-1876) as did the *Saratoga* (542 tons) for over fifteen years (1845-1860), following which she was sold at Barcelona in 1863. The *St. Louis* of 938 tons, built by J. Bell, New York, in 1850, operated nine years in the Holmes Line and has historic importance, being the largest vessel to serve as a coastal packet in any line at any time.

The last vessel built as a coastal packet and the last to enter the service was the *Glad Tidings* of the Holmes Line. This sizable ship of 898 tons register (length 175 ft., beam 34½ ft., depth 22¾ ft.) was built by Roosevelt & Joyce, New York, in 1856 and operated in packet service for some two and a half years (1856-1858). When the Holmes Line terminated its service (because of the Civil War), the ships then in operation—running on a monthly schedule—were the *Sultana* (662 tons), *Galena* (881 tons), and *Andover* (484 tons). The *Silas Holmes* (644 tons), *Maid of Orleans* (934 tons), and *Pacific* (531 tons) had been withdrawn from the service in 1860 as war clouds gathered and trade declined. The *Silas Holmes,* built in 1845 by Webb, New York, is credited with a 9-day passage—the fastest sailing packet run between New Orleans and New York. However, the *Sultana,* built in 1844 by Brown & Bell, New York, has the best average time of passage, not only of any Holmes ship but also of any New Orleans packet. She sailed in the service for seventeen years, from 1844 to the suspension of the line in 1861, made a run north in only 10 days, and had an average length of passage of only 14.4 days—beating the crack ships of the other New Orleans lines as indicated by the following sailing records:

Name of Packet	Line	Year Built	Builder	Entered Service	No. of Years in Line	Passage in Days Average	Shortest	Longest
SULTANA (662 tons)	Holmes	1844	Brown & Bell, New York	1844	17	14.4	10	21
HUNTSVILLE (522 tons)	La. & N. Y.	1831	S. & F. Fickett, New York	1831	13	15.1	10	28
ST. CHARLES (798 tons)	La. & N. Y.	1847	Perrine, Patterson & Stack, New York	1848	13	15.2	10	21
MEMPHIS (798 tons)	La. & N. Y.	1839	Smith & Dimon, New York	1839	4	15.4	12	20
MEMPHIS (same ship in two lines)	Holmes	1839	Smith & Dimon, New York	1846	10	15.7	12	23
ST. LOUIS (938 tons)	Holmes	1850	J. Bell, New York	1850	9	15.7	12	20
OCONEE (460 tons)	La. & N. Y.	1835	Fickett & Thomas, New York	1835	6	16.0	10	27
OCMULGEE (460 tons)	La. & N. Y.	1835	Smith & Dimon, New York	1835	5	16.0	10	28

The "Speed Queen" *Sultana* (662 tons) and the *Maid of Orleans* (934 tons) were both sold to the British during the Civil War.

Of 1,395 northbound coastal passages from New Orleans to New York reported by Albion and covering the years up to 1858, 18 were in 10 days or less (only one in 9 days), 78 in 11 or 12 days, 77 in 13 days, and 14 in over 30 days; the longest passages were one of 51 days, two of 41 days, one of 38 days, two of 37 days, and one each of 35 and 34 days. The average length of all the northbound passages was 18 days.

John Laidlaw operated a line of ships between New York and New Orleans for a time around the mid-twenties, but they did not operate with sufficient regularity on a schedule to deserve the name of packets. Laidlaw gained some notoriety, however, by an endeavor "to snub" New Orleans, have his ships towed past that city up the river to Natchez, and make that Mississippi town the southern (or western) terminal of his quasi-line.

The New York-New Orleans "Old," or "First," Line and the Holmes Line met real competition in the packet service between New York and the Mississippi River—and far South—when the Louisiana & New York Line (or "Louisiana Line") was organized in 1831 and five newly built ships entered the service in the fall of that year. The ships forming the new fleet had been especially designed for the service and were of moderate size, with flat bottoms and shallow draft, suitable for service to a Mississippi port over the bars of the delta at the mouth of the river, which was causing much trouble for ships of standard design; for, while the demand was steadily growing for larger ships, the water over the bars at the mouth of the Mississippi was becoming shallower. It was common for ships to be delayed due to low water and for vessels to be towed through the soft mud. The five pioneer ships of the "Louisiana Line" were built from the same general specifications by four different New York builders. S. & F. Fickett built two, the *Louisville* of 516 tons and the *Huntsville* of 522 tons; Bergh built the *Nashville* of 513 tons, Webb & Allen the *Natchez* of 523 tons, and Lawrence & Sneden the *Creole I* of 542 tons. At the time that they were built, these packets were larger than any others in the trade, the biggest ships of the Holmes Line being the *Alabama* of 474 tons, built in 1830, and the *Kentucky* and *Tennessee* each of 415 tons, built in 1827; the largest ships of the Old Line were the *Cincinnati* of 457 tons, built in 1831 (the same year as the new "Louisiana Line" ships) and the *De Witt Clinton* of 417 tons, built in 1828. The five new ships were each about 131 ft. long, 29 ft. 8 in. beam, and 14 ft. 10 in. deep.

Whereas these flat-floored ships proved to be far better sailers and sea boats than originally anticipated and two of them were destined to make deep-sea speed records, only two remained in the "Louisiana Line" packet service for any length of time—the *Louisville* for sixteen years (1831-1847) and the record-making and extremely popular *Huntsville* for thirteen years (1831-1844). The *Nashville,* after three years, went over to the Holmes Line, where she operated without distinction for seven years—or ten years, in all, in the New York-New Orleans packet service. The *Natchez,* which was later to become famous and make speed records in the China trade, was put in South American service in 1833 (after two years as a New Orleans packet), and after twenty years of noteworthy, fast trading she embarked in the whaling trade, where speed was relatively unimportant. For five years (1851-1856), she sailed out of New Bedford and was lost while whaling in Potters Bay, Sea of Okhotsk, in 1856. The *Creole I,* the slowest of the five "sisters," was taken off the line in 1833, after two years in the service, and became an ocean transient, or sailing tramp. It is evident that the five ships, although of the same size and built to the same specifications, were not laid down from the same lines (or model). The Ficketts and Webb & Allen produced the fastest and most successful ships, but of the five, only one—the *Creole I,* built by Lawrence & Sneden—was a failure, and she, the largest of the quintet, was evidently modeled too full for the requirements of the trade.

In 1832, Edward Knight Collins, who has been referred to as one of the ablest men in the history of the American merchant marine and who was to enter the transatlantic packet trade with his New York-Liverpool Dramatic Line in 1836-1837, took over the management of the new "Louisiana Line" and continued in charge until the late forties. The New Orleans line was not Collins' first packet line, for with his father, I. G. Collins, he had inaugurated a monthly packet service between New York and Vera Cruz in 1827 and had operated the line with success for five years. The New Orleans Old Line could not withstand the competition of the Holmes and Collins lines and went out of business in 1834. Only three Old Line ships were in the service after 1832, and when the line ceased operations, two of them went into general trade, the largest and newest vessel of the Old Line, the *Saratoga,* being acquired by the Holmes Line. For five years (1834-1838), Holmes and Collins shared the New Orleans packet business, but in 1839 six of the Savannah line packets were taken over to the Mississippi. The Collins "Louisiana Line" took four of them (*Oconee* of 460 tons, *Ocmulgee* of 460 tons, *Louisa* of 590 tons, and *Gaston* of 456 tons), and the other two (*Auburn* of 427 tons and *Trenton* of 427 tons) formed part of the fleet of the newly formed New York & New Orleans Line. This was the last of the New York-New Orleans packet lines, which commenced its service in 1839 and continued to operate in competition with the Holmes and Louisiana & New York lines until the Civil War.

Following Edward K. Collins' assumption of the management of the "Louisiana Line," two ships were added to the service in 1833 and two in 1835, and six ships were operating in the line from 1835 to 1838. The *Mississippi* (647 tons), built by Brown & Bell, and the *Yazoo* (677 tons), built by Fickett & Thomas, each in New York in 1833, ran steadily in the line and gave good satisfaction for twelve years, 1833-1845. The *Shakespeare* (747 tons) and *Vicksburg* (479 tons) were built by Brown & Bell, New York, in 1835. The *Shakespeare,* after a year in the New Orleans run, entered the transatlantic packet service and operated during the years 1836-1838 in Collins' new Liverpool Dramatic Line, following which she ran for another year (1839-1840) in the Louisiana & New York Line. The *Vicksburg,* after four years in the Collins New Orleans line, operated for eighteen years (until 1857) in the companion Holmes Line. In 1845 the ships *Oswego* of 647 tons and *Clifton* of 599 tons joined the line. These vessels are of interest, primarily, as they were the only New York packets (ocean or coastwise) built at Medford, Mass., Boston's important shipbuilding suburb. The *Oswego,* launched in 1840, was slow; she served seven years in the "Louisiana Line" and in 1852 went over to the New York & New Orleans Line, where she ran for three years. The *Clifton,* built in 1838, was a much faster ship, averaging about four days per passage better than the *Oswego,* and served with satisfaction in the line for fifteen years (1845-1860). After 1845, nine more ships were put in the "Louisiana Line" New York service, but only one (the *St. Charles* of 798 tons) was built for the line, and only one other, the *Toulon* of 744 tons (built at Waldoboro, Maine, in 1852), was new when she entered the service. These vessels can be divided into two period groups as follows:

Period	Number of Ships Entering Service	Average Tonnage	Largest Ships		Smallest Ships		Average		
			Name	Tonnage	Name	Tonnage	Year Built	Length of Service	Length of Passage
								Years	*Days*
1847-1850	5	699	ST. CHARLES	798	HUDSON	623	1839	6½	17.6
			HERO	749	QUEBEC	653			
1851-1854	4	697	TOULON	744	WESTMINSTER	631	1842	5¼	18.9
			WELLINGTON	726	LIBERTY	689			
Total 1847-1854	9	698	ST. CHARLES	798	HUDSON	623	1840	6	18.1
			HERO	749	WESTMINSTER	631			

The *St. Charles,* built by Perrine, Patterson & Stack, New York, was a very fast ship and for thirteen years fought for speed honors among the thirty-three sailing packets operating in the New York-New Orleans run during her period of service. Three of the ships came to the "Louisiana Line" from the transatlantic lines—the *Quebec* (653 tons) in 1847 and the *Wellington* (726 tons) in 1853 from the London Red Swallowtail Line and the *Westminster* (631 tons) in 1851 from the London Black X Line. The *Southerner* (670 tons), which ran in the line from 1848 to 1853, had previously been a regular trader, operating between New Orleans and New York as a feeder and distributor in conjunction with the New York-Liverpool New Line, which had a four-ship service in the Atlantic packet trade during the period 1843-1849.

The fourth New York-New Orleans sailing packet line—known as the New York & New Orleans Line—was formed in 1839 (eight years after the Louisiana & New York Line) to utilize, in conjunction with the "Louisiana Line," the packet ships that went to the Mississippi when the New York-Savannah line discontinued operation, and this line, with the Holmes and "Louisiana" lines, continued sailing packet service between New York and New Orleans until the Civil War. Of the first five ships put in service by the New York & New Orleans Line, two (the *Auburn* and the *Trenton,* each of 427 tons) had been operated in the Savannah line, and three (the *St. Mary's* of 444 tons, the *Fairfield* of 680 tons, and the *Frankfort* of 799 tons) were new ships that had been built by Fickett & Thomas, New York, in 1838-1839 for the Savannah line, but were quickly transferred to the New Orleans run. The *John Minturn* (398 tons) and *Union* (544 tons) were added to the line in 1842 to replace the *Frankfort* and *Trenton,* which were wrecked that year—the former at Little Egg Harbor, New Jersey, and the latter on Man o' War Key, Bahamas. The latest New Orleans packet line was very unlucky in marine disasters, for five of its first six ships were wrecked —an amazing record of ill-fortune. In addition to the loss of the *Frankfort* and *Trenton* in 1842, the *Fairfield* (680 tons) was wrecked at Elbow Key, Bahamas, September 16, 1844, the *John Minturn* (398 tons) went ashore and was broken up on Squam Beach, New Jersey, February 15, 1846, with the loss of twenty-eight lives, and the *Auburn* (427 tons) was wrecked at Barnegat Beach, New Jersey, on September 25, 1847, and seventeen lives lost. The *Wabash* (398 tons), built at Stonington, Conn. (probably a sister to the *John Minturn*), was placed in the service in 1844 and operated six years; but, although—like the *"Minturn"* —the *Wabash* was a fast ship for her size, she was far too small for the demands of the New Orleans packet trade. From 1845 to the end of the service, the following ships were placed in the line, but only the first two, the *Indiana* (607 tons) and the *Creole II* (767 tons), were built for the run, and two of the ships, the *Toronto* (631 tons) and the *Mediator* (660 tons), were old London Black X Line packets.

Name of Packet	Tonnage	Dimensions Feet and Inches Length	Beam	Depth of Hold	Builder	Year Built	Period of Service in Line
INDIANA	607	135-2	31-6	20-7	New York	1844	1845-1861
CREOLE II	767	150-7	33-5	16-6	New York	1847	1847-1861
ATLANTIC	736	147-5	33-3	20-0	J. Williams, New York	1846	1848-1858
TORONTO	631	135-3	32-2	20-5	C. Bergh & Co., New York	1835	1848-1851
MEDIATOR	660	138-4	32-6	21-0	Westervelt & Roberts, New York	1836	1848-1860
OSWEGO	647	154-4	31-2	15-3	Medford, Mass.	1840	1852-1855
FAR WEST	598	144-4	30-0	15-0	Newburyport, Mass.	1846	1854-1861

These seven ships, collectively, operated sixty-five ship-years in the service (an average of nine and a third years per vessel), and the average length of northbound passage was 18.8 days. The fastest of the septet was the *Atlantic,* which averaged 16.4 days on her passages over a period of ten years (1848-1858), the *Mediator* following with an average of 16.9 days for twelve years (1848-1860), and this after the vessel had averaged 36 days on her transatlantic westbound voyages in the London Black X Line for a similar period of twelve years (1836-1848). The last four ships to operate in the line were the *Indiana, Creole II,* and *Far West,* which ran up to the time of the war in 1861, and the *Mediator,* which was pulled off at the end of 1860. The *Toronto,* an old London Black X packet, was wrecked off Cuba on January 2, 1851, when sixteen years old and after three years' service in the New Orleans line. The *Far West* was sold to Newport, Wales, owners during the Civil War.

The New Orleans packets at no time ran with the regularity of the Charleston packets for twelve months in the year. The freight business at all cotton ports was seasonal, with cotton being shipped in quantity from October to April, and the passenger business was predominately northbound in the early summer and southbound in the fall. Frequently, New Orleans packets made voyages to Europe in the slack summer season, sometimes direct from the southern port and at times via New York; returning, they would bring a load of emigrants from Europe to New York. It is said that this summer practice of the New Orleans packets (of taking a load of cotton to Europe and returning with emigrants via New York) led to the cotton triangle trade and finally broke up a quasi-line of New York-Mobile packets.

The New York-New Orleans coastwise sailing packets ranged from 195 tons to 938 tons (the largest American coasting packet), the seven largest and the seven smallest ships in this service being as follows:

A. *Smallest Vessels*

Name	Tonnage	Dimensions in Feet Length	Beam	Year Built	Year Entered Service	Service Record of Runs in Days Fast	Slow	Average
EDWIN (brig)	195	85	23	1823	1824	—	—	—
PHOEBE ANN (brig)	244	87	24	1819	1821	—	—	—
EDWARD (brig)	254	88	25	1821	1821	—	—	—
FANNY (brig)	254	88	25	1820	1821	—	—	—
CHANCELLOR	276	96	25	1823	1824	13	20	17.7
CRAWFORD	289	101	25	1824	1824	15	25	21
WILLIAM	292	94	25	1822	1822	11	25	18

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B. *Largest Ships*

Name	Tonnage	Dimensions in Feet		Year Built	Year Entered Service	Service Record of Runs in Days		
		Length	Beam			Fast	Slow	Average
ST. LOUIS	938	161	35	1850	1850	12	20	15.7
MAID OF ORLEANS	934	159	36	1848	1848	12	26	19.2
GLAD TIDINGS	898	175	34	1856	1856	12	23	17.5
GALENA	881	151	36	1846	1846	11	28	17.8
FRANKFORT	799	152	34	1839	1840	15	19	17.3
MEMPHIS	798	154	34	1839	1846	12	23	15.6
ST. CHARLES	798	151	34	1847	1848	10	21	15.2

Of seventy ships placed in this New York-New Orleans sailing packet service and operating during the period 1821-1858 inclusive and herein considered, one is credited with a 9-day run (port to port) on the northbound passage, thirteen with runs of 10 days, eight of 11 days, sixteen of 12 days, seventeen of 13 days, ten of 14 days, three of 15 days, and two of 16 days. The passage records of these vessels are as follows:

Name	Tonnage	Period	Length of Service Years	Passages in Days		
				Average	Shortest	Longest
SULTANA	662	1844-1861	17	14.4	10	21
HUNTSVILLE	522	1831-1844	13	15.1	10	28
ST. CHARLES	798	1848-1861	13	15.2	10	21
MEMPHIS	798	1839-1857	15	15.6	12	23
ST. LOUIS	938	1850-1859	9	15.7	12	20
OCONEE	460	1839-1845	6	16	10	27
OCMULGEE	460	1839-1844	5	16	10	28
FAIRFIELD	680	1839-1844	5	16.2	13	19
HERO	749	1848-1850	2	16.3	10	22
MISSISSIPPI	647	1833-1845	12	16.4	13	23
ATLANTIC	736	1848-1858	10	16.4	11	37
QUEBEC	653	1847-1853	6	16.7	10	27
PANTHEA	641	1839-1844	5	16.7	12	24
JOHN MINTURN	398	1842-1846	4	16.7	13	24
NATCHEZ	523	1831-1833	2	16.7	13	21
CLIFTON	599	1845-1860	15	16.9	12	25
MEDIATOR	660	1848-1860	12	16.9	12	22
ORLEANS	599	1833-1847	14	17.1	11	25
SARATOGA	542	1832-1845	14	17.3	10	25
WABASH	398	1844-1850	6	17.3	12	29
FRANKFORT	799	1840-1842	2	17.3	15	19
ST. MARY'S	444	1839-1849	10	17.4	10	26
SILAS HOLMES	644	1845-1860	15	17.4	9	27
TOULON	744	1853-1858	5	17.5	14	22
AUBURN	427	1839-1847	9	17.6	10	30
ALABAMA	474	1832-1844	12	17.7	12	26
KENTUCKY II	629	1834-1838	4	17.7	11	24
CHANCELLOR	276	1824-1826	2	17.7	13	20
VICKSBURG	479	1835-1857	22	17.8	10	28
GALENA	881	1846-1861	15	17.8	11	28
YAZOO	677	1833-1845	12	17.9	12	30
PACIFIC	531	1851-1860	9	17.9	12	29
GASTON	456	1841-1845	5	17.9	13	25

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Name	Tonnage	Period	Length of Service Years	Passages in Days Average	Shortest	Longest
SHAKESPEARE	747	1835-1840	5	18	12	24
VIRGINIA	355	1823-1827	4	18	14	24
WILLIAM	292	1822-1825	3	18	11	25
TRENTON	427	1840-1842	2	18	13	25
NASHVILLE	513	1831-1841	10	18.1	13	23
ARKANSAS	627	1833-1850	17	18.2	12	27
RUSSELL	386	1825-1832	7	18.2	11	35
FLORIAN	335	1823-1825	2	18.2	16	25
LOUISA	590	1839-1847	9	18.3	14	24
FRANCES	367	1824-1831	7	18.5	12	27
DE WITT CLINTON	417	1828-1832	4	18.5	14	25
LOUISIANA	344	1825-1833	8	18.6	11	29
WELLINGTON	726	1853-1859	6	18.7	14	25
ISAAC ALLERTON	594	1852-1856	4	18.7	13	24
LOUISVILLE	516	1831-1847	16	18.8	12	35
FAR WEST	598	1854-1861	7	18.8	13	28
LAVINIA	309	1824-1827	4	18.8	13	21
ANDOVER	484	1853-1861	8	19	15	26
WESTMINSTER	631	1851-1857	6	19.1	12	33
KENTUCKY I	415	1827-1832	5	19.1	10	28
AZELIA	383	1825-1831	6	19.2	13	29
MAID OF ORLEANS	934	1848-1860	12	19.2	12	26
CREOLE II	767	1847-1861	14	19.3	13	28
UNION	544	1842-1857	15	19.4	13	27
TORONTO	631	1848-1851	4	19.6	14	25
TENNESSEE	415	1827-1834	7	19.7	14	30
CINCINNATI	457	1831-1834	3	19.8	14	27
TALMA	391	1826-1833	7	19.9	13	28
SOUTHERNER	670	1845-1853	5	19.9	13	32
ILLINOIS	413	1826-1833	7	20.6	14	28
LIBERTY	689	1854-1858	4	20.7	10	29
INDIANA	607	1845-1861	16	20.8	11	37
OSWEGO	647	1845-1855	11	20.8	12	33
CRAWFORD	289	1824-1825	2	21	15	25
JOHN LINTON	413	1828-1834	6	21.1	13	29
CREOLE I	542	1831-1833	2	21.5	16	25
HUDSON	623	1847-1854	7	21.6	14	51

A large fleet of steamers operating in the New York-New Orleans service during the years 1903-1907 inclusive showed an average length of the run southbound (and against the Gulf Stream) of 122 hours, with an average speed of 14.02 knots per hour. The S.S. *Momus,* in 1906, made a record run (steaming time) between the ports of 102.5 hours, with an average speed of 16.7 knots per hour. The average speed from Scotland Light to the mouth of the Mississippi delta was 17.2 knots. On the northbound passage, a steamship, by keeping in the middle of the Gulf Stream and getting the benefit of a current that at times is very strong, is capable of speed performances that are not comparative with still-water records or with the voyages of sailing ships. When northbound, the *Momus,* a 16-knot vessel capable of about 18 knots per hour on a spurt, showed a speed in the Gulf Stream—up the Florida coast and heading for Hatteras or Diamond Shoal—for a short period somewhat in excess of 20 knots per hour. The relatively slow average speed of square-rigged sailing packets and their erratic sailing performance in the coastwise service encouraged the substitution of steamboats for the "canvas-backs" in such trade, and for coasting business the steamboat was held to be supreme after the Civil War. Even the slowest steamboats in the early seventies showed an average speed fully twice that of the average of the fastest packets and over three times the average of the slower sailing packets.

Other Southern Packet Lines and Hazards of the Course

In 1829, Silas Burrows, of Stonington, Conn., organized a New York line of packets to Cartagena on the Spanish Main. Three brigs were put in this service, and in the early thirties arrangements were made in conjunction with the Burrows line for mail service to the Pacific side of the Isthmus of Panama "in order to facilitate communication with American whalers operating in the Pacific Ocean." Burrows withdrew from the venture in 1835, and the "line" soon afterwards discontinued operations. About this time, another New York house, B. Aymar & Company, advertised packet service between New York and Jamaica, also St. Croix of the Virgin Islands, and one or two ships with regular, scheduled sailings were operated in this trade for a few years.

An attempt was made in 1829 by Spofford, Tileston & Company to run a packet line between New York and Havana, and in 1834 this firm had two brigs in the service with monthly scheduled sailings. Moses Taylor (later of the New York National City Bank) put a ship and a bark in the New York-Havana packet trade in 1839, and these two lines gave a fortnightly service between the ports. The Havana packets had two-way cargoes and carried a good number of passengers; their trips occupied on an average about 12 days as against 6½ days on the Charleston run, 7½ days to Savannah, and about 18 days to New Orleans or Mobile.

The New York-Vera Cruz line of packets with monthly sailings was inaugurated in October 1827 by I. G. Collins and his son Edward K. The first vessels of the line were the *Savannah* of 248 tons (built at New York in 1822), which had been the pioneer vessel of the New York-Savannah packet line; the *Virginia* of 355 tons, built at New York in 1823 for the New Orleans Old Line; and the *Lavinia* of 309 tons, built at Chatham, Conn., in 1823 for the New Orleans Holmes Line. This New York-Vera Cruz line is of popular interest, for its return cargoes to New York—silver and cochineal—enticed the activity of the prevalent Caribbean Sea pirates, and the ships of this line had to be well armed and manned and were advertised as such in the public press.

Other packet lines trading in West Indian and Gulf of Mexico pirate-infested waters during this period—such as the New Orleans Old, or Russell, Line, the New Orleans Holmes Line, and Hurlburt's Mobile line—also advertised that the ships were "well manned and armed to beat off pirate attack." It has been said that the tactics of these pirates "would make the Barbary corsairs appear as clean-cut sportsmen." Numerous vessels sailing between New York and far southern ports were captured by inhuman buccaneers who in their gory rapacity thought nothing of torture, murder, and "feeding the sharks." In addition to the pirate menace, the Gulf port packet lines had to contend with the hazard of operating in dangerous and not thoroughly charted waters around the Bahamas, Florida, and Cuba, and in the late summer and autumn the ships were subjected to terrific Gulf of Mexico hurricanes that blew with devastating violence toward the southeastern American shore and usually, veering to the north, followed the course of the Gulf Stream past Hatteras. Twelve New Orleans and two Mobile regular packets engaged in the New York run were wrecked when in service: seven on the Bahamas, two off Cuba, one on the Florida coast, one off Hatteras, and three on the New Jersey shore in the vicinity of New York. It was the New Jersey wrecks that resulted in a great loss of life; the *Auburn,* taking seventeen lives, was destroyed by a southern hurricane blowing itself out on the New Jersey coast in September 1847, but the *John Minturn* was driven ashore in February 1846 in a frightful winter gale, and thirty-eight perished out of a total of fifty-one persons aboard. The *John Minturn,* at the time of her loss, had picked up her New York pilot, and it is said that the memorable northeasterly gale of February 1846 "caught in flank the shipping bound for New York" and that "the New Jersey coast was strewn with wrecks and wreckage," ten vessels (including the "*Minturn*") being driven ashore on Squam Beach alone.

The New York-Southern Port Sailing Packet Service

There seems to be some confusion in the statistics that have been compiled of the length of coastal passages as far as the northward (or eastward) and southward (or westward) runs are concerned, and in commenting on average speed no consideration is given to the Gulf Stream or prevailing winds. The Gulf Stream was of great benefit in the northbound passage of every Havana, Mobile, New Orleans, or Gulf of Mexico packet, and when favorable winds augmented a two-or-three-knot-per-hour current that flowed steadily north from off the southeastern Florida coast to Hatteras, the advantage of direction and course was tremendous. Many a vessel has drifted fifty miles during a day in the Gulf Stream. Generally, however, southbound passages were favored by the winds and the northbound by ocean currents. From July to November, any sailing was likely to be detrimentally affected in passage time by a Gulf of Mexico or West Indian hurricane. These hurricanes, while at their worst off Florida and the Caribbean islands, were likely to blow with devastating fury not only to Hatteras but also from there westward across the Atlantic and occasionally up the New Jersey, New York, and New England coasts. Robert G. Albion, in SQUARE-RIGGERS ON SCHEDULE, says:

> The coastal calculations reveal that the packets averaged nearly a hundred miles a day on their northbound trips according to the grand totals for the whole period. Thus, from Charleston, 627 miles away, the average was 6.6 days; from Savannah, 700 miles and 7.3 days; from Mobile, 1,600 [1,658] miles and 17.7 days; and from New Orleans, 1,711 miles and 18 days. The Havana run was a bit faster, with 1,227 miles and 12.1 days. This rate was slower than the eastbound ocean packet rate, but faster than the westbound. On the whole, the coastal packets were not driven as hard as the Liverpool liners because the mails went by land and it was not as important that they hurry with communications. Coastal as well as ocean packets made faster runs than ordinary shipping along those sea lanes.
>
> (The distances as stated by Albion are the theoretical shortest distances between the ports in nautical miles.)

The best of the sailing packets engaged in the coastwise trade were generally considered to be those in service between the port of New York (the national commercial metropolis) and the ports of New Orleans, La., and Mobile, Ala., on the Gulf of Mexico and the ports of Savannah, Ga., and Charleston, S. C., on the South Atlantic seaboard. The coastwise square-rigged sailing packets set forth in this analysis are those that saw regular service in the following established lines running to and from New York:

- Charleston Ship Line (George Sutton), Pier 21, East River.
- Charleston—Bulkley Line (a growth from the Charleston Brig Line).
- Savannah Old Line (Scott, Shapter & Morrell), Pier 18, East River.
- Savannah—Seguine Line, Pier 16, East River.
- Mobile—Old Line (E. D. Hurlburt Company), Pier 20, East River.
- New Orleans—Old Line (merged later with Holmes Line).
- New Orleans—Holmes Line (Silas Holmes), Pier 16, East River.
- New Orleans—Louisiana & New York Line (Edward K. Collins), Pier 15, East River.

There were two New Orleans-New York lines. One was named the Louisiana & New York Line and the other the New York & New Orleans Line. It was a continuation of these lines that in later years was absorbed with Morgan's fleet of steamers by the Atlantic Steamship Lines of the Southern Pacific Company, which operated the passenger and cargo steamships *Louisiana, Chalmette, Excelsior, Proteus,* and *Comus* and later the revolutionary and record-making, ocean-going S.S. *Momus, Antilles,* and *Creole* in regular service between the ports of New York and New Orleans. The number of coastal sailing New York packets of regular, established lines placed in the various southern runs during the period 1821-1854 inclusive are set forth herewith together with the average tonnage and average northbound length of passages of these packets:

Service	Period	No. of Ships Placed in This Run during the Stated Period	Average Tonnage of the Ships Placed in This Run during the Stated Period	Average Length of Passages in Days
A. Charleston	1822-1825	11	260	6.4
"	1831-1833	5	367	6.6
"	1839-1850	9	497	6.5
B. Savannah	1824-1830	11	288	7.6
"	1832-1838	11	420	7.1 (9)
C. Mobile	1826-1827	5	276	18.2
"	1829-1832	5	421	18.2
"	1835-1839	4	496	15.4 (2)
D. New Orleans	1821-1824	11	288	18.9 (7)
"	1825-1830	9	397	19.4
"	1831-1832	8	511	18.1
"	1833-1844	22	561	17.2
"	1845-1854	18	676	18.7

The range of length of passage of the coastal packets was quite large as the following record shows:

Packet Service	Shortest Passage	Longest Passages
Charleston	3 days (fourteen different ships)	NIAGARA, 23 days; CALHOUN, 22 days
Savannah	3 days (five different ships)	TYBEE, 36 days; BELLE, 22 days
Mobile	10 days (three different ships)	ST. JOHN, 50 days; AMELIA II, 47 days
New Orleans	9 days (SILAS HOLMES)	HUDSON, 51 days; INDIANA, 37 days; ATLANTIC, 37 days

It is reported that the fourteen different packet ships in the Charleston run made sixty 3-day passages all told, and some of the captains in this one line gave their passages in hours. The best run thus reported seems to have been that of the *H. Allen* (Capt. Hezekiah Wilson), a packet of 373 tons built in 1832 at Fairfield, Conn., credited with a passage of 63½ hours (or 2.65 days) in November 1841. In July 1831, the *Amelia I* (Capt. Michael Berry), a small 204-ton ship built in 1815 at Saybrook, Conn., reported a run of an even 70 hours (2.92 days), which was proclaimed as the record fast passage between the ports up to that time.

Albion's compilation of length of coastal packet runs has been used to obtain the following data:

Charleston		Savannah		New Orleans	
Length of Passage in Days	Percentage of 1,275 Passages	Length of Passage in Days	Percentage of 456 Passages	Length of Passage in Days	Percentage of 1,400 Passages
4	12.7	5	14.5	14	9.1
5	22.0	6	22.3	16	10.5
6	24.1	7	16.2	18	10.8
7	12.2	8	16.0	20	9.7
Between 4 and 7 days	71%	Between 5 and 8 days	69%	Between 13 and 20 days	70%

Albion's investigations of the average length of coastal packet passages, port to port, on the northbound run, giving the number of passages and the total period considered, are set forth herewith:

To New York from	During Period Commencing	Ending	Number of Passages Considered	Average Length of Passages in Days
Charleston	1822	1855	1,295	6.5
Savannah	1824	1840	456	7.3
New Orleans	1822	1857	1,395	18.0
Mobile	1826	1840	166	17.7

The months averaging the best passages (arrivals at New York) were June and July for Charleston and Savannah, although they held up well from April through August, and the first four months of the year for New Orleans. The months averaging the longest passages were November and February for Charleston, October, February, and September for Savannah, and August through November for New Orleans. (New Orleans hit its lowest monthly record for the year with 20.6 days for October as against its best of 17.1 days in April.)

The following monthly averages for the years 1825-1839 of northbound coastal sailing packet passages (in days) to New York have been compiled by Albion:

Month	Charleston	Savannah	Mobile	New Orleans
January	6.8	8.0	20.2	17.6
February	7.3	8.6	17.0	17.4
March	6.7	7.0	19.5	17.9
April	5.8	6.5	16.8	17.1
May	6.0	6.7	16.1	17.4
June	6.0	6.4	16.5	18.8
July	5.5	6.1	18.4	18.4
August	5.9	6.6	—	19.2
September	7.2	8.5	—	19.2
October	7.0	8.7	—	20.6
November	7.3	7.0	19.5	19.7
December	6.8	7.6	17.2	18.7

Service was virtually suspended in the Mobile run during late summer and early autumn, when both cargoes and weather were at their worst.

In the relatively short runs between Charleston or Savannah and New York, the time reported in days (not in days and hours) makes it impossible to record accurately the speed between ports in knots per hour. Assuming that a 3-day run is actually one of 84 hours' duration and the same half day (which is the mean of the possibly questionable time) is added to all passage records in days, we obtain the following figures, which give a close approximation to the speed in knots per hour between ports of America's best square-rigged sailing packets in actual service over a long term of years. The speed is computed with the theoretical shortest distance between ports taken in conjunction with the time occupied in making the passage and not the actual distance traveled by the sailing ship through the water as estimated by log or computed by observations. On every passage, the mileage under sail is greater than that under steam, and when combating head winds (and tacking) the mileage covered by the ship is very much more than the theoretical distance between ports and the speed through the water far higher than the figures herein stated.

To New York from	Time of Passage in Hours	Av. Speed in Kts. per Hr. over Theoretical Distance Port to Port	To New York from	Time of Passage in Hours	Av. Speed in Kts. per Hr. over Theoretical Distance Port to Port
A. *Charleston, S. C.*			C. *Mobile, Ala.*		
Fast passage	84	7.46	Fast passage	252	6.58
Slowest passage	564	1.11	Slowest passage	1,212	1.37
Average passages of fastest packet	139	4.51	Average passages of fastest packet	360	4.60
Average passages of slowest packet	192	3.27	Average passages of slowest packet	494	3.36
B. *Savannah, Ga.*			D. *New Orleans, La.*		
Fast passage	84	8.33	Fast passage	228	7.50
Slowest passage	876	0.80	Slowest passage	1,236	1.38
Average passages of fastest packet	139	5.04	Average passages of fastest packet	358	4.78
Average passages of slowest packet	250	2.80	Average passages of slowest packet	530	3.23

Cotton was the mainstay of the coastal packet service. In 1835 some forty-eight thousand bales of cotton, worth more than three million dollars, reached New York by sailing packets, and about three-quarters of it was transshipped by New York-owned packets to Liverpool. It has been said that the Charleston, Savannah, and New Orleans packets brought enough cotton to New York for the packet exports to Liverpool and that the Mobile packets practically supplied the Havre packets with their cotton requirements. Of the cotton reaching New York in 1835 by the coastal packets, 32.2 per cent came from New Orleans, 24.0 per cent from Mobile, 22.7 per cent from Savannah, and 21.1 per cent from Charleston; or 56.2 per cent from the two Gulf ports and 43.8 per cent from the two East Coast Carolina and Georgia ports. New Orleans sent a wide range of products to New York by packet, such as hides, skins and furs, tobacco from Kentucky, sugar, pig lead from the mines of Galena in Illinois, flour, and specie from Mexican silver mines. Albion says that the average cargo of a New Orleans packet for the year (1835), not taking into account the seasonal fluctuation, was 353 bales of cotton, 141 hogsheads of tobacco, 68 hogsheads of sugar, 1,922 pigs of lead, $44,000 in specie, and a considerable amount of hides, skins, furs, and other articles; from the other southern ports, in addition to the "inevitable hides, skins and furs," he has computed average packet cargoes as 721 bales of cotton from Mobile, 230 bales of cotton and 236 casks of rice from Charleston, and 403 bales of cotton and 67 casks of rice from Savannah.

None of the coastal packet lines running in the southern trade maintained regular sailing schedules throughout the entire year as did the ocean packets, for the freight shipped from the southern ports was seasonal as was much of the passenger travel. The advertisements of the southern coastal packet lines frequently stated sailings at fixed intervals "during the season," which generally was from September to May. During the fifteen-year period 1825-1839, records show that about one hundred twenty-five packets arrived in New York, on an average, per year, and of these 38.0 per cent were from Charleston, 28.6 per cent from New Orleans, 24.9 per cent from Savannah, and 8.5 per cent from Mobile. March was the heaviest month of arrivals in New York of the southern coastal packets, with an average of thirteen ships, and August the lightest, with an average of six ships for the fifteen-year period. To show that the Charleston service had the most regular packet sailings and Mobile the most irregular throughout the twelve months of the year, the ratio of average monthly maximum and minimum arrivals at New York from each of the southern ports during the years 1825-1839 is given as follows:

Southern Port	Average Monthly Packet Arrivals at New York: Highest — Month	Number	Lowest — Month	Number	Ratio Highest to Lowest
Charleston, N. C.	November	5.20	August	2.67	1.95 to 1
Savannah, Ga.	October	3.53	August	1.33	2.65 to 1
New Orleans, La.	March	4.60	October	1.47	3.13 to 1
Mobile, Ala.	March	1.53	October	0.07	21.80 to 1

The Erie Canal was completed in the fall of 1825, but New York had gained supremacy in the transatlantic trade prior to that time and had three lines of packets profitably engaged in the Liverpool run, two sailing to London, and three to Havre, France (i.e., eight ocean packet lines), before the canal was in operation. The fact that New York had well-established packet lines running to Charleston and Savannah and two to New Orleans (with a line being organized to give regular service to and from Mobile) when the Erie Canal commenced to function is of significance. Trade advertisements in New York papers not only in the twenties but also in the thirties and up to the mid-forties were addressed "To Southern and Western Merchants," the "Southern" being given priority in importance (and this is a barometer of trade volume). For many long years, the South, with its marine-borne trade, was much more important to New York as a port and a great commercial center than the West. It was not until the days of railroads and steam and the years of discord which led to the Civil War that, in importance to New York, the West with its rail traffic really supplanted the South with its sailing coastal packet trade.

The number of sailing ships engaged in the New York-southern U.S.A. port coastal packet service, with regular scheduled sailings, is shown herewith for certain years during the period 1821-1860 inclusive; i.e., from the time that the lines were organized to the Civil War and suspension of service:

Lines	1821	1825	1830	1835	1840	1845	1850	1855	1860
New York-Charleston									
Ship Line	commenced 1822	9	7	8	8	5	5	4	—
Bulkley Line	—	—	—	—	commenced 1843	4	5	—	—
Total N.Y.-Charleston lines	—	9 (8 regularly)	7 (8 regularly)	8	8	9	10	4	—
New York-Savannah	commenced 1824	6	6	6	3	1	—	—	—
New York-Mobile	—	commenced 1826	5	3	1	—	—	—	—
	(cotton triangle gradually substituted for N.Y. packet service)								
New York-New Orleans									
Old Line	3	5	5	discontinued 1834	—	—	—	—	—
Holmes Line	commenced 1824	5	5	6	7	7	8	11	6
Louisiana & N.Y. Line	—	—	commenced 1831	6	9	7	7	6	2
N.Y. & N.O. Line	—	—	—	commenced 1839	5	6	7	6	4
Total 4 N.Y.-N.O. lines	3	10	10	12	21	20	22	23	12
Total 8 N.Y. coastal sailing packet lines	3	25	28	29	33	30	32	27	12

The following table gives the name and tonnage (old customhouse measurements) of the largest packet ship engaged in the service of each of the eight regular New York-southern port coastal sailing packet lines that were operating in the various years stated during the period 1821-1860 inclusive:

Lines	1825	1830	1835	1840
New York-Charleston Charleston Ship Line	LAFAYETTE 341	LAFAYETTE 341	ANGELIQUE 420	CATHARINE 477
Bulkley Line	—	—	—	commenced 1843
Total N.Y.-Charleston lines	LAFAYETTE 341	LAFAYETTE 341	ANGELIQUE 420	CATHARINE 477
New York-Savannah	LOUISA MATILDA 313	MACON 359	LOUISA 590	GASTON 456
New York-Mobile	commenced 1826	ST. JOHN 397	RUSSELL BALDWIN 464 (larger ships put in cotton triangle trade)	ST. JOHN 397
New York-New Orleans Old Line	RUSSELL 386	DE WITT CLINTON 417	—	—
Holmes Line	LOUISIANA 344	KENTUCKY I & TENNESSEE each 415	KENTUCKY II 629	PANTHEA 641
La. & N.Y. Line	—	commenced 1831	SHAKESPEARE 747	MEMPHIS 798
N.Y. & N.O. Line	—	—	commenced 1839	FRANKFORT 799
Total 4 N.Y.-N.O. lines	RUSSELL 386	DE WITT CLINTON 417	SHAKESPEARE 747	FRANKFORT 799
Total 8 N.Y. coastal sailing packet lines	RUSSELL 386	DE WITT CLINTON 417	SHAKESPEARE 747	FRANKFORT 799

The Charleston Ship Line commenced sailings in 1822, the Savannah line in 1824, and the Holmes (New Orleans) Line also in that year; whereas the Old Line, running between New York and New Orleans, was using three brigs of from 244 to 254 tons in 1821.

Lines	1845	1850	1855	1860
New York-Charleston Charleston Ship Line	SOUTH CAROLINA 580	CHACE 625	CHACE 625	—
Bulkley Line	NEW YORK 524	E. BULKLEY 730	—	—
Total N.Y.-Charleston lines	SOUTH CAROLINA 580	E. BULKLEY 730	CHACE 625	—
New York-Savannah	NEWARK 306	—	—	—
New York-Mobile	—	—	—	—
New York-New Orleans Old Line	—	—	—	—
Holmes Line	SILAS HOLMES 644	ST. LOUIS 938	ST. LOUIS 938	MAID OF ORLEANS 934
La. & N.Y. Line	YAZOO 677	ST. CHARLES 798	ST. CHARLES 798	ST. CHARLES 798
N.Y. & N.O. Line	INDIANA 607	CREOLE II 767	CREOLE II 767	CREOLE II 767
Total 4 N.Y.-N.O. lines	YAZOO 677	ST. LOUIS 938	ST. LOUIS 938	MAID OF ORLEANS 934
Total 8 N.Y. coastal sailing packet lines	YAZOO 677	ST. LOUIS 938	ST. LOUIS 938	MAID OF ORLEANS 934

The following is an attempt to show where the regular coastal sailing packets engaged in the New York-southern port services were built during the period prior to 1857. This compilation does not include eight coastwise vessels that were also in transatlantic packet service (*Shakespeare, Wellington, Mediator, Quebec, Toronto, Westminster, Howard,* and *Henry)* and four packets for which the records of dates and builders are incomplete *(Hudson, Isaac Allerton, Charleston II,* and *John Minturn*). Of the 117 ships recorded, 78 (or 66.6 per cent) were built in New York, and 30 (or 25.6 per cent) were built in Connecticut.

Where Built	Number of Packets Built during Period: Prior to 1818	1818-1832	1833-1847	1848-1857	Total 1815-1857	Total Tonnage
A. *New York*						
The Ficketts and Crockett	—	15	10	—	25	10,410
Brown & Bell; A. & N. Brown; W. H. Brown	1	4	5	2	12	6,675
Bergh-Westervelt	—	4	3	—	7	3,396
Webb	—	3	2	—	5	2,742
Smith & Dimon	—	1	3	—	4	2,171
Wright	—	1	—	—	1	313
Other New York builders	—	11	12	1	24	11,789
Total New York	1	39	35	3	78	37,496
B. Connecticut	1	19	8	2*	30	11,465
C. Massachusetts	—	—	4	—	4	2,375
D. Maine	—	—	—	2	2	1,228
E. Rhode Island	—	—	—	1	1	625
Total New England	1	19	12	5	37	15,693
F. Pennsylvania	—	1	—	—	1	298
G. Upstate New York	—	1	—	—	1	228
Total as recorded	2	60	47	8	117	53,715

* No record of year built for *Hero* (749 tons); in coastwise packet service 1848-1850.

The New York Transatlantic Sailing Packet Service—1830-1840

During the period 1830-1840 inclusive, the three old Liverpool, two London, and three Havre lines of New York sailing packets (i.e., the eight transatlantic packet lines inaugurated between 1818 and 1824) added the following number and tonnage of ships to their Western Ocean fleets; statistics for average and individual vessels, size, and speed are presented together with data covering the Liverpool, London, and Havre services separately.

Charles Dickens, in his AMERICAN NOTES, tells of his transatlantic crossing in the British Cunard steamship *Britannia* westbound and his return home in an American sailing packet. After his experience in "a dirty British smoke-box," Dickens preferred, rather than undergo a second period of gross discomfort, to sail eastbound on a clean sailing ship where he could enjoy fresh air. He selected the New York-Liverpool Blue Swallowtail Line packet *George Washington,* and crossing the Atlantic in the summer of 1842, this sailing ship, then ten years old, "beat the Cunarder," we are told, "by 29 hours."

The *George Washington* must have been a rather fast ship considering her full seaworthy model and sturdy build and rig, for she is credited with winning the first transatlantic

Name of Line	Number of Vessels Added to Service 1830-1840 Inclusive	Registered Tonnage				Average Length of Service in Years	Westbound Passages in Days		
		Total	Average	Largest	Smallest		Average All Ships	Shortest	Longest
Black Ball	10	6,761	676	NEW YORK II 862 tons	HIBERNIA 551 tons	11	35.7	21 ENGLAND and OXFORD	73 NEW YORK
Red Star	5	3,363	673	STEPHEN WHITNEY 868 tons	SHEFFIELD 578 tons	10	34.3	20 VIRGINIAN	57 ST. ANDREW
Blue Swallowtail	5	3,651	730	PATRICK HENRY 880 tons	GEORGE WASHINGTON 609 tons	11½	34.4	21 INDEPENDENCE	59 ROSCOE
Total of 3 Liverpool lines	20	13,775	689	PATRICK HENRY 880 tons	HIBERNIA 551 tons	11	35	20 VIRGINIAN	73 NEW YORK
Black X	8	4,357	545	TORONTO and WESTMINSTER 631 tons	SOVEREIGN 462 tons	10	36.3	19 PRESIDENT	62 PRESIDENT
Red Swallowtail	7	4,167	595	WELLINGTON 726 tons	SAMSON 484 tons	11½	35.9	19 WELLINGTON	61 SAMSON
Total of 2 London lines	15	8,524	568	WELLINGTON 726 tons	SOVEREIGN 462 tons	11	36.1	19 PRESIDENT and WELLINGTON	62 PRESIDENT
Havre Old Line	10	6,431	643	IOWA 874 tons	CHARLEMAGNE 442 tons	8	35.5	20 SYLVIE DE GRASSE	79 FRANCIS DEPAU
Havre Second Line	2	1,183	592	BALTIMORE 658 tons	UTICA 525 tons	14½	39.5	22 BALTIMORE	78 BALTIMORE
Whitlock	4	2,330	583	DUCHESSE D'ORLEANS 798 tons	ALBANY 468 tons	11	37.5	21 EMERALD	67 DUCHESSE D'ORLEANS
Total of 3 Havre lines	16	9,944	621	IOWA 874 tons	CHARLEMAGNE 442 tons	9½	36.8	20 SYLVIE DE GRASSE	79 FRANCIS DEPAU
Total of 8 New York lines	51	32,243	632	PATRICK HENRY 880 tons	CHARLEMAGNE 442 tons	10½	35.9	19 PRESIDENT and WELLINGTON	79 FRANCIS DEPAU

race of any importance. The ships that participated in this race, sailing from New York together on July 8, 1836, were as follows:

Name of Packet	Captain	Line	Builder	Year Built	Tonnage	Dimensions Length	Beam	Depth
						Feet	*Feet*	*Feet*
GEORGE WASHINGTON	Holdredge	Blue Swallowtail	New Bedford	1832	609	133.5	31.8	15.0
SHEFFIELD	Allen	Red Star	Smith & Dimon, New York	1831	578	133.0	31.0	15.7
COLUMBUS	Palmer	Black Ball	Newburyport, Mass.	1834	663	138.8	32.5	16.2

It is said that the three ships were in company on the Banks of Newfoundland, but later separated. The *George Washington* arrived first in the Mersey, followed two and a half hours later by the *Sheffield;* both ships anchored during the afternoon of July 25, after fast runs of 17 days from New York. The larger and newer Black Ball liner *Columbus* anchored early the following morning, having lost time during the latter part of the crossing by taking a different course "searching for more wind." All of these three Western Ocean packets, owned one each by the three New York-Liverpool packet lines (which monopolized the service until Collins' Dramatic Line made a sailing in 1836 and had four ships in the service in 1837), at some time or other in their careers did some good sailing, and each of the packets evidently had her ardent admirers. A comparison of the all-time passages of these three vessels on the more difficult westward crossing is of interest:

Name of Packet	Line	Length of Service in Line: Began	Ended	Number of Years	Length of Westward Passages in Days: Average	Best	Slowest
GEORGE WASHINGTON	Blue Swallowtail	1832	1845	13	35	23	54
SHEFFIELD	Red Star	1831	1843	12	35	21	46
COLUMBUS	Black Ball	1834	1845	11	36	28	50

The *Columbus,* in all her westward crossings, never made a "lucky" passage favored by strong east winds, but she was average in regard to her longest crossing and adverse sailing conditions experienced on her worst homeward run.

In 1837 the press announced that the New York-Liverpool Red Star packet *Sheffield* (578 tons), with Captain Allen in command, although beaten "two or three hours" by the Blue Swallowtail liner *George Washington* (609 tons) in the great eastbound transatlantic race of July 1836, nevertheless, made a record covering "the five eastward passages that this ship has made during the past twelve months." The aggregate time of these five successive crossings from New York to Liverpool was stated as 91 days—an average of 18.2 days each from port to port. But on her next eastward run the *Sheffield* crossed in the splendid time of only 16 days, and this performance gave that packet ship a record of six consecutive passages from New York to Liverpool in 107 aggregate days—an average of 17.8 days per crossing.

In 1837 a match was made between the Black Ball liner *Columbus* of 663 tons (Capt. Frederick Augustus De Peyster) and the *Sheridan* of 895 tons (Capt. Joseph Russell) of the Dramatic Line, then on her first voyage, for a transatlantic race for stakes of $10,000 a side from New York to Liverpool. It is said that the owners, commander, and friends of the *Columbus* did the challenging, and it is believed that Capt. C. H. Marshall, who managed the Black Ball Line, as well as the owners of the old established New York transatlantic packet lines, was "fed up" with the publicity of Edward K. Collins of the Dramatic Line to the effect that the *Sheridan* and her sister packets represented "an advance over any packet of any competing line in comfort, capacity and speed." Captain Marshall, the owner, and Captain De Peyster, the commander of the *Columbus,* acknowledged that the *Sheridan* was 232 tons (or 35 per cent) larger "and nearly three years newer than our *Columbus,*" but they declared, "The *Sheridan* cannot beat the *Columbus* in the run from New York to Liverpool." Both ships were prepared for a hard, driving race during the eastbound crossing, and the *Sheridan* carried a very large and augmented crew of forty picked men before the mast, with regular pay of $25 a month and the promise of a bonus of $50 each, provided their ship won the race. The ships sailed together from New York on Thursday, February 2, 1837, and the *Columbus* won after a fast passage of 16 days, beating the *Sheridan* by two days. This is the first race across the Atlantic for stakes of which any record has been preserved, although, of course, there had been many informal races long before.

The *Sheridan,* although a fast ship, had a poorer sailing record than her sister Dramatic packets *Garrick* and *Siddons,* but all three ships had all-time length-of-westbound-passage records across the Atlantic superior to that of the *Columbus,* as the following comparison of performance shows:

Name of Packet	Tonnage	Built	Line	Length of Service in Line: Began	Ended	Total Years	Westward Passages in Days: Average	Fastest	Slowest
SHERIDAN	895	1836	Dramatic	1837	1853*	17	35	22	52
GARRICK	895	1836	Dramatic	1837	1853*	17	32	18	54
SIDDONS	895	1837	Dramatic	1837	1854*	17	34	22	53
COLUMBUS	663	1834	Black Ball	1834	1845	11	36	28	50

* The Dramatic Line ships continued in the Atlantic "shuttle," sailing in James Foster, Jr.'s Liverpool "line" until 1854-1856.

Captain De Peyster, who commanded the Black Baller *Columbus* when she beat the *Sheridan* in the match race of early 1837, made such an impression on Edward K. Collins as a resourceful driving skipper that he was hired from the Black Ball Line and was engaged as captain of the *Sheridan* in 1838. De Peyster remained in command of that ship for six years and as late as May 1852 was the registered owner of a one-eighth interest in the *Sheridan,* which he had so badly beaten when in command of the *Columbus* in 1837.

Probably the most famous, speedy, popular, and successful Atlantic packet built in the early thirties was the *Independence* of 732 tons, constructed by Stephen Smith, New York, in 1834 for the Liverpool Blue Swallowtail Line. This ship was operated in the Liverpool service for thirteen years and was transferred in 1847 to the London Red Swallowtail Line, in which she sailed five years, until 1852, when she became a regular trader and transient. She ended her career when she was wrecked in the China Seas on October 31, 1862, when twenty-eight years old and while engaged in a passage from Manila to New York. During the first eleven years of her service as a Liverpool Blue Swallowtail packet, the *Independence* was under the command of Capt. Ezra Nye, under whom she did some great sailing, being challenged for a few years (before the Dramatic liners appeared in 1837) only by the *South America* of the Black Ball Line. The *Independence* averaged only 31 days on her first fifteen recorded passages on the westbound transatlantic run. Her fastest crossing was made in 21 days, but she made other very fast passages in 22 and 24 days and had five runs to her credit in 25 days or under. The *South America,* built in 1832, was of 605 tons, and on her first fifteen recorded westward passages she had two runs to her credit of 24 days and one of 26 days, but her average of 34 days was seriously affected by one unlucky long passage of 69 days. (Omitting this unfortunate crossing, the average of the other fourteen passages was 31.5 days.) The *Garrick* (895 tons) of the Dramatic Line, which became the acclaimed greyhound of the Atlantic in the late thirties, was built in 1837 (three years after the *Independence*) and was 163 tons (or 22 per cent) larger than the crack Blue Swallowtail liner; yet the average length of passage of these two packets for their first fifteen recorded westbound crossings from Liverpool to New York is the same—31.0 days.

In the Blue Swallowtail New York-Liverpool service during the thirteen-year period 1834-1847, the *Independence* averaged 32 days on all her westbound runs, port to port—not rock to light; her fastest passage on the westward, or homeward-bound, run occupied 21 days, port to port, and her slowest crossing was made in 48 days. Later, in the London Red Swallowtail service, the *Independence* was somewhat slower, as she was not kept up as well as when on the Liverpool run and she was getting older; her westbound passages, however, averaged 34 days, and she made one crossing from Portsmouth to New York in 26 days.

The *Independence* is credited with several fast Atlantic eastbound passages, and for a number of years, when commanded by Capt. Ezra Nye, she took the president's message to England, her sailing day being fixed for the 6th of March for that purpose. The Liverpool ALBION of April 24, 1836, reported under the caption, "Unprecedented Quick Passage," a crossing of the *Independence* (Capt. E. Nye) of the Liverpool Blue Swallowtail Line and said that the fast packet "sailed from New York on the evening of the 8th instant and the interval between her leaving and taking the Liverpool pilot was only fourteen days and five hours." The English paper continued: "The passage from port to port has frequently been made in sixteen days; in the year 1822 the packet ship *New York* made it in fifteen days and three quarters; but the *Independence* is the only ship that ever accomplished it within the fifteen days."

Whether or not the *Independence* actually completed this fast passage in under 15 days, port to port, is not known, but marine historians have made many claims for fast runs eastbound for the packet under Captain Nye. One authority says, "She more than once made the passage from New York to Liverpool in fourteen days." Another says that the *Independence* is generally credited with "several runs between New York and Liverpool under fifteen days outside of her amazingly fast run from Savannah to Cork in 1836." This run of the *Independence* from the cotton port of Savannah, Ga., to Cork, Ireland, is rather confusing as to time when compared with the "record" transatlantic passage of the packet reported in the Liverpool press of April 24, 1836; for some statistics show that the *Independence* arrived at New York June 14, 1836, and her command, Capt. Ezra Nye, claimed for her a transatlantic round-voyage record of 34 sailing days, with an eastbound run of 14 days and a westbound crossing of 20 days. (However, these lengths of passage must have been days at sea and not the time from port to port, as the record run of the *Independence* westbound, city to city, was stated by the line as 21 days.) Some historians have said that when Captain Nye made his claimed round-voyage record of 34 sailing days, the outbound leg was from Savannah to Cork (a longer distance than from New York to the Irish port); that the passage was made "in May 1836 in 14 days, 12 hours at an average speed of 9½ knots per hr.," following which "she then made the run westward from Liverpool to New York in 20 days, arriving June 14, 1836." It was written of the *Independence* that "she was one of the most successful sailing packets, the holder of speed records and both great and popular in her day."

Capt. Ezra Nye as one of the captains whose names are inseparably linked in marine history with a particular outstanding ship, and "*Independence,* Nye" was proclaimed to be a famous combination of "a first-rate captain and a first-rate ship" such as were "*Yorkshire,* Bailey" of the transatlantic Black Ball Line, *"Huntsville,* Palmer" in the New York-New Orleans packet service, and later *"Flying Cloud,* Creesy" in the Cape Horn California trade. In 1845, when Brown & Bell, New York, built the *Henry Clay* of 1,207 tons for the Liverpool Blue Swallowtail Line of transatlantic packets, Captain Nye not only took command of this new "Queen of the Line" but also "bought into her" to the extent of $20,000.

The *Henry Clay* was advertised by her owners as the "largest, fastest and best" of the Atlantic packets, but while holding honors for size in 1845, she never became a "speed queen" to rival the phenomenal *Yorkshire* of 996 tons (built in 1843) and did not approach the record of the *Independence* (732 tons), which in 1847 was demoted from the Liverpool to the London Swallowtail service, where she ran until she was condemned at the close of 1868 after thirty-four and a half years of transatlantic packet service. The *Henry Clay* was, however, a big, comfortable, and impressive American sailing packet. In 1848, after a visit to Liverpool, Lord William Lennox wrote: "Here are some splendid American liners. I went on board the *Henry Clay* of New York, and received the greatest attention from her commander, Captain Ezra Nye. Nothing can exceed the beauty of this ship; she is quite a model for a frigate. Her accommodations are superior to any sailing vessel I ever saw." At that time, the *Henry Clay* was three years old, and she was no longer the biggest sailing packet on the Western Ocean or even in the Swallowtail service; for the *New World* of 1,404 tons, built in 1846 and a faster ship than the *Henry Clay,* was running in the Blue Swallowtail Line between New York and Liverpool, and the *Constitution* of 1,327 tons, built by Brown & Bell, had also been in service two years in the Liverpool New Line. The *Henry Clay,* with an average of 34 days on her westward passages, had about the same average speed as the *Patrick Henry,* but was some two days slower than the average of the crossings of the *Independence* in the Liverpool run, three days slower than the *New World,* and five days slower than the speedy, smaller, and older *Yorkshire.*

The *Henry Clay,* while impressive in appearance, comfortable and popular, was not a lucky ship. In 1846, when only a year old and while under the command of Captain Nye, she ran ashore on the New Jersey coast at midnight while approaching New York with some three hundred passengers aboard, "heaved over and lay between the undertow and outer bar, broadside to the beach." Captain Nye was resourceful, and after a boat was overturned trying to make the shore and six persons were drowned, he rigged up a breeches buoy, got all the remainder of passengers and crew ashore safely, and directed the work of refloating the *"Clay,"* so that in a month's time she was off the sands and soon resumed her regular service. On September 5, 1849, when only four years old, the *Henry Clay* was burned at her East River, New York, pier, but her charred hull was purchased by shipwrights from the underwriters. After being rebuilt, she was acquired by the new owners of the Dramatic Line, who operated her with success for fifteen more years (until 1865) in the New York-Liverpool sailing packet service in company with the larger ships *Webster* (1,727 tons), *Calhoun* (1,749 tons), *Orient* (1,560 tons), and *Ellen Austin* (1,626 tons). Capt. Ezra Nye was not in command of the *Henry Clay* when she burned, for at the end of 1848 he withdrew from the sailing packet service, having been influenced by Edward K. Collins, the former owner of the Dramatic Line, to take command of the Collins steam transatlantic packet *Pacific.*

According to the writers of the period, one of the best and most dependable packets built in the thirties and one of the most popular and highly esteemed transatlantic sailing liners during the forties and fifties was the *Patrick Henry* of the Swallowtail lines (Grinnell, Minturn & Company), which was in regular service for thirteen years in the Blue Swallowtail Line to Liverpool (1839-1852), followed by twelve years in the Red Swallowtail Line to London (1852-1864); i.e., for twenty-five years in all, until she was sold to the British during the Civil War. The *Patrick Henry* was built by Brown & Bell, New York, in 1839. She was of 880 tons register; 159 ft. long, 34.8 ft. beam, and 21.8 ft. deep. It would seem that only two transatlantic sailing packets showed a better average speed record on the westbound crossing for a period of twenty-five years or more than did the *Patrick Henry* and that only one equaled her average performance. The much larger and later-built Swallowtail liner *New World* of 1,404 tons had an average length of passage westbound of 31 days for thirty-four years; the Black Baller *Great Western* of 1,443 tons, built in 1851 (twelve years after the *Patrick Henry*), had an average of 31 days for twenty-seven years (1851-1878); and the London Red Swallowtail liner *Cornelius Grinnell* of 1,117 tons, built in 1850, averaged 33 days in her homeward passages during her thirty-one years of service (1850-1881). This is the same as the westward average of the much older and smaller *Patrick Henry*, which averaged 33 days for twenty-five years, but during her twelve years in the London service she averaged only 32 days. The *Patrick Henry's* best homeward crossing of 22 days was two days better than that of either the *Great Western* or the *Cornelius Grinnell*, and her longest run of 41 days in the London (Portsmouth)-New York run was better than that of either the *Cornelius Grinnell* (48 days) or the *New World* (42 days). The *Patrick Henry* is credited with an eastbound passage to Liverpool, port to port, in 15 days, and John R. Spears says: "In the course of the packet period five liners made passages to Liverpool [evidently Sandy Hook to the Mersey] in fourteen days or less—the *Montezuma*, the *Patrick Henry*, the *Southampton*, the *St. Andrew* and the *Dreadnought*." It has been said that the *Patrick Henry*, under the command of Capt. Joseph C. Delano, of New Bedford, Mass., was a remarkably fine sailer and "made more money than any other ship belonging to her owners."

Inauguration of Dramatic Line and "New Line"—Both to Liverpool

In the mid-thirties, changes of importance occurred affecting the New York transatlantic packet service. The pioneer Black Ball Line changed ownership completely in 1834 and came under the domination of the New England firm of Goodhue & Company, with which were associated in the purchase Capt. Charles H. Marshall and Capt. Nathan Cobb—both packet shipmasters. The Red Star (Liverpool) Line was sold outright in 1835 to Robert Kermit (son of Capt. Henry Kermit) and a group of "Yankee" financiers, including Stephen Whitney, of Connecticut, and Nathaniel Prime, of Massachusetts. For twelve years, no new transatlantic packet line had been organized to sail out of New York, but in 1836 Edward Knight Collins entered the field with his Dramatic Line of large and fast, high-quality ships. Collins, born in 1802, was a native of Truro and "a Cape Cod Yankee." When fifteen years of age, he entered a shipping merchant's office at New York and in 1822 went to sea as a supercargo. Although he had "salt water in his blood" (being the son of Capt. Israel G. Collins and nephew of Capt. John Collins), he was soon acknowledged as an excellent businessman and a bold, successful trader and became a partner in the business that he had joined as a junior clerk eight years before. Collins attracted attention in 1825 by racing to Charleston in a fast pilot-boat schooner, upon the arrival of news in New York of a sudden price rise of cotton in Liverpool, and buying up all the available cotton before the merchants who had taken passage on a packet, with the same object in view, arrived at the southern cotton port. With this money as a nucleus, Collins interested himself in southern coastwise packet lines and in the cotton trade before establishing his famous line of New York transatlantic sailing packets.

When the Dramatic Line, managed and partially owned by Edward Knight Collins, inaugurated a new sailing packet service between New York and Liverpool "just before the panic of 1837," it was said that the fast, relatively "splendid," and well-appointed ships of the new line outclassed the packets of all competitive lines engaged in the transatlantic "shuttle" trade. (This new line was called the "Fifth," although it was only the fourth New York-Liverpool line, as the service designated the "Third" was merely a second fleet of ships sailing the middle of the month to augment the initial service with sailings on the first of each month under the Black Ball flag and ownership.) Collins, who later played such an important role in making the United States, for a brief period, as superior to Britain in the realm of steam navigation as the United States had been in sail, was undoubtedly a great shipping man and ship operator. He well knew "good" ships and what constituted good service, and it has been correctly said of him, "He acquired some of the ablest captains in the service, made good speed records, and was a past master in the art of pleasing the passengers with excellent food and other such details." Toward the end of 1836, Collins temporarily transferred his new packet *Shakespeare* to the new Liverpool run; in 1836-1837 he built for the service three sister ships, the *Garrick, Sheridan,* and *Siddons,* which cost about $80,000 each (or $90 per ton); and in 1838 he built the still bigger and more imposing *Roscius,* the first packet of 1,000 tons register, to replace the smaller 747-ton *Shakespeare* in the Dramatic Line transatlantic service. Collins entered the New York-Liverpool sailing packet trade at an unfavorable time considering business volume and possible profits, for the panic of 1837 was followed by a five-year depression, during which British steamers entered the transatlantic service to compete with American sailing packets. Indeed, the year of 1838, when Collins placed his last and largest Dramatic Line sailing packet in the transatlantic service, was momentous, as it marked the entry into the transatlantic packet trade of the first steam-powered vessels. Two British steamers arrived at New York April 23, 1838, and this event was the beginning of the end of America's absolute monopoly of the Atlantic packet trade, which had been held with wood sail for twenty years—from January 1818, when the pioneer Black Ballers made their initial sailings from New York and Liverpool.

The ships operating in the Collins New York-Liverpool Dramatic Line in the latter part of the thirties (all of which, with the exception of the *Shakespeare,* continued in the service into the fifties) were as follows:

Name of Ship	Year Built	Builder	Tonnage	Dimensions			Service in Line	Length of Westbound Passages in Days		
				Length	Beam	Depth		Shortest	Longest	Average
				Feet	*Feet*	*Feet*				
SHAKESPEARE	1835	Brown & Bell, New York	747	142.2	34.2	14.1	1836-1838 (2 yrs.)	27	51	36
GARRICK	1836	Brown & Bell, New York	895	157.5	35.3	21	1837-1853 (16 yrs.)	18	54	32
SHERIDAN	1836	Brown & Bell, New York	895	157.5	35.3	21	1837-1853 (16 yrs.)	22	52	35
SIDDONS	1837	Brown & Bell, New York	895	157.5	35.3	21	1837-1854 (17 yrs.)	22	53	34
ROSCIUS	1838	Brown & Bell, New York	1,030	167.5	36.3	21.6	1838-1853 (15 yrs.)	23	59	34

The Dramatic Line packets made good time in their transatlantic passages as compared with those of the Black Ball and other lines. It was reported that in 1839 four ships of the Dramatic Line made twelve westward crossings from Liverpool to New York in the fast average time of 28 days; whereas the Black Ball liners of 1818-1823 had required 40 days for this difficult westward run. The Dramatic Line's first five ships were designed and built for the service under the supervision of Capt. Nathaniel B. Palmer. They were constructed by Brown & Bell, New York, and the speedy *Garrick* became known as the greyhound of the fleet and "the best sailing packet on the Western Ocean"; she made a fine westbound passage in 18 days, and the average length of her homeward crossings was 32 days. The bigger *Roscius* (135 tons, or 15 per cent, larger than the *Garrick* and her two sisters and built two years later) became a popular packet and gained the reputation of being a fast and reliable sailer. Whereas her average time for all her westbound passages was 34 days (two days longer than for the *Garrick*) and her best crossing occupied 23 days, the average time of her westward runs in 1839 was reported as only 26 days. It was fourteen years before this fine sailing performance of the *Roscius* was beaten, and this by the medium clipper *Dreadnought*, "The Wild Boat of the Atlantic," which made eight outstanding crossings westbound in the unprecedented fast average time of 24½ days.

The original Dramatic Line quintet is famous for being the first transatlantic packets—and the first fast ocean-going, or deep-sea, sailing ships—built with a flat floor and but little deadrise, instead of the more nearly V-shaped midship under-water cross section previously and erroneously felt necessary for speed. When these vessels were being constructed, the old salts declared that, with their flat floors, they would "never make a passage to the west'ard," but their actual performances were a revelation. In 1839 these Dramatic Line packets were admittedly the fastest, most reliable sailers in America—mercantile or naval, and they influenced to an important degree the design of the fast sailing ships and clippers built in the United States in the forties and fifties.

None of the packet ships were capable of phenomenal speed per hour, nor did they make high day's runs, seldom exceeding 13 to 14 knots maximum under extraordinarily favorable conditions for a short period and about 12 knots per hour maximum for a day's run. Most of the packets made transatlantic passages eastbound at some time or other in 16 or 17 days, but this was because they were driven hard, night and day, and usually had plenty of wind. The packet model was well adapted to the turbulent North Atlantic trade, with its heavy seas and westerly winds, and the ships were well sparred and rigged, with an ample sail spread. The perfected American sailing packet of the late forties, which had incorporated in its model the lessons learned from the Dramatic Line ships and had been developed in hull and rig from the accumulated experience of all packet lines and traders of the North Atlantic, was a far better ship for that strenuous trade, particularly on the homeward run against the westerlies, than was the more highly advertised and spectacular clipper ship of the following decade and later era.

During the period 1822-1837, the Black Ball, Red Star, and Blue Swallowtail New York-Liverpool packet lines were operating sixteen sailing ships steadily in the transatlantic "ferry" service; in 1837 the Dramatic Line raised the total in the Liverpool lines to twenty; and in 1843, with the depression over, general business picking up, and prosperity returning, still another line entered the field, adding four more ships to the fleet of sailing packets operating between New York and Liverpool and raising to twenty-four the total number of packets steadily employed in the service. The new and so-called "Sixth Line," organized by Woodhull & Minturn, became known as the Liverpool "New Line." Although the New Line commenced the service with a relatively small ship, the *Rochester* of 714 tons, it quickly put big ships in the run, and of the four ships in this service in 1847, two when launched were proclaimed to be "the largest packet ships in the world." The pioneer vessel of the Woodhull & Minturn line, the *Rochester*, was wrecked on Blackwater Bank on the Irish coast on April 18, 1847, and a big packet, the *Constitution* of 1,327 tons, built in 1846, was acquired to replace the *Rochester*.

The following is a list of the ships operating in the New York-Liverpool New Line during the years 1843-1849 (the total period of its existence):

Name of Ship	Year Built	Builder	Dimensions: Length	Dimensions: Beam	Dimensions: Depth	Entered Service	Years of Service: In New Line	Years of Service: Total	Length of Westbound Passages in Days: Shortest	Length of Westbound Passages in Days: Longest	Length of Westbound Passages in Days: Average
			Feet	*Feet*	*Feet*						
ROCHESTER (714 tons)	1839	Brown & Bell, New York	144.5	33	21.1	1843	4	4	24	41	33
HOTTINGUER (993 tons)	1840	Westervelt & Mackey, New York	166	36.2	21.8	1843	6	9	28	48	37
LIVERPOOL (1,077 tons)	1843	Brown & Bell, New York	175.5	36.5	22.2	1843	6	37	26	55	36
QUEEN OF THE WEST (1,160 tons)	1843	Brown & Bell, New York	179.3	37.5	22	1843	6	12	22	43	33
CONSTITUTION (1,327 tons)	1846	Brown & Bell, New York	182.3	39.8	30.3	1847	2	8	18	56	32

After six years of operation as an independent line, the Woodhull & Minturn New Line was absorbed by the Blue Swallowtail in 1849, with the result that the Blue Swallowtail service to Liverpool became as large as the Black Ball, each having eight ships and two sailings per month. The other existing sailing packet lines were the Red Star and the Dramatic, each having four ships and monthly sailings. The Red Swallowtail New York-London line, at this time, had eight ships in service, as follows:

Name of Packet	Year Built	Tonnage	Years of Service	Average Length of Westbound Passages in Days	Name of Packet	Year Built	Tonnage	Years of Service	Average Length of Westbound Passages in Days
GLADIATOR	1835	649	14	38	SIR ROBERT PEEL	1846	940	34	37
WELLINGTON	1837	726	17	34	INDEPENDENCE	1834	732	18	34
SWITZERLAND	1836	567	9	36	YORKTOWN	1847	1,150	21	37
PRINCE ALBERT	1843	884	10	35	LONDON	1848	1,145	15	38

The Liverpool (Blue) and London (Red) Swallowtail lines, sailing out of New York, operated sixteen vessels, collectively, after the Woodhull & Minturn fleet of packets was acquired in 1849.

"Bigger and Better" American Sailing Packets—1841-1850

Steam navigation on the Atlantic first affected the sailing packet trade during a period of business depression following the panic of 1837 and during an increased activity in the building of packets as evidenced by the organization of the Collins Dramatic Line. However, the transatlantic packet business quickly recovered its temporary setback and from 1842 to 1849 enjoyed a boom period in the carrying of both passengers and freight—even though the packets handled less mail, which, incidentally, gave the owners very little income. Packets described as "bigger and better" were placed in the New York transatlantic lines.

The following is a record of the ships and of their performances in service that were added to the ten regular New York transatlantic sailing packet lines throughout the ten-year period 1841-1850 inclusive:

Name of Line	No. of Vessels Added to Service 1841-1850 Incl.	Registered Tonnage Total	Registered Tonnage Average	Registered Tonnage Largest	Registered Tonnage Smallest	Average Length of Service in Years	Westward Passages in Days Average All Ships	Westward Passages in Days Shortest	Westward Passages in Days Longest
Black Ball	7	7,684	1,098	ISAAC WEBB 1,359	FIDELIA 895	17.6	32.9	YORKSHIRE 16	MANHATTAN and ISAAC WEBB 60
Red Star	5	5,346	1,069	CONSTELLATION 1,560	STEPHEN WHITNEY 868	10.8	33.2	WEST POINT 18	CONSTELLATION 59
Blue Swallowtail	9	10,779	1,198	ALBERT GALLATIN 1,435	HOTTINGUER 993	10.9	35.2	NEW WORLD 18	ASHBURTON 89
Dramatic	1	1,207	1,207	HENRY CLAY 1,207	HENRY CLAY 1,207	15.0	34.0	HENRY CLAY 23	HENRY CLAY 53
New Line	5	5,271	1,054	CONSTITUTION 1,327	ROCHESTER 714	5.6	34.2	CONSTITUTION 18	CONSTITUTION 56
Total of 5 Liverpool lines	27	30,287	1,122	CONSTELLATION 1,560	ROCHESTER 714	11.8	34.0	YORKSHIRE 16	ASHBURTON 89
Black X	8	7,928	991	SOUTHAMPTON 1,299	NORTHUMBERLAND 817	15.0	34.4	DEVONSHIRE and SOUTHAMPTON 19	VICTORIA 84
Red Swallowtail	8	7,398	925	YORKTOWN 1,150	SWITZERLAND 567	19.4	35.7	AMERICAN CONGRESS 21	LONDON 85
Total of 2 London lines	16	15,326	958	SOUTHAMPTON 1,299	SWITZERLAND 567	17.2	35.1	DEVONSHIRE and SOUTHAMPTON 19	LONDON 85
Havre Old Line	4	3,607	902	NEW YORK 991	ZURICH 817	15.5	33.8	HAVRE II 20	ZURICH 56
Havre Second Line	4	3,700	925	WILLIAM TELL 1,153	ONEIDA 791	11.8	37.0	ST. NICHOLAS 23	ST. NICHOLAS 63
Whitlock	5	4,703	941	GALLIA 1,190	SPLENDID 642	7.4	36.4	GALLIA 20	SPLENDID 73
Total of 3 Havre lines	13	12,010	924	GALLIA 1,190	SPLENDID 642	11.2	35.8	GALLIA and HAVRE II 20	SPLENDID 73
Total of 10 New York lines	56	57,623	1,029	CONSTELLATION 1,560	SWITZERLAND 567	13.2	34.7	YORKSHIRE 16	ASHBURTON 89

Fifty of the fifty-six packet ships mentioned above were built in New York shipyards, two in Boston, one in Newburyport, Mass. (making three all told in Massachusetts), two in Portsmouth, N. H., and one in Newcastle, Maine. Thirty-eight of the New York-built packets were launched from the yards of two builders; Webb and Westervelt & Mackey each constructed nineteen, Brown & Bell built ten, and Stephen Smith and C. Bergh & Company one each. Most of the packet lines were allied with some particular builder. During this period, Webb built all of the eleven packets put into service by the Black Ball (Liverpool) and Havre Old lines and four out of five of the ships of the Havre Whitlock Line. Westervelt & Mackey built fifteen out of the seventeen packets that entered the Black X (London), Red Star (Liverpool), and Second (Havre) lines, and Brown & Bell launched four of the five vessels that made up the fleet of the Liverpool New Line.

The largest packet ships built during the period herein referred to (1841-1850) were as follows:

Name of Packet	Line	Tonnage	Year Built	Builder
CONSTELLATION	Red Star, Liverpool	1,560	1849	Westervelt & Mackey, New York
ALBERT GALLATIN	Blue Swallowtail, Liverpool	1,435	1849	W. H. Webb, New York
NEW WORLD	Blue Swallowtail, Liverpool	1,404	1846	Donald McKay, Boston
ISAAC WEBB	Black Ball, Liverpool	1,359	1850	W. H. Webb, New York
CONSTITUTION	New Line, Liverpool	1,327	1846	Brown & Bell, New York
MANHATTAN	Black Ball, Liverpool	1,299	1849	W. H. Webb, New York
SOUTHAMPTON	Black X, London	1,299	1849	Westervelt & Mackey, New York
HENRY CLAY	Blue Swallowtail, Liverpool	1,207	1845	Brown & Bell, New York
GALLIA	Whitlock, Havre	1,190	1849	W. H. Webb, New York
OCEAN QUEEN	Black X, London	1,182	1850	Westervelt & Mackey, New York
ISAAC WRIGHT	Black Ball, Liverpool	1,161	1847	W. H. Webb, New York
CONSTANTINE	Blue Swallowtail, Liverpool	1,161	1850	Portsmouth, N. H.
QUEEN OF THE WEST	New Line, Liverpool	1,160	1843	Brown & Bell, New York
WILLIAM TELL	Second Line, Havre	1,153	1850	Westervelt & Mackey, New York
YORKTOWN	Red Swallowtail, London	1,150	1847	W. H. Webb, New York
DEVONSHIRE	Black X, London	1,149	1848	Westervelt & Mackey, New York
LONDON	Red Swallowtail, London	1,145	1848	W. H. Webb, New York
CORNELIUS GRINNELL	Red Swallowtail, London	1,117	1850	Donald McKay, Boston
LIVERPOOL	New Line, Liverpool	1,077	1843	Brown & Bell, New York
COLUMBIA II	Black Ball, Liverpool	1,050	1846	W. H. Webb, New York

Of these twenty sailing packet ships, seventeen were built in New York; two—the *New World* and the *Cornelius Grinnell*—were constructed by Donald McKay in Boston, and one was built at Portsmouth, N. H. Of the seventeen vessels launched from New York yards, eight were built by W. H. Webb, five by Westervelt & Mackey, and four by Brown & Bell.

W. H. Webb, of New York, who achieved the honor of building more tonnage than any other American shipbuilder prior to the Civil War and who was by far the most versatile of any United States designer and builder in the wood shipbuilding era, built his first transatlantic sailing packet (and took the entire responsibility for her design and construction) in 1836. This vessel was the *Oxford* of 752 tons, built for the Black Ball Line by the firm of Webb & Allen. Isaac Webb—the father of William H.—retired shortly before his death in 1840, and his famous son carried on the business with Allen as a partner until 1843, when Webb commenced to build on his own account. The *Oxford* proved to be a high-class packet. During her fourteen years of strenuous, steady service as a Black Ball liner (1836-1850), she averaged 34 days on her westbound passages from Liverpool to New York, port to port, making one passage in 21 days and never taking longer than 47 days. Based on her performance up to the end of 1847, Albion places her as one of the fastest of the Western Ocean packets and states that the average of her homeward runs to that time was only 32.6 days as against 32.0 days for the speedy *Independence,* 32.4 days for the *South America,* and 32.7 days for the *England,* all of which had built up a reputation for reliability and fast sailing. During the terrible "Liverpool Hurricane" of January 9, 1839, which destroyed the 651-ton *St. Andrew* of the Red Star Line and the 808-ton *Pennsylvania* of the Blue Swallowtail Line, the Black Baller *Oxford* was driven ashore near the mouth of the Mersey, but succeeded in getting off, and we are told that when surveyed later for damage, the vessel was found to be so staunchly constructed that the hull was pronounced "as sound as before she was wrecked."

During the first year (1843) that W. H. Webb built on his own account, having dissolved partnership with Allen, the packets *Montezuma* of 924 tons and *Yorkshire* of 996 tons were built for the Black Ball Line, the former by Webb & Allen and the latter by W. H. Webb. the famous *Yorkshire,* the queen of all transatlantic packets and the fastest liner built in the booming years of the sailing packet ship era, was the first vessel built by W. H. Webb personally in his own yard.

The *Montezuma* was fast in her early days, for Albion states that during her first five years of service the average length of her westward passages was only 31.2 days, being beaten in the transatlantic "shuttle" only by the record-holder *Yorkshire* (29.1 days) of the same (Black Ball) line—built in the same yard in the same year, 1843—and the big, fast *Henry Clay* of 1,207 tons, built by Brown & Bell in 1845 for the Liverpool Blue Swallowtail Line, which during her brief career prior to 1848 had a record of only 30.8 days for her westward passages. The *Montezuma,* which is credited with a fast 15-day eastbound passage to Liverpool, ran for eleven years as a Black Ball liner, until she was wrecked on Jones Beach, Long Island, May 18, 1854. At the time of the catastrophe, the packet had nearly five hundred emigrants aboard, but by efficient work all the passengers and crew were saved. The *Henry Clay* was partially destroyed by fire at her East River pier September 5, 1849, and was rebuilt and acquired by the Dramatic Line. She sailed in that service until 1865, having a life-time average of 34 days for her westward passages, Liverpool to New York, which is the same as that of the Black Baller *Montezuma.*

The *Fidelia* of the Black Ball Line, a packet of 895 tons built in 1845 by W. H. Webb, of New York, was reported to have crossed in 1852 from Boston to N. W. Lightship in 13 days and 7 hours, and some marine writers give the ship credit for a 17-day and 6-hour westward transatlantic crossing from some point off the British coast to Sandy Hook. However, the passage for a packet ship is reckoned from port to port, and the best westward completed crossing of the *Fidelia* is reported as 21 days, with an average of 33 days for all her westbound passages during her eighteen years' service in the line (1845-1863) and with her slowest crossing requiring 50 days. The *Fidelia* was sold in London during the Civil War.

The first *Columbia* (495 tons, built in 1821) was not the consistently fast and reliable performer that *Columbia II*—1,050 tons, built by Webb, New York, in 1846—proved to be. During twenty-three years of steady service in the North Atlantic as a Black Ball liner, the second

Columbia averaged 32 days on all her westbound crossings, a performance that for average time of passages and length of service combined was beaten by only two sailing packets, the *New World* (1,404 tons) of the Swallowtail lines and the *Great Western* (1,443 tons), another Black Baller, which operated as Western Ocean packets for thirty-four and twenty-seven years, respectively, and each averaged one day less than the *Columbia II* on her westward passages to New York.

A sailing packet worthy of special mention was the *Isaac Wright* of 1,161 tons (length 175 ft., beam 38.1 ft., depth 22.5 ft.), built by W. H. Webb, New York, for the Black Ball New York-Liverpool line in 1847. This packet saw steady service until she was burned at Liverpool in December 1859. During her twelve years of operation in the Atlantic "shuttle" (1847-1859), the *Isaac Wright* had an average of westbound passages, port to port, of 31 days; only five sailing packets could show a better record, and only three of the five could point to as many years of service. Her best passage westbound was a run of 21 days, and her worst performance was a crossing of 44 days. It has been stated authoritatively:

> The thirty-year packet era ended with a new speed record in its very last weeks. Captain David G. Bailey, who had set up the westbound record of sixteen days with the YORKSHIRE in 1846, took over the new Black Baller ISAAC WRIGHT for a single voyage. He sailed from New York on December 4, 1847, and arrived at Liverpool on the 17th, a passage of thirteen days port to port, which seems to have escaped the attention of those who make much of certain thirteen-day passages in the fifties.

The latter part of this quotation refers, evidently, to the two 13-day passages eastbound of the *Dreadnought,* one of 13 days 11 hours in 1854 and one of 13 days 8 hours in 1859, and to certain clipper ship claims; but there are other reported 13-day passages, such as that of the Black Ball packet *Fidelia* before mentioned and of the *George Washington* of the Blue Swallowtail Line from New York to Liverpool in 13 days 14 hours. There is also in the records a claimed eastward passage in 1850 of 13 days 12 hours from New York to an English Channel port of the packet *Southampton* of the London Black X Line.

Much was expected by both owners and builders of the *Isaac Webb,* constructed by W. H. Webb, New York, in 1850, and although well advertised and boosted, she never came up to expectations. This liner was of 1,359 tons; 188 feet long, 39.8 feet beam, and 28 feet deep. She operated as a packet in the Black Ball service for twenty-eight years (1850-1878), then went as a transient into general trade, and foundered in mid-Atlantic in 1880, when carrying a cargo of railroad iron from Antwerp to New York. As a packet, the *Isaac Webb* had an average time of westbound passages of 36 days. Her best run west was negotiated in 25 days, and her slowest required 60 days. This is not a particularly good average speed, for 79 sailing packets of the transatlantic packet era showed a better record, and 111 different regular packets made 206 westbound passages in 24 days or less, i.e., in better time than the 25-day fastest crossing of the *Isaac Webb*—port to port.

Donald McKay, of East Boston, Mass., built two good and fast Western Ocean packets —the *New World* and *Cornelius Grinnell*—for the New York regular lines during the years 1846-1850 inclusive and, while associated with William Pickett at Newburyport, had constructed the packet *John R. Skiddy* in 1845 for the Red Star (New York-Liverpool) Line. Later, the packet *Plymouth Rock* of 973 tons, constructed by McKay in 1849, which ran for some time in Train's Boston-Liverpool line, saw service for twenty-four years (1856-1880) in the New York-Liverpool Red Swallowtail Line, following which she was "sold Norwegian."

While McKay was associated with Pickett at Newburyport, they also built the New York transatlantic packet ship *St. George* of 845 tons in 1843, but this vessel, which carried the Red Cross, or St. George's Cross, house colors, did not operate in a regular line with scheduled sailings.

The following three packets were built by Donald McKay for New York lines operating on a regular schedule. Comparative records of their size, with particulars of ownership and performance, are set forth herewith:

Name of Packet	Tonnage	Year Built	Line	Service in Line	Length of Westbound Passages in Days: Average	Fastest	Slowest
NEW WORLD	1,404	1846	Liverpool and London Swallowtail lines	1846-1880 (34 yrs.)	31	18	42
CORNELIUS GRINNELL	1,117	1850	London Red Swallowtail	1850-1881 (31 yrs.)	33	24	48
JOHN R. SKIDDY	980	1845	Liverpool Red Star	1845-1850* (5 yrs.)	32	25	44

* The *John R. Skiddy* was wrecked on March 30, 1850, near Wexford on the southeast coast of Ireland.

The *New World,* which ran for many years in the Liverpool Blue Swallowtail Line and was then transferred to the London Red Swallowtail Line, ranks as probably the fifth fastest packet in the Western Ocean trade, considering length of service. She was beaten in the number of years of operating as a liner by only the *Liverpool II* (1,077 tons) of the Liverpool New Line and later of the Swallowtail lines to Liverpool and London, which was in service for thirty-seven years (1843-1880), and equaled by only the *Sir Robert Peel* (940 tons), built by Webb, of New York, in 1846, which ran in the Liverpool Blue and London Red Swallowtail lines for thirty-four years, the period and the years of her service being identical with those of the *New World* (i.e., 1846-1880). There were four packets with from seven to eighteen years of service that showed a better westbound average than the *New World* for all voyages and five that made a faster westward passage than her record of 18 days. There were also eleven regular packets that did better on their slowest passage than the 42-day worst passage of the *New World.* The following nine transatlantic sailing packets showed an average of 31 days or better on their westbound crossings, port to port:

Name of Packet	Built	Builder	Line	Service in Line	Length of Westbound Passages in Days: Average	Fastest	Slowest
AMAZON (1,771 tons)	1854	J. A. Westervelt, New York	Black X	1854-1868 (14 yrs.)	28	24	36
YORKSHIRE (996 tons)	1843	W. H. Webb, New York	Black Ball	1844-1862 (18 yrs.)	29	16	58
DEVONSHIRE (1,149 tons)	1848	Westervelt & Mackey, New York	Black X	1848-1861 (13 yrs.)	30	19	41
PALESTINE (1,751 tons)	1854	J. A. Westervelt, New York	Black X	1854-1861 (7 yrs.)	30	25	36
NEW WORLD (1,404 tons)	1846	D. McKay, Boston	Blue and Red Swallowtail	1846-1880 (34 yrs.)	31	18	42
ISAAC WRIGHT (1,161 tons)	1847	W. H. Webb, New York	Black Ball	1847-1859 (12 yrs.)	31	21	44
GREAT WESTERN (1,443 tons)	1851	W. H. Webb, New York	Black Ball	1851-1878 (27 yrs.)	31	24	43
NEPTUNE (1,406 tons)	1855	W. H. Webb, New York	Black Ball	1855-1877 (22 yrs.)	31	26	36
PHOENIX (1,487 tons)	1853	Near Portland, Maine	Red Star	1856-1858 (2 yrs.)	31	26	35

The *Cornelius Grinnell,* launched by McKay at East Boston in June 1850, was not as fast a packet as the *New World,* and she was 287 tons (or 20 per cent) smaller than the ship that McKay had built for the Liverpool Blue Swallowtail Line four years earlier. The "*Grinnell,*" whereas not spectacular, was a good sailer and a very sturdily built and heavy vessel. It was claimed by both builder and owners that she was "the strongest merchantman of her size afloat." Both McKay-built New York Swallowtail Line transatlantic packets sailed in that service as long as the lines were in existence. The *Cornelius Grinnell,* following her last voyage as a packet, became a transient. After being seriously damaged by fire, the ship was sold at auction on March 27, 1883, when thirty-three years old, and converted into a towing coal barge for coastwise work.

The New York-Liverpool Red Star Line added four new sailing packets to its fleet during the forties; these were put into the service during the last half of the decade. A fifth ship, the *Underwriter,* built in 1850, entered the line early in 1851, and after the Red Star packet service was discontinued in 1867, she continued to sail alone between New York and Liverpool under the old flag until she put into Bermuda leaky and was wrecked there March 7, 1869. The *Underwriter* was a strange name for a ship, but the Red Star Line had been unlucky with its packets. The *St. Andrew* was wrecked in the "Liverpool Hurricane" of 1839; the *Sheffield* grounded on the Sandy Hook bar while trying to enter New York Bay in November 1843, sank, and was condemned. The *United States* foundered at sea in December 1844 (and an old Red Star liner, the *England,* which had been sold to the Black Ball Line, disappeared at the same time). The *Stephen Whitney,* on November 10, 1847, piled up on the rockbound Irish coast near Cape Clear and was the worst transatlantic packet wreck of history, as ninety-two lives were lost. The *John R. Skiddy,* built by Donald McKay, was wrecked near Wexford, Ireland, March 30, 1850, when only five years old. We are told that the Red Star Line named the last vessel that it ever built to run as a packet in the transatlantic service the *Underwriter* "in gratitude to the marine insurance companies for their generosity in connection with some of its packet wrecks."

The names, particulars, and records of the last five ships built for the Red Star Line are presented comparatively herewith. (A still later ship to enter the service, the *Phoenix* of 1,487 tons, is omitted, as she was a clipper built in 1853, and she ran in the line for only two years, from 1856 to 1858.)

Name of Packet	Year Built	Builder	Service in Line	Length of Westward Passages in Days		
				Average	Fastest	Slowest
WATERLOO (892 tons)	1845	Westervelt & Mackey, New York	1845-1853 (8 yrs.)	32	21	49
JOHN R. SKIDDY (980 tons)	1845	McKay & Pickett, Newburyport, Mass.	1845-1850 (5 yrs.)	32	25	44
WEST POINT (1,046 tons)	1847	Westervelt & Mackey, New York	1847-1863 (16 yrs.)	32	18	45
CONSTELLATION (1,560 tons)	1849	Westervelt & Mackey, New York	1849-1867 (18 yrs.)	35	22	59
UNDERWRITER (1,168 tons)	1850	Westervelt & Mackey, New York	1851-1867 (16 yrs.)	33	22	46

The *West Point* was the fastest vessel built as a packet of all the Red Star fleet throughout its history, and her best westward crossing was eight days faster, port to port, than the shortest passage made by the clipper *Phoenix,* which was 441 tons (or 43 per cent) larger than the *West Point.* The *Constellation* was a big-carrying emigrant ship and rather slow, but she was fully as fast as the *Manhattan* (1,299 tons) of the Black Ball Line, the *Albert Gallatin* (1,435 tons) of the Blue Swallowtail Line, and the *American Congress* (863 tons) of the Red Swallowtail (London) Line and much slower than the *Southampton* (1,299 tons) of the London Black X Line and the *Gallia* (1,190 tons) of the Havre Union Line, all of which packet ships were built in the same year (1849).

The three packet ships built for the Liverpool New Line in 1843-1846 *(Liverpool II, Queen of the West,* and *Constitution)* and the *Hottinguer,* built in 1840, which had entered the line when it commenced service in 1843, were all taken over by the Liverpool Blue Swallowtail Line in 1849. The *Liverpool II* (1,077 tons) was to become famous for her longevity in packet service (six years in the New Line, six in the Blue and twenty-five in the Red

Swallowtail lines—a total of thirty-seven years, twelve of which were in the Liverpool and twenty-five in the London service). The *Constitution* (1,327 tons), built by Brown & Bell, New York, was a fast ship; she averaged 32 days on her westbound passages, port to port, and made one crossing from Liverpool to New York in 18 days. This packet was destroyed by fire in the Mersey on December 5, 1855; she had just completed a passage from New York and was about to proceed to the dock when the fire broke out and got quickly out of control. The *Hottinguer* (993 tons) was a slow vessel and was wrecked off the southeast coast of Ireland January 12, 1850, after about seven years of packet service. Capt. Ira Bursley got the passengers and most of the crew ashore safely, but elected to stay aboard with a handful of men who had volunteered to remain in the hope of saving the packet; during the night, a heavy storm blew up, and all on board were lost. A passenger who crossed from Liverpool to New York in the *Hottinguer* in 1845 wrote of the mixed crew on the vessel and declared that, in a relatively small crew, there were ten nationalities represented—Englishmen, Americans, Spaniards, Italians, Frenchmen, and Dutch, with one Scot, one Dane, one Prussian, and one Portuguese. In bad weather, the officers were handicapped in handling the ship, as so many of the crew could not understand English.

The Liverpool Blue Swallowtail Line, in addition to McKay's *New World* (1,404 tons), built four new packets during the decade ending with 1850; these were the extremely slow *Ashburton* (1,015 tons), built by Westervelt & Mackey in 1842, which averaged 39 days on her westward passages during twenty-one years of service (1842-1863) and required 89 days to complete one of these crossings; the *Henry Clay* (1,207 tons), a good packet of fair speed built by Brown & Bell, New York, in 1845, which burned at her East River pier September 5, 1849, and was condemned and rebuilt for the Dramatic Line, under which service she sailed until 1865; the *Albert Gallatin* (1,435 tons), built by Webb, of New York, in 1849, which was a good sea boat but rather mediocre in sailing and was sold to the British during the Civil War; the *Constantine* (1,161 tons), built at Portsmouth, N. H., in 1850, which was very slow, but, nevertheless, saw eighteen years of service in the Liverpool run, following which she ran for another thirteen years in the London Red Swallowtail Line—a total of thirty-one years engaged in regular transatlantic packet service.

In addition to the McKay-built *Cornelius Grinnell* (1,117 tons) already described, the London Red Swallowtail Line built five transatlantic packets during the decade 1841-1850 inclusive. These were the *Prince Albert* of 884 tons, which entered the service in 1843; the *Yorktown* of 1,150 tons, built in 1847, which ran in the line for twenty-one years, or until 1868, when she put into the Azores in distress and was condemned; the *London* of 1,145 tons, launched in 1848 (a sister of the *Yorktown*), which remained in the service for fifteen years; and the *American Congress* of 863 tons, built at Newcastle, Maine, in 1849, which, notwithstanding her small size, ran in the line for thirty years (1850-1879), showed a fair average speed, and made one westbound crossing of 21 days from Portsmouth to New York, port to port. The Red Swallowtail liner *Sir Robert Peel* of 940 tons, which entered the service in the late forties and sailed thirty-four years as a Western Ocean packet, started her career as a Liverpool Swallowtail liner, for which trade she was too small, and was soon transferred to the London run, which required smaller vessels than the more busy and much more competitive Liverpool service.

The London Black X Line packet ship *Toronto* (Captain Tinker) made a surprising westbound passage in early 1846, beating all steamers and sailing vessels in the winter crossing from European ports to either New York or Boston. The *Toronto* of 631 tons was built by C. Bergh & Company, New York, in 1835 and was eleven years old when she made a run of 41 days from Portsmouth to New York against westerly gales and by dodging heavy ice, beating the New York Cunard steamer "by several days" and a new Boston steamer by a week. She was heralded in the public press as "the first arrival at New York from Europe in six weeks." It is said that an issue of the London TIMES (then forty-two days old) brought across the ocean by the *Toronto* was copied in a special edition of the New York

HERALD and published the afternoon of the ship's arrival. Captain Tinker was fortunate on this eventful crossing in finding a way out of "huge fields of broken ice" by steering north instead of south, while all of the other vessels—steam and sail—on the crossing, having turned south to seek a chance to escape, remained "in the ice and bitterly cold northwesterly gales for weeks." Whereas the sailing packets on several occasions beat the steamers of the forties and fifties on the eastward crossing, it was very seldom that a sailing vessel—because of the predominating westerly winds—could make better time than a steamer on the westbound run.

In addition to the *Caledonia* (647 tons) of the Liverpool Black Ball Line and the *Columbia I* (492 tons) of the London Red Swallowtail Line, the packet *Northumberland* (817 tons) of the Black X New York-London line (sailing from Portsmouth) is credited with a 17-day run westbound. The *Northumberland* was built by Westervelt & Mackey, New York, in 1844, and she saw thirteen years of packet service (1844-1857). Although she made an unusually fast run west to New York of only 17 days, her average in service was 35 days westbound, and her longest run was a crossing of 60 days. The *Northumberland* was abandoned at sea on December 4, 1857, in Lat. 47° N., Long. 27° W., as a result of severe winter gales and heavy seas, while making a passage from New York to London; no lives were lost. Another London Black X liner, the *Hendrik Hudson* (823 tons; built by Westervelt & Mackey, New York, in 1841), after fourteen years of service in the line, succumbed to heavy gales and foundered at sea in 1855, but again, fortunately, there was no loss of life.

The year before the *Northumberland* was built, Westervelt & Mackey had constructed the packet *Victoria* of 860 tons for the London Black X Line and the *Prince Albert* for the London Red Swallowtail Line. During the same year (1843), W. H. Webb built the Black Baller *Montezuma* and the peerless *Yorkshire,* and Brown & Bell had constructed the famous long-lived *Liverpool* and the much-heralded *Queen of the West* for the Liverpool Blue Swallowtail Line. When Queen Victoria of Britain visited the New York-London packet named after her, one of the royal entourage inquired why a transatlantic liner had not been named "*Victoria*" until the queen had been on the throne for six years, and the diplomatic Captain Morgan quickly replied that the line had not launched a ship since 1837 that it considered worthy to bear the gracious queen's name. The *Victoria* was boosted as an exceedingly fine packet, but she was a disappointment in speed and much slower than the vessels built generally during the forties. Her average westbound passage of 38 days was nine days longer than that of the *Yorkshire;* while her best crossing occupied 24 days, and one passage required 84 days to complete. The *Victoria,* however, probably because of the name, was popular with the British people, and she ended her days under the British flag, being sold abroad during the Civil War. The London Black X packet *Devonshire* of 1,149 tons, built by Westervelt & Mackey in 1848, was the fastest ship of the line and averaged only 30 days on the westbound passage during her thirteen years (1848-1861) in packet service. This vessel put into Bermuda in late 1861 damaged by gales and was "sold British." The *Southampton* of 1,299 tons, built in 1849 (the year after the *Devonshire*), was a very popular and reputedly fast packet, and like all the ships built for the London Black X Line after 1835, she was constructed at the Westervelt (New York) yard. The *Southampton,* under the command of Capt. E. E. Morgan, was reported to have sailed from Sandy Hook at 11:00 p.m. on June 8, 1850, and landed her passengers at Falmouth, England, after a passage of 13 days and 12 hours; like the *Devonshire,* she is credited with a westbound passage, port to port, in only 19 days. It was said that the *Southampton* was a very reliable and consistently good sailer and sea boat during her sixteen years of packet service (1849-1865) in the New York-London run. Her westbound passages averaged 33 days, port to port, but her slowest crossing occupied only 43 days, and both the *Southampton* and the *Devonshire* were considered by the marine fraternity as "lucky" vessels.

Webb, of New York, built nine packets for the Havre Union Line (a combination of the Havre Old and the Whitlock lines) during the years 1841-1850 inclusive, and a tenth new ship was added to the fleet, the *Germania* of 996 tons, built at Portsmouth, N. H., in 1850. Webb & Allen built the *Argo* of 967 tons in 1841, but W. H. Webb constructed the following eight packets for the New York-Havre line:

Name of Packet	Tonnage	Year Built	Service in Line	Length of Westbound Passages in Days		
				Average	Shortest	Longest
ZURICH	817	1844	1844-1863 (19 yrs.)	35	21	56
HAVRE II	870	1845	1845-1863 (18 yrs.)	34	20	53
ADMIRAL	929	1846	1846-1863 (17 yrs.)	33	22	46
BAVARIA	908	1846	1846-1853 (7 yrs.)	33	23	44
SPLENDID	642	1846	1847-1853 (6 yrs.)	41	21	73
NEW YORK	991	1847	1847-1855 (8 yrs.)	33	22	48
GALLIA	1,190	1849	1849-1852 (3 yrs.)	33	20	49
SAMUEL M. FOX	1,062	1850	1851-1855 (4 yrs.)	34	25	43

Outside of the performance of the *Splendid,* which was a slow and unlucky ship, the uniform good sailing of the other seven vessels of this Webb-built packet fleet running between New York and France was quite remarkable. The three ships that were in the service for an average of eighteen years each averaged 34 days on the westbound passages, port to port, in these fifty-four ship-years, and the average of the trio's shortest crossings was 21 days and of the longest a scant 53 days. The other four ships averaged five years in the run and in these twenty ship-years averaged about 33 days on the westbound completed passages; the average of the quartet's shortest crossings was 22½ days and the longest only 46 days. The *Zurich* and *Admiral* were "sold British" during the Civil War, and the *Havre II* was sold at the same time to the Norwegians. None of these Havre Union Line vessels were particularly outstanding, but while in service they proved to be good sea boats and excellent packets, which carried well and were uniform fast sailers for their size.

During the decade 1841-1850, Westervelt & Mackey, New York, built all the four vessels that were ordered for the New York-Havre Second Line, which packets were as follows:

Name of Packet	Tonnage	Year Built	Service in Line	Length of Westward Passages in Days		
				Average	Shortest	Longest
ONEIDA	791	1841	1841-1850 (9 yrs.)	39	28	59
ST. NICHOLAS	797	1841	1841-1859 (18 yrs.)	38	23	63
ST. DENIS	959	1848	1848-1856 (8 yrs.)	35	25	52
WILLIAM TELL	1,153	1850	1850-1862 (12 yrs.)	36	25	60

In 1851, Westervelt & Mackey built a medium clipper for the line—the *Mercury* of 1,350 tons—which ran in the service for eighteen years (1851-1869). She averaged 33 days on her westbound passages, which was the same as four much smaller Webb-built packets (built 1846-1849), which operated in the Havre Union Line. The *Mercury's* fastest westbound crossing of 23 days was equaled by the Webb-built packet *Bavaria* and beaten by the

22 days of the *Admiral* and *New York,* by the 21 days of the *Zurich* and the *Splendid,* and by the 20-day passages of the *Havre II* and *Gallia* from Havre to New York, port to port. The careers of two of the four before-mentioned Havre Second Line packets ended disastrously. The *Oneida* was wrecked near Guernsey in January 1850, while the *St. Denis,* bound from New York for Havre, sank in a gale in January 1856 when 180 miles east of Sandy Hook, with a loss of thirty-five lives out of the forty-seven persons aboard, only two mates and nine seamen being saved.

The American transatlantic sailing packets of the 1840's were without doubt splendid and impressive ships in their day and were so proclaimed in Britain. In the thirties and forties, before the clipper ships came into the limelight and caught the popular imagination as "greyhounds of the sea," the magnificence of each new and larger packet built was extolled by the press. The climax of superlatives was reached, it would seem, in 1843, when Brown & Bell, of New York, launched the *Queen of the West,* a large sailing packet for her day of 1,160 tons and measuring 179.3 ft. long, 37.5 ft. beam, and 22 ft. deep. Concluding the description of this "splendid and superior" ship, a "new packet of maximum size," we read in the press of the day: "The *Queen of the West* is the noblest work of man, and her commander is the noblest work of God," which seems to suggest that the skipper was—to say the least—popular with, or highly esteemed by, the editor.

The *Queen of the West* was a good sailer and ranks about the twenty-eighth in the record list of packets, based on performance in the westbound passage. She was not particularly noble nor outstandingly impressive, and in her twelve years of service on the Atlantic "shuttle" she was not comparable in any way with the *Yorkshire,* built at the same time (1843) by Webb, of New York. The *Queen of the West's* best crossing westbound was a run of 22 days as against a 16-day passage of the *Yorkshire.* Her average time of crossing westbound was 33 days during twelve years of service as against only 29 days for the *Yorkshire* during her eighteen years of steady packet work in the Black Ball Line. The *Queen of the West* was 164 tons, or 16.5 per cent, larger than the *Yorkshire,* and she was wrecked on Langharne Sands, Wales, in 1855, but later salvaged, rebuilt, and given British registry.

Something of the safety, sturdiness, dependability, and general efficiency of the old New York transatlantic sailing packets can be gathered from the tribute of the New York HERALD to a one-time popular liner as the "fine old veteran" was about to leave the North Atlantic service after experiencing every conceivable kind of weather and seas during her eastward and outbound runs, in by far the most difficult trade route of the globe, throughout long years of continuous arduous service: "For twenty-nine years she battled with the Atlantic gales, making 116 round passages without losing a seaman, a sail, or a spar. She brought thirty thousand passengers to this country from Europe, and her cabins have witnessed fifteen hundred births and two hundred marriages." This evidently refers to twenty-nine years of service in the north transatlantic freight and passenger trade as a packet and general trader, and nothing is said in regard to the number of deaths aboard. The statement of never losing "a sail or a spar" should be multiplied by a coefficient of enthusiasm, for no vessel could have seen the service of a hard-driven Western Ocean packet without losing canvas and an occasional spar. It has been well said of this transatlantic sailing packet service: "It took a man every inch a seaman to reach an American port from Europe with spars and sails intact and keep his ship off the Long Island and New Jersey coasts in midwinter gales of thick snow and sleet." The King of the West Wind made the homeward passage of the small wooden American square-rigged packets a real hazard at all times, and fog and ice were menaces that had to be reckoned with as well as westerly gales and heavy turbulent seas. There was no transatlantic liner that saw Western Ocean packet service for twenty-nine years and retired before the Civil War, although among the later ships the *Isaac Webb* (1,359 tons) and *Great Western* (1,443 tons) had been in the Black Ball service for twenty-eight and twenty-seven years, respectively, when the line ceased operating in 1878, and when the London Red Swallowtail Line suspended in 1880-1881 the *Liverpool* (1,007 tons) had sailed as a packet for thirty-seven years, the *Sir Robert Peel* (940 tons) and *New World* (1,404 tons) each for thirty-four years, and the *Cornelius Grinnell* (1,117 tons) for thirty-one years. However, after the Civil War, the packet service was not as strenuous and exacting and the ships were not driven as they had been prior to the mid-fifties.

The YORKSHIRE—*Queen of the Western Ocean Packets*

The fastest vessel of the Black Ball Line and the ship generally acclaimed as the fastest of all transatlantic sailing packets was the *Yorkshire* of 996 tons, "a full-bodied sturdy ship" built by W. H. Webb in 1843, which for eighteen consecutive years (1844-1862) averaged 29 days for her westbound, or "uphill," crossings (notwithstanding one heartbreaking passage of 58 days against "terrific westerly gales and mountainous seas") and, in 1846, made the record—and never beaten—time of 16 days in a passage from Liverpool to New York. The *Yorkshire* (Capt. David G. Bailey) arrived at Sandy Hook November 17, 1846, and at the city of New York at noon of November 18, having left the city of Liverpool on November 2 and completed a passage, city to city, of 16 days (see New York HERALD November 19, 1846). On ordinary reckoning from light to light, from rock to light, or land to land as later used by clippers, other sailing and steam vessels, this crossing would have been reported and considered as a passage of 15 days or possibly less.

A later Black Baller, the *Harvest Queen* of 1,383 tons, built in 1854 (also by Webb), is credited in 1857 with equaling (within a few hours) the 16-day westbound crossing of the *Yorkshire;* but the *Harvest Queen's* average for passages on the homeward course was 34 days, or five days longer than that of the *Yorkshire,* and the *Harvest Queen's* average speed record was not affected by any notoriously long passages due to extraordinary, adverse sailing conditions. (The longest westbound crossing of the *Harvest Queen* was 44 days.) In later years, transatlantic speed honors were claimed by the London Black X Line for its *Amazon* of 1,771 tons, "the largest of all packets," with an average of between 28 and 29 days for westbound passages during fourteen years of service (1854-1868) in the New York-Portsmouth (London) run; but this big and fast vessel was never considered by authorities as fast a packet as the much smaller and older *Yorkshire,* and she never came within eight days of equaling the 16-day westward crossing of "the queen of all Western Ocean packets." The *Amazon* was 775 tons, or 78 per cent, larger than the *Yorkshire* and was built in the clipper ship era (1854) by J. A. Westervelt, of New York, eleven years after the *Yorkshire* was launched.

A comparison of the dimensions and particulars of the *Yorkshire, Harvest Queen,* and *Amazon* is of interest:

Name of Packet	Year Built	Builder	Tonnage	Dimensions in Feet and Inches: Length	Beam	Depth of Hold	Line	In Service
YORKSHIRE	1843	W H Webb, New York	996	166-6	36-2	21-0	Black Ball, Liverpool	1844-1862 (18 yrs.)
HARVEST QUEEN	1854	W. H. Webb, New York	1,383	188-3	40-0	28-6	Black Ball, Liverpool	1854-1875 (21 yrs.)
AMAZON	1854	J. A. Westervelt, New York	1,771	216-0	42-0	27-5	Black X, London	1854-1868 (14 yrs.)

The *Yorkshire* and the *Harvest Queen,* both built by W. H. Webb, of New York, and both operating in the New York-Liverpool Black Ball Line, were the only sailing packets in the transatlantic packet era of 1818-1881 (a period of sixty-three years) to make a crossing westbound from any European port to New York in 16 days or better, port to port, and no sailing vessel on the Western Ocean, clipper ship or otherwise, at any time during the era of sail (wood or iron) has equaled the performance of the *Yorkshire* on the western run, port to port or dock to dock.

The *Amazon* was not comparable with the Webb packets as to type or with the real transatlantic sailing packets built prior to mid-century, and the craze for speed that was associated with the California Gold Rush and the finding of gold in Australia shortly thereafter influenced her modeling and sail plan. The clipper packets, or large Western Ocean packets whose design was influenced by clipper ship construction, had sharper models and did not carry either the deadweight or bulk (volume) cargoes of the real, perfected transatlantic sailing packets of the forties, of which the *Yorkshire* was the finest example—and well deserving of the title of "queen of Atlantic packets" bestowed upon her. The big, sharper-modeled and powerful *Amazon* had the reputation of being "the luckiest of Western Ocean packets" as far as weather and sailing conditions were concerned. Throughout her career in the North Atlantic, she was fortunate enough to escape such tremendous and sustained westerly gales as held the *Yorkshire* back, on one occasion, to a 58-day crossing and on another to a 51-day westward passage. The longest westbound crossing of the *Amazon* occupied only 36 days—a record not so much for fast sailing as for good luck; but her fastest passage required 24 days, and there were 68 other crossings equally good and at least 137 that were from one to eight days faster. The *Yorkshire* showed the influence in design of Capt. "Nat" Palmer and his speedy Dramatic Line transatlantic packets built in 1835-1838, whose models, incidentally, were based upon the experience in ocean sailing of the Webb-designed and built, shallow-draft and very fast New York-New Orleans sailing packet *Natchez.* These vessels all had a flat floor and were full-built ships and distinctly packets as to type in both model and rig. It was such ships as the *Yorkshire* that influenced advocates of sail at mid-century and in the early 1850's to claim that "steam is too dangerous, too uncomfortable, too dirty, too shaky, too expensive," and even "too slow" and that it had a place only as "an humble auxiliary to sail."

It is surprising how some historians distort the facts. Lubbock, the English maritime writer, describes the packet *Fidelia* (895 tons) as "the clipper of the Black Ball fleet"; he speaks of her as "a typical packet ship of 969 tons register" and is authority for the statement that she "ran from New York to the North West Lightship in 13 days, 7 hours and from the North West Lightship to Sandy Hook in 17 days, 6 hours." Not a single Black Ball liner was a "clipper" in any sense of the word, and to the end of the service the vessels used were purely "packets" in model and rig and quite distinctive from "clippers" or even "medium clippers." Whereas the sailing performances of the Black Baller *Fidelia* as reported by Lubbock are quite possible, no dates or supporting data are given; but if true, such a sailing record would not warrant the *Fidelia's* being acclaimed as the greyhound or "clipper of the Black Ball fleet." She was built by Webb in 1845, a year and a half after the *Yorkshire,* was operated in the line for eighteen years (1845-1863), and was sold in London during the Civil War. The fastest authenticated westbound passage of the *Fidelia* from Liverpool to New York was a fast run of 21 days, and this was five days slower than the 16-day crossing made by the *Yorkshire.* Of thirty-three Black Ball liners entering the service during the period 1822-1855 inclusive, nine made westbound passages of 21 days or less, and of nineteen Black Ball packets built during the years 1832-1855 inclusive, eight held average westbound passage records either equal or superior to the 33-day average held by the *Fidelia.*

The following table has been prepared based on figures compiled for the average length of westbound passages of eight of the fastest and most outstanding Western Ocean packets up to 1848:

Name of Packet	Line	Tonnage	Average Length of Westbound Passages	Entered Service	Name of Packet	Line	Tonnage	Average Length of Westbound Passages	Entered Service
			Days					*Days*	
YORKSHIRE	Black Ball, Liverpool	996	29.1	1844	INDEPENDENCE	Blue Swallowtail, Liverpool	732	32.0	1834
HENRY CLAY	Blue Swallowtail, Liverpool	1,207	30.8	1845	SOUTH AMERICA	Black Ball, Liverpool	605	32.4	1832
MONTEZUMA	Black Ball, Liverpool	924	31.2	1843	OXFORD	Black Ball, Liverpool	752	32.6	1836
GARRICK	Dramatic, Liverpool	895	31.3	1837	ENGLAND	Red Star and Black Ball, Liverpool	729	32.7	1834

Albion also gives the following five Western Ocean packets as the fastest in the service based on the average length of the westward passages on their first recorded fifteen voyages:

Name of Packet	Length of Westward Passages in Days: Average	Fastest	Slowest	Year Built	Builder	Line	Principal Captain
YORKSHIRE (996 tons)	29.1	16	51	1843	W. H. Webb, New York	Black Ball, Liverpool	D. G. Bailey
NEW WORLD (1,404 tons)	29.9	18	42	1846	D. McKay, Boston	Blue Swallowtail, Liverpool	H. Knight
GARRICK (895 tons)	31.0	18	46	1836	Brown & Bell, New York	Dramatic, Liverpool	A. S. Palmer
INDEPENDENCE (732 tons)	31.0	21	44	1834	S. Smith, New York	Blue Swallowtail, Liverpool	E. Nye
SOUTH AMERICA (605 tons)	34.0*	24	69	1832	Brown & Bell, New York	Black Ball, Liverpool	C. H. Marshall and R. H. Waterman

* Except for one slow passage of 69 days (next slowest was 37 days), the *South America* averaged 31.5 days for 14 passages, and she has been described as "the first of the new fast packets of the middle period."

It has been authoritatively said, "No London or Havre packet approached these Liverpool liners in speed." Not only the general average but also the close conformity of the length of the trips, winter and summer, was impressive. The *Yorkshire* clearly led the field in individual ships in the forties and most of the fifties, but during the late fifties and sixties "the Black X *Amazon,* largest of all the Western Ocean sailing packets, was running up an average which rivaled the *Yorkshire* when the period ended." However, it would seem that the *Amazon's* speed reduced perceptibly with the years, for Albion refers to her sailing performances as "very fast at outset"; whereas the *Yorkshire,* as long as she sailed in the Atlantic "ferry," was outstanding and consistently fast. But the *Yorkshire* was not a lucky ship in escaping bad weather, as were the *Amazon* and such ships as the *New World* (1,404 tons), *Palestine* (1,751 tons), *Patrick Henry* (880 tons), *James Foster, Jr.* (1,410 tons), and *Neptune* (1,406 tons). The *Yorkshire* encountered favorable sailing conditions on four of her first fifteen westbound passages, average or "expected" sailing conditions against the westerlies on nine, and very severe adverse conditions on the two others. Yet she averaged only 29.1 days on all of these crossings, making thirteen (87 per cent) of them in 32 days or better, nine (60 per cent) in 28 days or better, and four of them in 25 days or under. No other packet showed so large a percentage of her westward passages under either 32 or 28 days.

It was in May 1846 that the *Yorkshire* brought important political news from England and, in conjunction with Bennett's enterprise in having a man board the packet not far from

Montauk Point and race into New York by land, made a famous "news beat." This, however, was the last occasion when a sailing packet brought the latest important news from England, as the steamers displaced the sailing packets as the more rapid, consistent carriers of dispatches across the Western Ocean. Referring to the record transatlantic westbound sailing of the *Yorkshire* (Capt. D. G. Bailey), made in November 1846 (the second voyage after the one on which Bennett had picked up political news in regard to the British Corn Laws off Montauk and speeded it by horse and a locomotive run on the Long Island railroad into New York), Albion says:

> She sailed from Liverpool on November 2. She deserved her crossing honors more than the other record breakers, for she had the fastest general average of any of the one hundred and fifty ocean packets, and the hard-driving Bailey rated a similar distinction among captains. She arrived at New York on the 18th, a passage of sixteen days. Coming as this did far into the steamship period, it was particularly gratifying for the champions of the "canvas back" liners. It was pointed out that her run was faster than the average westbound passages of the steamer GREAT WESTERN. Among her passengers, moreover, were several who had originally sailed for New York on the iron steamship GREAT BRITAIN, the largest afloat. She had been wrecked on the Irish coast; they had shifted to the Black Ball and yet arrived in good steamship time.

In the summer of 1846, much was made of the fact that news of the actual repeal of the Corn Laws reached New York in twenty-two days by Cunard steamship from Liverpool to Boston and transmission by the newly opened telegraph line from Boston to New York; but a few months after this, the sailing packet *Yorkshire,* without the aid of either express couriers or the telegraph, put the Liverpool newspapers of November 2, with the news of Britain, in the hands of New Yorkers sixteen days later. The *Yorkshire* was famous as the sailing packet that "brought the news to New York ahead of the Cunarders," and when she reached her destination, we are told, among the passengers was a group of girls of a Viennese ballet corps who had left England on the S.S. *Great Britain* and been transferred to the fast Black Ball liner, and they "danced the decks with joy as the *Yorkshire* came up through the Narrows" in record time and about two weeks ahead of their expectations.

The *Yorkshire* not only made a record 16-day westbound run from Liverpool to New York, port to port, which was a 15-day crossing from light to light, but also is credited with a 14-day passage eastbound and several other very fast crossings both east and west.

Possibly a good measure of the credit of some of the speed performances of the *Yorkshire* is due to her most famous skipper, Capt. David G. Bailey, who was in command of her when she made her record and finest runs, although it was well said, "The *Yorkshire* is fast under any master; she is that sort of a packet." An enthusiastic contemporary of Captain Bailey said of him in 1848: "There is not a single man on the continent who can refer to half as many short passages as Captain Bailey can." At that time, Bailey had been in command of the *Yorkshire* for going on five years, except that in late 1847 he took the Black Baller *Isaac Wright* (1,161 tons) for one voyage. In this new Webb-built liner, he left New York on December 4 and arrived at Liverpool December 17, 1847, having made a record passage of 13 days, which most marine historians have overlooked when they have sought to establish and glorify sailing performance records in the fifties of the later fine-lined heavily canvased clipper ships. Captain Bailey, after his splendid single voyage on the *Isaac Wright,* returned to the *Yorkshire,* his favorite ship, but apparently in 1849 he was moved to the *Isaac Wright* again. Prior to taking command of the *Yorkshire* in 1844, Captain Bailey was captain of the Black Ball liner *South America* of 605 tons for over four years (1840-1844) and previous to that was in the *Orpheus* of 573 tons, of the same line, during the years 1837-1840. While he was in these packets, the ships sailed well and made excellent time. The average westward passage for the *South America* was only 32 days, with her best crossing made in 23 days, during her eleven years of service in the line (1832-1843); the *Orpheus* averaged 33 days during her five years of service (1834-1839) as a Black Baller, while her best crossing westward was made in 24 days.

The end of the *Yorkshire* was as tragic and mysterious as her career throughout a period of over eighteen years was brilliant. She sailed from New York on February 2, 1862, during the Civil War, and disappeared—or in marine parlance "went missing."

"Ill-Luck of the Red Starrers" under Kermit's Management

Basil Lubbock writes of "Robert Kermit's New York-Liverpool Line" and mentions as its most noteworthy packets the *St. Andrew, Virginian, West Point,* and *Constellation,* which were Red Star Line ships. Robert Kermit (son of Capt. Henry Kermit, a well-known New York shipmaster), in the very early thirties, operated two vessels between New York and Liverpool and in 1834 added two more ships in order to inaugurate a new line. This line ceased to function in 1835, and Kermit influenced "wealthy backers" (Stephen Whitney and Nathaniel Prime) to buy control of the old and well-established Red Star, or Second, Line in 1836 and place him in charge of its operations.

Neither Robert Kermit of the Red Star New York-Liverpool line nor Capt. Charles H. Marshall, who became prominent in and until his death (1865) managed the old Black Ball Line, was a merchant to whom shipping management was only a part-time interest; they were specialists in the operation of ships. Albion says that Kermit was the only person who owned a share in every ship of the line that he managed and that the Red Star Line "was associated intimately with his name." For most of a period of some twenty years, we are told, Kermit "operated the line in his own name," and we read: "Under the Kermit management, several shipwrecks occurred, including the worst one in packet history to that time. But in the quality of its ships and in their speed and regularity, the performance of the Red Star Line was better than it had been under the Quaker flour merchants."

Of the four ships operating in the Red Star Line when Kermit assumed management, two were wrecked and one foundered during the years 1839-1844. Of the next three vessels, built and put in service during the period 1840-1845, two were wrecked on the Irish coast, one in November 1847 and the other in March 1850. Another sailing packet, the *England* (729 tons), built for and operated for a while by the Red Star Line before she was sold in 1835 to the Black Ball Line, seemed to carry the "ill-luck of Red Starrers"; she foundered during a passage from Liverpool to New York in December 1844 at the same time that her old running mate, the *United States* (650 tons) of the Red Star Line, met a similar fate—all hands being lost on both vessels. Of Robert Kermit's first seven Red Star liners, the five that came to tragic ends were as follows:

Name of Packet	Builder	Year Built	Tonnage	Date and Nature of Loss
ST. ANDREW	C. Bergh & Co., New York	1834	651	Wrecked Jan. 9, 1839, near Liverpool.
SHEFFIELD	Smith & Dimon, New York	1831	578	Wrecked Nov. 14, 1843, on the Romer, Sandy Hook Bar, New York.*
UNITED STATES	Smith & Dimon, New York	1833	650	Foundered Dec. 1844, on voyage from Liverpool to New York.
STEPHEN WHITNEY	C. Bergh & Co., New York	1839	868	Wrecked Nov. 10, 1847, near Cape Clear, Ireland (92 lives lost).
JOHN R. SKIDDY	D. McKay, Newburyport, Mass.	1845	980	Wrecked Mar. 30, 1850, near Wexford, Ireland.

* Sank, but later was raised, rebuilt, and operated 1845-1860 as a whaler.

Both the *Sheffield* and the *Stephen Whitney* were wrecked when under the command of Capt. Charles W. Popham. The wreck of the *Stephen Whitney* was the worst of all of the packet disasters at any time. She piled up on the rockbound Irish coast, due to faulty navigation, within about forty miles of the spot near Kinsale where the early Black Ball liner *Albion* (434 tons), built in 1819, was wrecked April 25, 1822, with a loss of forty-six lives. These two wrecks on the Irish coast account for 138 (86 per cent) of the 160 deaths arising from shipwrecks in the Atlantic sailing packet service during the first thirty years of operations (1818-1847 inclusive).

Vessels Sold to Baltimore Registry for Packet Service

A sailing packet line with regular sailings between Baltimore and Liverpool was inaugurated in 1843. It is significant that the Chesapeake, which achieved some reputation in building small, fast vessels that served well as privateers and illegitimate traders, never led in the production of sturdy merchant vessels of the type required in the transatlantic "ferry" and that Baltimore merchants, when they organized a North Atlantic packet line, had to look to the north for their ships. Of well over three hundred sailing packets listed by Albion as sailing out of New York in regular, established lines and engaged in both transatlantic and coastal trades, only one was built in Baltimore, and that was the old *Marmion* of only 277 tons, which was launched in 1811 and ran in the service (Havre Second Line) for only one year (1823-1824). The following three packets, past their usefulness in the New York service, were acquired by the operators of the Baltimore-Liverpool line, which at no time showed any virility and evidently never made any money:

Name of Packet	Acquired from	Year Built and Builder	Dimensions			Entered Baltimore-Liverpool Line	Previous Years of New York Service	Average Length of Westbound Passages in New York Line
			Length	Beam	Depth			
			Feet	*Feet*	*Feet*			*Days*
RHONE (471 tons)	Havre Old Line	1831 C. Bergh & Co., New York	128	28.4	14.2	1843	12	38
ROSCOE (622 tons)	Liverpool Blue Swallowtail	1832 Smith & Dimon, New York	134.7	32	16	1843	11	38
EMERALD (518 tons)	Havre Whitlock	1835 Brown & Bell, New York	128.5	29.8	20	1846	11	36

The *Rhone* was a rebuilt packet but very slow, her fastest westbound passage in twelve years of service in the New York-Havre line being 30 days and her slowest, 57 days. She was sold in 1843, as she was "far too small and slow for a New York transatlantic packet." The *Roscoe's* fastest crossing of the Atlantic westbound, during eleven years of service in the New York run, was 24 days and her slowest, 59 days. She was disposed of by the Blue Swallowtail Line to make room, in the New York-Liverpool service, for a much larger packet, the *Ashburton* of 1,015 tons, which proved to be no faster than the displaced *Roscoe,* but had a much larger cargo- and emigrant-carrying capacity. The *Emerald,* which had been used as a general trader for three years before she joined the Whitlock Line, was a packet of average speed for the Havre run. In 1846, however, her 518 tons register was too small for the demands of the service and the increasing competition of steam, and she was sold to make way for the new *Bavaria* of 908 tons, built by W. H. Webb, New York. Prior to her departure for Australia in 1853, the *Bavaria* had, for seven years in the Atlantic "ferry," a westbound passage average three days shorter than that of the ship she displaced in the run. The *Emerald* later became a successful whaler and, in this trade, sailed out of Sag Harbor during the years 1851-1859.

Four other New York sailing packets (three transatlantic and one coastal) were later sold for Baltimore registry, but these ships, described below, sailed from the Chesapeake as transients or general traders.

Name of Ship	Tonnage	New York Packet Service: Name of Line	New York Packet Service: Years in Service	Year Built	Year Sold to Baltimore Owners
ORBIT	384	Black Ball, Liverpool	2 years (1822-1824)	1821	1824
ALABAMA	474	Holmes, New Orleans	12 years (1832-1844)	1830	1844
CAMBRIDGE	798	Black Ball, Liverpool	13 years (1837-1850)	1837	1850
DUCHESSE d'ORLEANS	798	Whitlock, Havre	14 years (1838-1852)	1838	1852

The *Orbit* had the reputation of being the slowest of all transatlantic packets engaged in the service after 1819. In two years of sailing on the North Atlantic in the New York-Liverpool run, the average length of her westbound passages was 46 days, and her fastest crossing required 42 days. This poor performance can be compared with the record of the *Columbia I,* built in the same year (1821) by Sidney Wright, of New York, which for eleven years made westbound passages between the same ports in an average time of 35 days and made one crossing in 17 days. The *William Thompson,* also built in the same year, made a westbound passage in 20 days, and the *Canada,* built in 1823, averaged 34 days on her westbound runs during twelve years of Black Ball (New York-Liverpool) and Red Swallowtail (New York-London) service, her fastest crossing being made in 22 days. The old (pioneer) *Amity* of the Black Ball Line, of the same size as the *Orbit* and built five years before her, averaged 39 days on westbound crossings as against 46 days for the *Orbit,* and the *Amity's* best homeward run was made in 22 days as compared with the 42-day, fastest westbound crossing of the *Orbit.*

Spofford, Tileston & Company Acquires the Dramatic Line in 1848 and Makes It the Dramatic-Patriotic Line

The principal owners of the Dramatic Line, in addition to Edward K. Collins, were James Foster, of Jamaica, Long Island, N. Y., his son James, Jr., and Brown & Bell, the shipbuilders. When Collins entered into a contract with the United States Government to run a subsidized line of steam packets between New York and Liverpool, he advertised his share in the Dramatic Line of transatlantic sailing packets for sale and, in September 1848, disposed of his interest to Spofford, Tileston & Company, New York. (Also, Collins sold his interest in the New Orleans line to the owner of a rival line.) Both Paul Spofford and Thomas Tileston were Massachusetts men; they had capital and had had a great deal of experience in operating ships before becoming interested in a transatlantic packet line. Spofford, Tileston & Company had been operators of packet ships in the coastal and Caribbean trades since

1829 and New York agents for a Boston-New York schooner packet line since 1821. After acquiring a large interest in Collins' Dramatic Line in September 1848 and taking over the management, they soon learned that the packets had been driven very hard and were becoming too small for the trade. In 1852 they decided that, with the growth of the emigrant business for the westward crossing, ships of from 1,500 to 1,750 tons were desirable and that the old Dramatic liners of 895 to 1,030 tons were far too small for economic operation in the New York-Liverpool run. When Collins sold his interest in the Dramatic Line, the Fosters retained their interest in the ships of the fleet (James Foster, Jr., owning, in 1852, a one-fourth interest in the vessels), and when Spofford, Tileston & Company decided to put much bigger ships in the service, James Foster, Jr., purchased the famous Dramatic Line quartet—the *Garrick*, *Sheridan*, and *Siddons* (each of 895 tons) and the *Roscius* (1,030 tons)—and operated them for a while in his own "line" in the New York-Liverpool service. The *Sheridan* and *Siddons* were withdrawn from the run in 1854 and the *Garrick* and *Roscius* (the first 1,000-ton transatlantic packet, built in 1838) in 1856. From packet liners and pseudo-liners, these four once fine ships, "the best and fastest quartette of packets on the Western Ocean," degenerated into ordinary traders and transients, or sailing "tramps." (Operating as a transient, the *Roscius* foundered at sea August 26, 1860, when twenty-two years old.)

The *Henry Clay*, a New York-Liverpool Blue Swallowtail liner of 1,207 tons, built in 1845 by Brown & Bell, New York, was burned at the East River pier September 5, 1849. She was acquired and rebuilt by the Dramatic Line and entered that service in 1850. In addition to the *Henry Clay*, Spofford, Tileston & Company built or acquired the following four large sailing packets, which operated in the "new" Dramatic Line throughout the Civil War period and until the last half of the sixties:

Name of Ship	Year and Builder	Tonnage	Dimensions			Service in Line	Length of Westbound Passages in Days		
			Length	Beam	Depth		Short-est	Long-est	Aver-age
			Feet	Feet	Feet				
WEBSTER	1853 Portsmouth, N. H.	1,727	206.8	43.5	21.5	1853-1865 (12 yrs.)	27	51	35
CALHOUN	1853 J. A. Westervelt, New York	1,749	206.3	42.8	28.6	1853-1868 (15 yrs.)	22	58	37
ORIENT	1852 Portsmouth, N. H.	1,560	201	41	20	1853-1867 (15 yrs.)	20	51	38
ELLEN AUSTIN	1854 Damariscotta, Maine	1,626	209.8	40.7	29	1856-1866* (25 yrs.)	23	50	37

* Includes service in London Red Swallowtail Line after Civil War until end of line in 1881.

Spofford, Tileston & Company made an earnest effort to rehabilitate the old Dramatic Line by putting into the service modern ships of much larger size than the original vessels that made history and practically revolutionized the design of the transatlantic packet and also the nature and quality of the service. Basil Lubbock, the English marine historian, refers to the Dramatic Line when, in 1853, it put three large new ships in the service to run with the sizable and fast *Henry Clay* as "Spofford & Tileston's Patriotic Line."

During the Civil War, Spofford, Tileston & Company added to the fleet of the Dramatic Line two other ships, which sailed in company with the *Calhoun* and the *Orient* up to the time of the suspension of the line's regular New York-Liverpool packet service in 1867-1868. These vessels were:

Name of Ship	Tonnage	Built	Year Built	Dimensions Length	Beam	Depth	Service in Line
				Feet	Feet	Feet	
ARKWRIGHT	1,266	Portsmouth, N. H.	1855	197	37.5	24.3	1863-1868 (5 yrs.)
ENERGY	960	South Boston, Mass.	1859	170	35	21	1861-1867 (6 yrs.)

Spofford & Tileston's Finest Packet—the INVINCIBLE

The finest ship associated with the name of Spofford, Tileston & Company and the fastest all-round sailing vessel ever to engage in the transatlantic packet service was the clipper packet *Invincible.* This eminently successful vessel, built by William H. Webb and launched from his New York shipyard August 6, 1851, is proclaimed to have been one of the very best and fastest ships constructed by Webb, New York's foremost designer and builder, and to have been among "the few top-flight" vessels built in the era of sail in any part of the world. Although Webb, in later years, said that the *Invincible* was planned and constructed with the California and China trades as well as the North Atlantic "ferry" in view, at the time of building it was definitely asserted that the ship was designed for the transatlantic "Liverpool passenger business," and to make her particularly suitable for this service, the main deck was "practically free from obstructions while the two 'tween decks were each 7½ feet high in the clear." Webb described the *Invincible* as:

> Length on deck 221 ft.; beam molded 39 ft. 3 in.; depth of hold 25 ft. 6 in. Three full decks, a medium clipper, handsome model, proved an excellent sea boat and made many rapid passages between New York, San Francisco, Hong Kong, Calcutta, and London. When launched with masts all on end, anchors and chains aboard, draft of water was 10 ft. 9 in. aft. Draft deep loaded, 23 ft.

The extreme beam, which was somewhat forward of the center, was recorded as 42 ft. 10 in. and the length as 245 ft. over-all, 225 ft. keel, and 238 ft. for measurement. (American Lloyd's says, 222 ft. x 42 ft. x 25 ft. 6 in.) The registered tonnage was 1,769 tons. The ship was well built, iron-braced throughout, and the cost was stated as $120,000, or $67.8 per ton. An examination of the lines shows that the midship section of the *Invincible* was a little fuller and better than that of the *Comet*; she had a little more tumblehome, and the model was somewhat fuller. The ship had excellent stern lines, but was a little full forward for extreme speed and should properly be classed as designated by her designer—"a good model medium clipper." The packet shows forth in the spar and sail plan, for the *Invincible's* spars and rigging "were snug and handy, very strong and well adapted for heavy weather," and the vessel was not as lofty or as heavily canvased as the *Comet.* It was well said that "in model for speed, the *Invincible* surpassed the few other clippers built especially for transatlantic packets and her record is very good"; it is also true that "the *Invincible* was a favorite ship in every trade in which she was engaged"—transatlantic, Californian, Australian, Chinese, and Indian.

The first owner of the *Invincible* was James W. Phillips, of New York, who does not seem to have been the registered owner of any other fast or important ships. In 1860 she was acquired by Spofford and Tileston, of New York, for a price reported as $60,000 (or about $34 per ton for a ship nine years old—the depreciation in market value up to that time figuring around $6,700 per year, or about $560 per month), and she was operated as a packet in their New York-Liverpool line until February 1863, when she was bought by Henry Hastings, of Boston. James W. Phillips, who had appointed Captain Norton in command of his new ship, certainly intended to put her in the transatlantic packet trade and specialize in first-class passenger trade both ways, fast freight (for sail) both ways, but emigrants in quantity on the westbound run. Captain Norton died suddenly on the day the *Invincible* was put in the water, and Capt. H. W. Johnson, "the storyteller of the clipper ship era," was appointed in his stead. The owner's plans for the ship then underwent a change, and because of the great demand for tonnage to California and the high freight rates prevailing, the *Invincible* was temporarily diverted to that trade, and her first two outward passages were from New York to San Francisco. The following is a brief comparative record of the sailing performance of the *Invincible* on her first two westward Cape Horn passages (the only ones she made in the real clipper ship era, or during the decade ending December 31, 1860):

Voyage No.	Captain	Departure from New York	Arrival at San Francisco	Length of Passage in Days: Elapsed Time	Length of Passage in Days: As Reported	Remarks
1	Johnson	Dec. 20, 1851	Apr. 13, 1852	115	113 (sailing days, 108)	Put into Rio de Janeiro Jan. 26 with water tanks leaking. Apparently sailed Jan. 28, but Capt. Johnson reported, "Lost 8 days by putting into Rio; made passage in 108 sailing days."
	The HURRICANE and MECHANIC'S OWN, sailing Dec. 17, made passages of 120 and 155 days, respectively, port to port.					
2	Johnson	May 21, 1853	Sept. 9, 1853	111	110	Was 48 days to 50° S. Atlantic and 23 days rounding the Horn in heavy gales, losing main yard.
	BELLE OF THE WEST sailed from Boston same day and made passage of 131 days. MISCHIEF sailed from New York May 20, one day before, and reached San Francisco two months after the INVINCIBLE, making a passage of 173 days, port to port, and 133 days excluding 40 days spent at Valparaiso undergoing repairs.					

The *Invincible,* on her initial passage from New York to San Francisco, made a day's run of 400 miles—the most creditable run of any ship engaged in the California trade in the history of sail. The crack clipper *Flying Cloud* and the largest of all clippers, the *Great Republic,* in 1856 reported day's runs of 402 and 413 miles, respectively, and these are the only twenty-four-hour runs on record larger than the 400 miles covered by the *Invincible* in a day. The *Flying Cloud* and *Great Republic* were, however, extreme clippers built primarily, if not solely, to attain high speed; whereas the *Invincible* was only a medium clipper, with fuller lines and less sail spread. It was much more of an achievement for the *Invincible* to sail 400 nautical miles in one day than for the two extreme clippers to sail 402 and 413 miles, respectively, in a day.

The *Invincible* continued around the world on her maiden voyage, crossing the Pacific from San Francisco and arriving at Hong Kong July 11, 1852. The ship experienced a severe typhoon on July 6 and 7, and Captain Johnson wrote home:

> Just as I got the royal yards down, it came buzzing enough to blow one's hair off; relieving tackles were hooked on and led down to the main deck to keep the men on their feet; the sea was tremendous, but it was beautiful to see her behave; not a shiver or shake, no water on board, and lying to without a rag of sail. While many others would be dismasted, our good ship did not do $5 damage and on the 8th came out in fine weather, like a new pin.

Clearing Whampoa on September 15, 1852, in the unfavorable monsoon season with a cargo of Chinese tea for Britain, the *Invincible* was in the Straits of Sunda October 11 and at the Downs (where, if she had been a British ship, the passage would have been considered as ended) December 29—or 105 days out from Whampoa and 79 days from Anjer. British records state that the *Invincible* was at Gravesend January 2, 1853, 109 days from Whampoa and at the unloading dock at London January 5, "the ship being delayed several days in the river owing to her deep draft." It was also reported that on this passage the

Invincible "made 336 miles in one day, with 3 topsails set," and did "an extraordinary bit of sailing in running from the Cape of Good Hope to the Downs in 40 days." Leaving London February 14, 1853, the *Invincible,* bound for New York, passed the Scilly Islands February 16 and was only 6 days 3 hours to the eastern edge of the Banks, Lat. 48°, which is said to be the best run on record for any ship under canvas (best day's run, 306 miles; best speed, 15½ knots per hour). She received pilot off Fire Island March 5 and anchored in New York Harbor March 7, 1853.

On her second voyage, the *Invincible* returned from San Francisco to New York, making a fast passage of 90 days, following which she sailed to England and was operated under charter for about five years as a White Star Line packet in the Liverpool-Australia trade. In this service, the ship made two passages out to Melbourne in 76 and 79 days, respectively. Completing her 1854 voyage, she ran from Melbourne to Bombay and thence to Liverpool in 92 days. In 1857 she is credited with a passage of 82 days between these ports, leaving Bombay May 14 and arriving at Liverpool August 4.

In early 1856, the *Invincible* made her second tea passage from China to Britain, clearing Hong Kong January 21 and arriving at her discharging dock in London May 15, 1856, after a gross length of passage of 115 days. (Captain Graham was in command on this voyage.) Before this passage, the *Invincible* was in collision with the ship *A. Cheesebrough,* which was sunk, and the *Invincible* herself was beached near Hong Kong with eleven feet of water in the hold. After her last passage out to Australia from Liverpool, the *Invincible* proceeded from Melbourne to China and arrived at New York in October 1859, 126 days from Whampoa and 78 days from Anjer.

Between September 21, 1860, and January 19, 1863, the *Invincible,* operating as a packet in the transatlantic trade, for which she was designed and built, made eight round voyages between New York and Liverpool; these voyages occupied on an average about two and a half months "on the round, including detention." On her first voyage in this service, it is said, "she ran out in 19 days and home in 16 days, a total of 35 days at sea for the round voyage and a record." This westward passage of 16 days is generally credited as a 17-day run (leaving Liverpool November 3 and arriving at New York November 20, 1860), and this would have been considered an amazing performance but for the fact that the *Andrew Jackson,* the record-holder in the Cape Horn run, left Liverpool the same day as the *Invincible* and established an all-time record for a westward crossing of the Atlantic by a passage of only 15 days. In February 1862, the *Invincible* made another fast homeward passage from Liverpool in 19 days and followed up this with a 22-day westward crossing on her next voyage. (Any transatlantic passage to the westward from Liverpool or Portsmouth, England, to New York of less than 30 days was deemed "a good, fast crossing.")

Under the ownership of Henry Hastings, of Boston, the *Invincible* made four more California voyages. On the first of these, in 1863, she had a long passage out of 134 days, on which she was 35 days off Cape Horn in heavy gales, and the journey ended with a slow run of 34 days from the Pacific equator to the Golden Gate in light airs, calms, and fog. The other three passages around the Horn westbound were made in 109, 119, and 119 days, respectively. She beat the famous transatlantic packet *Dreadnought* over this course by twenty-five days in 1864 and eight days in 1865. In 1866 the *Invincible* made a splendid run up the Pacific of 41 days from 50° S. to the Golden Gate and, on the entire passage, beat the time of all ships that sailed anywhere near her. Five of the total of six westward Cape Horn passages of the *Invincible* were made at the poorest time of the year for favorable weather and fast runs. Westward, all the passages originated in New York except one, which commenced at Boston. Returning east from California on this last series of Cape Horn voyages, the *Invincible* ran from San Francisco to New York in 107 and 96 days (two passages), to Boston in 108 days, and to Philadelphia in 114 days.

After arriving at Philadelphia May 16, 1867, and discharging, the *Invincible* proceeded to New York and was "put up" to make her seventh voyage to San Francisco. On September 11, 1867, while lying at a Brooklyn dock completing her loading, the vessel's cargo caught fire. She was towed out into the stream, but attempts to scuttle her failed because of the dense smoke. She was finally beached on Governor's Island and proved to be a total loss. She was over twenty-six years old when destroyed by fire and was reported to have sound timbers and to be "in first-rate condition." Insurance paid on the vessel and her cargo was reported as $100,000. Capt. H. W. Johnson was an able navigator and a very competent commander. He remained in the *Invincible* for several years and in the sixties took three frail wooden side-wheel river steamboats, the *Fire Dart, Fire Cracker,* and *Fire Queen,* from New York around the Cape of Good Hope to China, with no accident or mishap—a remarkable achievement. In 1866 he was navigator of the yacht *Vesta* in her historic transatlantic race with the *Henrietta* and *Fleetwing.*

The Competition of Steam with New York Transatlantic Sailing Packets Seriously Commences in 1847

Edward K. Collins, of southern coastal packet fame and the founder in 1836 of the successful and popular New York-Liverpool Dramatic Line of sailing packets, lobbied in Washington for years, commencing in 1841, urging the United States Government to follow the lead of England and give subsidy aid to lines of American steamers engaged in foreign trade. In 1845, Congress agreed to a policy of steamship subsidies, provided the vessels receiving government money were built and available for naval purposes in case of war. Collins was generally conceded to be the outstanding sailing packet operator in New York and the entire country, and he succeeded in 1847 in obtaining a subsidy from the U. S. Government for a line of steamships to operate between New York and Liverpool, following which he advertised for sale his interest in the transatlantic Dramatic Line and the coastal New Orleans line of sailing packets. In the fall of 1848, he was in a position to devote all his time, energies, and resources to the Collins Line of transatlantic steam packets, which were paddle-wheel wood steamships.

In February 1847, a lone British steamer that was a regular trader and not one of a line arrived at New York "21 days from Liverpool," but in that year the French Government inaugurated a subsidized line of steam packets between Cherbourg and New York, and the American "Ocean Steam Navigation Company" commenced sailings between New York and Bremen via Southampton. The British-subsidized Cunard Line, which commenced sailings between Liverpool, Halifax and Boston in 1840, announced in 1847 that it would establish a line between Liverpool and New York direct to compete with the American steam packet line in service and the Collins Line steamships building, and this Cunard New York line commenced regular sailings from each side on January 1, 1848, although the larger, faster, and superior Collins steamships were not ready for operation until 1850. The period of from 1838 (when the first British transatlantic steamships appeared at New York) to 1842 was one of threatening uncertainty for the American sailing packet lines, but from 1842 (with a business depression over) to 1847, the business of transatlantic wood sail boomed and new, bigger, and faster ships entered the packet service and were well patronized. Although the greatly increased immigration trade westbound materially helped the sailing packets in the mid- and late forties and early fifties, the Cunard Line's direct sailings between Liverpool and New York, commenced in 1848 (just thirty years after the pioneer Black Ball Line had inaugurated regular scheduled transatlantic packet service), seriously upset the American sailing fleet, took away most of its first-class passenger and express freight business (the mails were already lost to it), and profits dropped. The operations of the United States steam packet Collins Line, which started in 1850, gave supremacy to steam in the Western Ocean "ferry," and when the British steamer *Glasgow* arrived at New York in October 1853 with 267 immigrants aboard, the last source of big income to sail on its long and uncertain westbound passages was seriously threatened.

The failure of the French-subsidized steamship line between Cherbourg and New York, which had commenced sailings in 1847 but quickly became very much of a fiasco, seemed to operate to stimulate and encourage the New York-Havre sailing packet lines, for during the five-year period 1847-1851 inclusive the following ten vessels were added to the service of these old established lines:

Line	No. of New Packets	Tonnage		Largest Packet	Smallest Packet
		Total	Average per Ship		
Havre Old Line (Union)	3	3,125	1,042	ISAAC BELL 1,072 tons	NEW YORK 991 tons
Havre Second Line	3	3,462	1,154	MERCURY 1,350 tons	ST. DENIS 959 tons
Havre Whitlock Line (Union)	4	3,799	950	GALLIA 1,190 tons	SPLENDID 642 tons
Total	10	10,386	1,038	MERCURY 1,350 tons	SPLENDID 642 tons

The *William Frothingham* (830 tons), built at Belfast, Maine, in 1851, was added to the Havre Second Line in 1857 and sailed in this packet service eleven years—or until 1868. The *Jacob A. Stamler* (1,000 tons), built in New York in 1856, joined the line in 1864 and operated until 1870. The Whitlock (Union) Line added the *Carolus Magnus* (1,349 tons) and the *William Nelson* (1,039 tons) to its service in 1853 and 1856, respectively, and they operated in the line until it suspended service in 1863-1864 during the Civil War.

Although the steam packet service between New York and Southampton competed with the New York-London sailing packet service of the Black X and Red Swallowtail lines (which landed and embarked their passengers at Portsmouth on the south coast of England and in proximity to the rapidly developing new port of Southampton), it did not seriously affect the business of these long-established and favorably known sailing packet lines for several years, for in 1847 and during the next few years (1847-1854) they added the following vessels to their fleets:

Line	No. of Vessels Added to Line	Tonnage		Largest Packet	Smallest Packet
		Total	Average per Ship		
London Black X	5	7,152	1,430	AMAZON 1,771 tons	DEVONSHIRE 1,149 tons
London Red Swallowtail	8	7,590	949	YORKTOWN 1,150 tons	INDEPENDENCE 732 tons
Total	13	14,742	1,134	AMAZON 1,771 tons	INDEPENDENCE 732 tons

In 1855 and 1856, respectively, the Red Swallowtail Line added the famous *Liverpool* (1,077 tons) and the *Plymouth Rock* (973 tons) to its service, and these vessels continued to run in the line until it ceased service in 1880. The *Liverpool* had previously operated for twelve years in the Blue Swallowtail New York-Liverpool line, and the *Plymouth Rock* had been built by McKay, of Boston, in 1849 for service in Train's Boston-Liverpool White Diamond Line.

The New York-London packet lines fought hard for survival against the competition of steam and, in addition to the above fifteen ships, placed the following sailing packets in the service during the years 1858-1865:

Name of Packet	Line	Tonnage (New)	Length	Beam	Depth	Year Built	Builder	Operated in Line
			Feet	*Feet*	*Feet*			
DANIEL WEBSTER	Black X, London	1,545	181.3	38.3	30.3	1850	McKay, Boston	1858-1869
HUDSON II	Black X, London	1,801	205.0	42.0	29.0	1863	Westervelt, New York	1863-1869
E. W. STETSON	Red Swallowtail, London	1,164	173.3	28.2	23.5	1862	Newcastle, Maine	1863-1880
NE PLUS ULTRA	Red Swallowtail, London	1,534	186.0	40.5	28.0	1863	Thomaston, Maine	1865-1881

The Liverpool sailing packet trade was hit hard by the Cunard and Collins steamship competition. The Liverpool New Line, with four good ships (the *Rochester* was wrecked on the Irish coast April 18, 1847) ceased operations in 1849, but its packets were taken over by the Liverpool Blue Swallowtail Line. The Black Ball Line added four good, large packets to its fleet during 1847-1851 and, in 1854-1855, put three new, big ships in the service. These seven new Black Ballers, built by Webb, of New York, for the line, totaled 9,461 tons and averaged 1,352 tons per ship; the largest was the *Great Western* of 1,443 tons, built in 1851, and the smallest was the *Isaac Wright* of 1,161 tons, launched in 1847. The Liverpool Red Star Line added three good sailing packets to its service during the years 1847-1851. These ships totaled 3,774 tons and averaged 1,258 tons per vessel; the largest was the *Constellation* of 1,560 tons, and the smallest was the *West Point* of 1,046 tons. In addition to taking over the four ships of the Liverpool New Line in 1849, the Blue Swallowtail Line built or acquired three new ships for its service in 1849-1852 and added two more vessels to its fleet in 1854. These five vessels added to the Blue Swallowtail fleet during 1849-1854 (in addition to the four New Line packets) aggregated 6,882 tons and averaged 1,376 tons per ship; the largest packet was the Webb-built *Aurora* of 1,639 tons, and the smallest was the *American Union* of 1,146 tons.

The new management of the old Collins Dramatic Liverpool line (Spofford & Tileston) added the newly acquired five-year-old rebuilt *Henry Clay* (1,207 tons) to the new Patriotic-Dramatic Line service in 1850 and built or acquired four large, new ships and put them in the line—three in 1853 and a fourth (the *Ellen Austin* of 1,626 tons) in 1856. These four big Patriotic-Dramatic Line packets, built 1852-1854, totaled 6,662 tons and averaged 1,666 tons per ship; the largest vessel of the quartet was the *Calhoun* of 1,749 tons, and the smallest was the *Orient* of 1,560 tons.

The length of Atlantic crossings by sailing vessels was of necessity quite variable, and this operated greatly to the advantage of steam. However, the best driving packets of the early fifties are said to have had an average length of passage from New York to Liverpool eastbound, in fair sailing weather, of 20 days (with favorable westerly winds) and an average passage from Liverpool to New York, under fair sailing conditions, of 34 days (against the westerlies). During the decade ending with 1857, there were 23 passages made westbound, port to port, by sailing packets in from 16 to 20 days; but on the other hand, during the same period, there were 16 passages made by such ships that occupied from 60 to 89 days (i.e., from two to nearly three months). These long passages expressed as a percentage of the total westbound crossings of 1,316 made during the ten-year period were small (only 1.2 per cent); nevertheless, the possibility of a long and tiresome passage westbound was always present with sail.

Steam competition robbed the high-class transatlantic sailing packets, the "canvas-backs," first of mail, then of their cabin passengers and fine freight, and ultimately even of emigrant (or steerage) passengers. Eastbound, the ships had always carried bulky freight, and to cotton and naval stores were added flour and grain. On the passage to Europe, sail retained for years a fair percentage of the cabin passenger service in the face of the attacks on this business of the "noisy, dirty and shaking smoke boxes"; but on the homebound crossings, bucking the prevailing westerly winds, the spread between the length of average sail and steam passages was too great from the first, and when the Collins Line reached 10-day crossings with its steamships as against an average of about 36 days for sail (and the possibility that half the passages made westbound under canvas might drag out anywhere from 37 to even over 80 days), the advantage of steam was too great whenever speed became a factor. The steamers quickly won not only mail and cabin passengers but also express freight and then most of the fine freight, and the sailing packets, not being able to get woolen and cotton goods and other foreign manufactures, had to take whatever heavy and poor paying freights they could find, such as railroad iron and coal, and seek to obtain from general traders the once-despised emigrant trade. Gradually, the steamers took over the major part of the declining volume of steerage passenger carrying, or emigrant business, and because of the longer time required to transport all cargoes as well as passengers across the ocean (particularly westward in the Atlantic against the prevailing winds), but little pay load became available for the sailing packets except cargoes and freight that were relatively undesirable and the least profitable. For many years before the regular transatlantic sailing packet lines discontinued their operations (1864-1881), the liners were virtually regular freighting traders operating on a schedule and carrying no passengers, and the old urge for speed by driving had left them because of maintenance expenses, the hopelessness of competing against steam, and the expense and futility of taking risks to save hours on a passage when they were inescapably handicapped by days and weeks. Crews were reduced in number, and the quality steadily deteriorated; the ships grew older in the service with no replacements of new tonnage and but little reconditioning. As they approached the end of the sailing packet days during the sixties and seventies, they carried no passengers, perishable or fine freight but only heavy and bulky cargoes, the time of delivery of which was deemed as of minor importance.

Albion, in SQUARE-RIGGERS ON SCHEDULE, says:

> As far as sailing performance was concerned, the late 'forties and early 'fifties saw the [transatlantic] packets at their very fastest. On the westbound run from Liverpool, . . . the average for the thirty years up to 1848 was 37.5 days and . . . for the five years preceding 1848 it was 34.2 days. During the next five years, 1848-1852, it was at its best with 33.3 days. . . . During the next five years, 1853-1857, however, the average increased to 35.7 days.

Of 2,844 westbound transatlantic sailing packet crossings to New York during the thirty-year period from 1818 to 1848 tabulated by Albion (1,356 from Liverpool, 902 from Havre, and 586 from London), the fastest crossing—that of the *Yorkshire* in 1846—was made in 16 days and the slowest in 83 days; eleven crossings were made in 20 days or less, and nineteen required 65 days or more. For the following ten-year period, 1848-1857 inclusive, Albion records 1,316 westbound New York transatlantic packet crossings (637 from Liverpool, 342 from London, and 337 from Havre). Of these, the fastest—that of the *Harvest Queen* in 1857—was made in 16 days and the slowest in 89 days; twenty-three crossings were made in 20 days or less, and eight required 65 days or more.

The following general averages of the length of the New York transatlantic westbound passages from port to port are from tabulations by Albion, the length of the crossings being determined by subtracting the date of departure from the date of arrival of each vessel for which the record of a completed passage is available:

Period	Number of Years	Number of Westbound Passages	Average Length of Westbound Passages: From Liverpool	From London (Portsmouth)	From Havre	Total
			Days	Days	Days	Days
1818-1832	25	913	37.9	37.7	40.0	38.5
1833-1847	15	1,931	34.3	36.3	37.7	35.9
1848-1857	10	1,316	34.6	35.1	36.7	35.3
Total 1818-1857 inclusive	50	4,160	35.3	36.1	37.7	36.2

Of the 4,160 recorded westbound transatlantic crossings, the numbers of voyages for certain stipulated length-of-passage groups, expressed as percentages of the whole, were as follows:

Length of Passage	Number of Passages	Number Percentage of Total	Length of Passage	Number of Passages	Number Percentage of Total	Length of Passage	Number of Passages	Number Percentage of Total
Days (inclusive)			Days (inclusive)			Days (inclusive)		
16-20	34	0.8	36-40	1,004	24.1	56-60	56	1.4
21-25	239	5.7	41-45	564	13.6	61-65	20	0.5
26-30	725	17.4	46-50	262	6.3	66-70	14	0.3+
31-35	1,116	26.8	51-55	114	2.8	71-89	12	0.3—

The passages in 25 days and under represent 6.5 per cent of the total; those in from 26 to 35 days, 44.2 per cent; from 36 to 45 days, 37.7 per cent; from 46 to 55 days, 9.1 per cent; and those in over 55 days, 2.5 per cent. Of the total reported westbound crossings for the forty-year period, 81.9 per cent occupied from 26 to 45 days, and 50.9 per cent required from 31 to 40 days.

During the decade 1843-1852 inclusive, the Western Ocean sailing packets made their supreme bid in the fight against steam; but from the time that the British Cunard steamship line commenced regular direct sailings between Liverpool and New York and the Collins Line of American-built and owned steamships inaugurated a better and faster steam packet service between the same ports, sailing packets were doomed, and their withdrawal became merely a question of time. It is amazing that the old and pioneer Black Ball (Liverpool) Line held on until 1878 and the Red Swallowtail (London) Line until early 1881.

With the commencement of the building of wood steam paddle-wheel packets for the transatlantic service and similar subsidized vessels for carrying mails to Panama and up the Pacific Coast and with the planning and construction of the new Collins Western Ocean steam liners, New York in 1848 became steamship-minded. The New York HERALD said: "Next spring we shall have, belonging to New York eighteen large ocean steamers, not one of which will be under 1,000 tons. The building of sailing vessels appears to have left the city entirely." The HERALD at this time, while correct in its optimism of the future of steam, was far too pessimistic in regard to sail; for two factors were developing which were to influence greatly the type of marine tonnage built during the early fifties: (1) the discovery of gold in California and the demand for long-voyage speed resulting in the clipper ship boom; (2) the transatlantic immigrant trade, with its demand for new and larger Western Ocean sailing packets and regular traders. By 1850, New York shipyards were frantically engaged in building sailing ships to meet the demands of "the clipper ship craze" and the Western Ocean immigrant boom. It is significant that New York's most talented and versatile shipbuilder, William H. Webb, on a single day in 1851, launched three large and important vessels—one a Pacific Mail steamship, another a clipper for the Cape Horn trade, and the third the transatlantic sailing packet *Isaac Bell* of 1,072 tons for the Havre Union Line, which vessel later saw service in the London Black X Line. The largest of all sailing packets built for the regular Western Ocean lines were the *Amazon* of 1,771 tons and the

Palestine of 1,751 tons—both old measurement—built by J. A. Westervelt, New York, in 1854. (According to the new standard of measurements adopted in 1865, the *Amazon* tonnage was well over the 1,801 tonnage measurement of the *Hudson II,* as would also have been that of the *Palestine* if she had not been lost by collision in 1861.) By the end of the fifties the clipper ship boom had spent itself, and the demand for space to transport emigrants westward across the Atlantic had greatly waned. In 1860 the Chamber of Commerce of New York, in futilely petitioning Congress for mail subsidies for American steamships to compete in transatlantic business with the subsidized British and other foreign steamship lines, declared:

> Your memorialists can recall the time, within a short term of years, when the several lines of packet ships sailing out of the port of New York had almost exclusive control of the valuable traffic between this and the principal seaports of Great Britain and France; and they have lived to see the noble vessels, which once stood so high in the estimation of the traveller and which bore to our shores the most costly merchandise, degraded to the service of the emigrant, to the carrying of coal, crockery and iron, and the bulky products of our own soil.

Packet Ships from 1850 to End of Sail

From 1850 to the end of the sailing packet service, the various regular New York transatlantic lines added the following number of vessels to fleets of ships sailing on schedule:

Liverpool Service		London Service		Havre Service	
Line	Number of Ships	Line	Number of Ships	Line	Number of Ships
Black Ball	10	Black X, new	5	Old Line (Union)	2
Red Star	2	Black X, new; transferred from Havre	1	Second Line	4
Dramatic*	7	Red Swallowtail, new	6	Whitlock (Union)	4
Blue Swallowtail	4	Red Swallowtail, new; transferred from Liverpool	9		
Total	23	Total	21	Total	10

* Includes the HENRY CLAY, built in 1845 for Blue Swallowtail (Liverpool) Line, which was burned, completely rebuilt, and added to Dramatic Line in 1850, in which she operated for fifteen years (1850-1865).

The total number of new ships placed in the New York transatlantic sailing packet lines during the period 1850-1869, some of which continued in the services until the lines discontinued, was forty-three, and fifty-four ships in all entered the nine regular New York transatlantic lines as new packets for a particular line after 1850.

The pioneer Black Ball Line outlasted all of the competitive New York-Liverpool sailing packet lines, operating until 1878 (nearly sixty-one years), and during that time forty-three ships operated under the Black Ball flag. The Red Star and Blue Swallowtail lines remained in service until 1867, the former sailing twenty-one ships under its flag through the period of over forty-five years and the latter twenty-six ships, of which twenty-one were new to packet service (and another, the *York,* comparatively so), during the same term of years, 1822-1867. The Dramatic Line (later Spofford & Tileston's line, or the Patriotic-Dramatic Line), which operated about thirty-two years in all (1836-1868), had twelve ships under its colors through the years, and the Liverpool New Line, which operated for six years (1843-1849), had five ships, of which four were transferred to the Liverpool Blue Swallowtail Line in 1849.

From mid-century to the close of the transatlantic sailing packet service, the following ships were placed in regular service in the established Liverpool lines operating out of New York:

Name of Ship	Line	Builder	Year Built	Service in Line	Westbound Passages in Days		
					Shortest	Longest	Average
MANHATTAN (1,299 tons)	Black Ball	W. H. Webb, New York	1849	1850-1863 (13 yrs.)	24	60	35
ISAAC WEBB (1,359 tons)	Black Ball	W. H. Webb, New York	1850	1850-1878 (28 yrs.)	25	60	36
GREAT WESTERN (1,443 tons)	Black Ball	W. H. Webb, New York	1851	1851-1878 (27 yrs.)	24	43	31
HARVEST QUEEN (1,383 tons)	Black Ball	W. H. Webb, New York	1854	1854-1875 (21 yrs.)	16	44	34
JAMES FOSTER, JR. (1,410 tons)	Black Ball	W. H. Webb, New York	1854	1854-1878 (24 yrs.)	28	42	36
NEPTUNE (1,406 tons)	Black Ball	W. H. Webb, New York	1855	1855-1877 (22 yrs.)	26	36	31
ALEXANDER MARSHALL (1,507 tons*)	Black Ball	W. H. Webb, New York	1860	1860-1878 (18 yrs.)	24	46	34
WILLIAM F. STORER (1,628 tons*)	Black Ball	Waldoboro, Maine	1856	1861-1875 (14 yrs.)	25	50	35
HAMILTON FISH (1,628 tons*)	Black Ball	Waldoboro, Maine	1856	1863-1878 (15 yrs.)	26	52	36
CHARLES H. MARSHALL (1,683 tons*)	Black Ball	W. H. Webb, New York	1869	1869-1878 (9 yrs.)	23	45	33
UNDERWRITER (1,168 tons)	Red Star	Westervelt & Mackey, New York	1850	1851-1867 (16 yrs.)	22	46	33
PHOENIX (1,487 tons)	Red Star	Thos. E. Knight, Cape Elizabeth, Maine	1853	1856-1858 (2 yrs.)	26	35	31
CONSTANTINE (1,161 tons)	Blue Swallowtail	Portsmouth, N. H.	1850	1850-1867 (18 yrs.)†	27	54	39
AMERICAN UNION (1,146 tons)	Blue Swallowtail	Damariscotta, Maine	1851	1852-1867 (15 yrs.)‡	21	49	37
AURORA (1,639 tons)	Blue Swallowtail	W. H. Webb, New York	1854	1854-1859 (5 yrs.)	24	44	34
ONTARIO II (1,501 tons)	Blue Swallowtail	W. H. Webb, New York	1853	1854-1858 (4 yrs.)§	29	56	41
WEBSTER (1,727 tons)	Dramatic	Portsmouth, N. H.	1853	1853-1865 (12 yrs.)	27	51	35
CALHOUN (1,749 tons)	Dramatic	J. A. Westervelt, New York	1853	1853-1868 (15 yrs.)	22	58	37
ORIENT (1,560 tons)	Dramatic	Portsmouth, N. H.	1852	1853-1867 (15 yrs.)	20	51	38
ELLEN AUSTIN (1,626 tons)	Dramatic	Damariscotta, Maine	1854	1856-1866 (10 yrs.)	23	60	38
ENERGY (960 tons*)	Dramatic	South Boston, Mass.	1859	1861-1867 (6 yrs.)	26	55	39
ARKWRIGHT (1,266 tons*)	Dramatic	Portsmouth, N. H.	1855	1863-1868 (5 yrs.)	24	52	37

* New tonnage measurement.
† Thirty-one years' service, including thirteen years in London line.
‡ Twenty-five years' service, including ten years in London line.
§ Later served five years in London Red Swallowtail Line.

The New York-London transatlantic sailing packet lines operated as follows:

Name of Line	Service Commenced	Service Terminated	Number of Years of Regular Operation	Total Number of Regular Packet Ships in the Service
Black X	1824	1868	44	26
Red Swallowtail	1824	1881	57	34

The London Red Swallowtail Line was the last transatlantic sailing packet line to remain in service. Its ships *Sir Robert Peel* (940 tons), *Rhine* (1,037 tons), *Liverpool* (1,077 tons), *Plymouth Rock* (973 tons), and *E. W. Stetson* (1,164 tons new measurement) operated until 1880, and the *Cornelius Grinnell* (1,117 tons) and *Ne Plus Ultra* (1,534 tons new and 1,396 old measurement) ran on schedule in the service until 1881. The last sailing packet to cross the Atlantic Ocean westbound was the *Ne Plus Ultra,* which terminated the Western Ocean sailing packet service upon her arrival from London on May 18, 1881. The *Liverpool* completed her last transatlantic packet voyage when she reached New York in November 1880. Of her thirty-seven years of continuous service in the ocean "shuttle," six years were in the Liverpool New Line (1843-1849), six in the Liverpool Blue Swallowtail Line (1849-1855), and twenty-five in the London Red Swallowtail Line (1855-1880). During this time, the packet had maintained a good average of 36 days on her westward runs, had made a crossing in 20 days, and had never exceeded 60 days from port to port. Upon her arrival in New York and her withdrawal from packet trade, the *Liverpool,* which holds the record for longest service in the transatlantic packet run, was not laid up, but promptly sailed for Bordeaux, France, and engaged in transient ocean freighting business.

From 1850 to the close of the sailing packet era, the following ships were placed in regular service on the established London lines operating out of New York:

Name of Ship	Line	Builder	Year Built	Service in Line	Westbound Passages in Days: Shortest	Longest	Average
OCEAN QUEEN (1,182 tons)	Black X	Westervelt & Mackey, New York	1850	1850-1855 (5 yrs.)	23	52	33
PALESTINE (1,751 tons)	Black X	J. A. Westervelt, New York	1854	1854-1861 (7 yrs.)	25	36	30
AMAZON (1,771 tons)	Black X	J. A. Westervelt, New York	1854	1854-1868 (14 yrs.)	24	36	28
ISAAC BELL (1,072 tons)	Black X	W. H. Webb, New York	1851	1857-1858 (2 yrs.)	19	45	33
DANIEL WEBSTER (1,545 tons*)	Black X	D. McKay, Boston	1850	1858-1869 (11 yrs.)	23	45	34
HUDSON II (1,801 tons*)	Black X	J. A. Westervelt, New York	1863	1863-1869 (6 yrs.)	24	44	33
SIR ROBERT PEEL (940 tons)	Red Swallowtail	W. H. Webb, New York	1846	1850-1880 (30 yrs.)	22	56	37
AMERICAN CONGRESS (863 tons)	Red Swallowtail	Newcastle, Maine	1849	1850-1879 (29½ yrs.)	21	77	36
CORNELIUS GRINNELL (1,117 tons)	Red Swallowtail	Boston, Mass.	1850	1850-1881 (31 yrs.)	24	48	33

*New tonnage measurement.

Continued on next page.

Name of Ship	Line	Builder	Year Built	Service in Line	Westbound Passages in Days		
					Shortest	Longest	Average
PATRICK HENRY (880 tons)	Red Swallowtail	Brown & Bell, New York	1839	1852-1864 (12 yrs.)	26	41	32
CHRISTIANA (666 tons)	Red Swallowtail	New York	1846	1853-1861 (8 yrs.)	30	70	43
RHINE (1,037 tons)	Red Swallowtail	J. A. Westervelt, New York	1850	1854-1880 (26 yrs.)	24	51	37
LIVERPOOL (1,077 tons)	Red Swallowtail	Brown & Bell, New York	1843	1855-1880 (25 yrs.)	20	60	37
PLYMOUTH ROCK (973 tons)	Red Swallowtail	Boston, Mass.	1849	1856-1880 (24 yrs.)	22	45	37
ONTARIO II (1,501 tons)	Red Swallowtail	Newcastle, Maine	1854	1858-1863 (5 yrs.)	29	56	41
E. W. STETSON (1,164 tons*)	Red Swallowtail	Newcastle, Maine	1862	1863-1880 (17 yrs.)	22	51	35
NE PLUS ULTRA (1,534 tons*)	Red Swallowtail	Thomaston, Maine	1863	1864-1881 (17 yrs.)	21	47	34
ELLEN AUSTIN (1,626 tons)	Red Swallowtail	Damariscotta, Maine	1854	1866-1881 (15 yrs.)	about 30	60	40
NEW WORLD (1,404 tons)	Red Swallowtail	D. McKay, Boston	1846	1867-1880 (13 yrs.)	18	42	31
CONSTANTINE (1,161 tons)	Red Swallowtail	Portsmouth, N. H.	1850	1868-1880 (12 yrs.)	27	54	39
AMERICAN UNION (1,146 tons)	Red Swallowtail	Damariscotta, Maine	1851	1868-1877 (9 yrs.)	21	49	37

*New tonnage measurement.

The *Isaac Bell* ran three years in the Havre Old Line and three years as a general trader and transient before she served about two years in the London Black X Line, following which she went into transient trade again. The *Sir Robert Peel* had about four years in the Liverpool Blue Swallowtail Line before she was transferred to the London service and was a transatlantic liner for thirty-four years (1846-1880). The *Liverpool* was a Western Ocean packet for thirty-seven consecutive years, running in two New York-Liverpool regular lines for twelve years before she was transferred to the London Red Swallowtail Line. The *Plymouth Rock,* before she became a New York packet, had sailed in the Boston-Liverpool service and in Train's White Diamond Line and was seven years old when she first sailed under the Red Swallowtail colors. The *Ontario II* sailed for four years in the Liverpool Blue Swallowtail Line and operated, in all, nine years as a transatlantic packet. The *Ellen Austin* ran ten years as a Dramatic (Spofford & Tileston) Liverpool liner (1856-1866), following which she served for fifteen years (1866-1881) as a London Red Swallowtail packet, sailing as a Western Ocean packet for twenty-five years in all (1856-1881). The *New World* ran in the Blue Swallowtail Line from 1846 to 1867 and from then in the London Red Swallowtail service, sailing as a packet for thirty-four consecutive years. The *Constantine* ran for seventeen years (1850-1867) in the Liverpool Swallowtail service before she was transferred to the London line, and she operated as a transatlantic packet for thirty-one years (1850-1880). The *American Union* was a liner in the Liverpool Blue Swallowtail service for fifteen years (1852-1867) before she was transferred to the London run, and she operated as a packet for twenty-five years.

The New York-Havre transatlantic sailing packet lines operated as follows:

Name of Line	Service Commenced	Service Terminated	Number of Years of Regular Operations	Total Number of Regular Packet Ships in the Service
Havre Old (later Union) Line	1822	1863	41	25
Havre Second Line	1823	1870	47	22
Havre Whitlock (later Union) Line	1823	1864	41	14
Total	1822	1870	48	61

The following vessels were placed in regular service on the New York-Havre lines from mid-century to the end of the sailing packet era:

Name of Ship	Line	Builder	Year Built	Service in Line	Westbound Passages in Days		
					Shortest	Longest	Average
SAMUEL M. FOX (1,062 tons)	Old Line	W. H. Webb, New York	1850	1851-1855 (4 yrs.)	25	43	34
ISAAC BELL (1,072 tons)	Old Line	W. H. Webb, New York	1851	1851-1854 (3 yrs.)	19	45	33
WILLIAM TELL (1,153 tons)	Second Line	Westervelt & Mackey, New York	1850	1850-1862 (12 yrs.)	25	60	36
MERCURY (1,350 tons)	Second Line	Westervelt & Mackey, New York	1851	1851-1869 (18 yrs.)	23	49	33
WILLIAM FROTHINGHAM (830 tons)	Second Line	White & Connor, Belfast, Maine	1851	1857-1868 (11 yrs.)	27	60	39
JACOB A. STAMLER (1,050 tons)	Second Line	T. Stack, New York	1856	1864-1870 (6 yrs.)	24	50	35
GERMANIA (996 tons)	Whitlock	Portsmouth, N. H.	1850	1850-1863 (13 yrs.)	26	52	38
HELVETIA (971 tons)	Whitlock	Kennebunk, Maine	1850	1851-1864 (13 yrs.)	28	53	36
CAROLUS MAGNUS (1,349 tons)	Whitlock	Newcastle, Maine	1851	1853-1863 (10 yrs.)	22	53	34
WILLIAM NELSON (1,039 tons)	Whitlock	Somerset, Mass.	1850	1856-1863 (7 yrs.)	28	50	42

The Old and Whitlock lines combined and in later years operated as the Havre Union Line.

The *Isaac Bell* (1,072 tons), the last packet built on order for the Havre Old and Whitlock (or Union) Line, was launched by Webb in 1851 and entered the service that year. She was a sister ship of the *Samuel M. Fox* (1,062 tons), built late in 1850, and was the second largest packet built by Webb for the Havre service, being exceeded in size only by the *Gallia* of 1,190 tons, constructed in 1849. Clark says that the *Isaac Bell,* under the command of Capt. John Johnston, "made three voyages from Havre to New York in less than eighteen days each, one being in the month of January, which is about the hardest month in the twelve for a ship bound to the westward." No vessel in the history of sail ever made three westbound passages of the Atlantic "in less than eighteen days," port to port, and the length of packet crossings was measured from port or city of departure to a similar arrival and not from land to land, light to light, or point to point. The *Isaac Bell* is officially credited with one 19-day westward passage—the fastest since the twenties, when the little *Bayard* (339 tons) made a crossing in 18 days; the next fastest westward run of the *"Bell"* occupied at least 20 days, as from 1830 to the *"Bell's"* departure from the New York-Havre packet service, only six authenticated westward passages were made in better than 21 days, port to port, and the *Gallia, Havre II, Sylvie de Grasse,* and *Henri IV* are each credited with 20-day runs, port to port. The *Isaac Bell* operated in the Havre line for only three years (1851-1854), following which she was a general trader and transient except in 1857-1858, when she temporarily joined the New York-London Black X packet fleet. During her career as a Havre liner, the *"Bell"* averaged 33 days on her westbound passages, and her longest crossing occupied 45 days.

The following ships, set forth with their records, were added to the nine regular New York transatlantic sailing packet lines during the seven-year period 1851-1857 inclusive:

Name of Line	No. of Vessels Added to Service 1851-1857	Registered Tonnage Total	Registered Tonnage Average	Registered Tonnage Largest and Smallest	Av. Length of Service	Westward Passages in Days Av. All Ships	Westward Passages in Days Shortest and Longest
					Years		
Black Ball	4	5,642	1,410	GREAT WESTERN, 1,443; HARVEST QUEEN, 1,383	23.5	33	HARVEST QUEEN, 16; HARVEST QUEEN, 44
Red Star	2	2,655	1,328	PHOENIX, 1,487; UNDERWRITER, 1,168	9	32	UNDERWRITER, 22; UNDERWRITER, 46
Blue Swallowtail	3	4,286	1,429	AURORA, 1,639; AMERICAN UNION, 1,146	11.3	37.3	AMERICAN UNION, 21; ONTARIO II, 56
Dramatic	4	6,662	1,666	CALHOUN, 1,749; ELLEN AUSTIN, 1,626	10.5	37	ORIENT, 20; CALHOUN, 58
Total of 4 Liverpool lines	13	19,245	1,480	CALHOUN, 1,749; AMERICAN UNION, 1,146	14.5	34.9	HARVEST QUEEN, 16; CALHOUN, 58
Black X	2	3,522	1,761	AMAZON, 1,771; PALESTINE, 1,751	10.5	29	AMAZON, 24; PALESTINE and AMAZON, 36
Red Swallowtail	6	6,259	1,033	ELLEN AUSTIN, 1,626; PATRICK HENRY, 880	19.8	37	LIVERPOOL, 20; CHRISTIANA, 70
Total of 2 London lines	8	9,781	1,223	AMAZON, 1,771; PATRICK HENRY, 880	17.5	35	LIVERPOOL, 20; CHRISTIANA, 70
Havre Old Line	2	2,134	1,067	ISAAC BELL, 1,072; SAMUEL M. FOX, 1,062	3.5	33.5	ISAAC BELL, 19; ISAAC BELL, 45
Havre Second Line	2	2,180	1,090	MERCURY, 1,350; WILLIAM FROTH-INGHAM, 830	14.5	35	MERCURY, 23; WILLIAM FROTH-INGHAM, 58
Whitlock	3	3,359	1,120	CAROLUS MAG-NUS, 1,349; HELVETIA, 971	10	37.3	CAROLUS MAGNUS, 22; HELVETIA and CAROLUS MAGNUS, 53
Total of 3 Havre lines	7	7,673	1,096	MERCURY, 1,350; WILLIAM FROTH-INGHAM, 830	9.4	35.6	ISAAC BELL, 19; WILLIAM FROTH-INGHAM, 58
Total of 9 New York lines	28	36,699	1,311	AMAZON, 1,771; WILLIAM FROTH-INGHAM, 830	14.1	35.1	HARVEST QUEEN, 16; CHRISTIANA, 70

The *Harvest Queen* of the New York-Liverpool Black Ball Line (C. H. Marshall & Company) was built by W. H. Webb, New York, in 1854. She measured 1,383 tons old measurement and 1,625 tons by the new measurement rules of 1865; she had three complete decks, with a depth of 28 ft. 6 in., a beam of 40 ft., a length of 188 ft. 3 in., and her load draft was stated as 22 ft. (American Lloyd's gives her length as 178 ft. 3 in., with a beam of 42 ft. 6 in.) The *Harvest Queen* was a good packet and sea boat that carried well. She had a reputation for being a reliable sailer, with better than average speed, but has the distinction of being one of the only two packets in the history of sail to make a westbound Atlantic passage in 16 days or better. On a winter crossing in 1857, the *Harvest Queen* encountered sailing conditions extremely favorable for a good run to the west, and making the most of them she rivaled—within a few hours—the all-time record westbound passage of another Black Baller, the *Yorkshire,* "the Queen of all Western Ocean sailing packets," which had been made eleven years earlier (November 1846). A comparison of the particulars and sailing records of the *Harvest Queen* and *Yorkshire*—both of which were built by W. H. Webb, of New York—is of interest:

Name of Packet	Year Built	Tonnage	Dimensions in Feet			Service in Line	Length of Westbound Passages in Days		
			Length	Beam	Depth		Average	Shortest	Longest
HARVEST QUEEN	1854	1,383	188.3	40	28.5	1854-1875 (21 yrs.)	34	16	44
YORKSHIRE	1843	996	166.5	36.2	21	1844-1862 (18 yrs.)	29	16	58

The *Yorkshire* averaged five days less than the *Harvest Queen* on her westbound passages and was much faster than the packet built eleven years later, which was 387 tons, or 39 per cent, larger; moreover, the *Harvest Queen* was more fortunate in escaping the severe adverse sailing conditions that resulted in the faster packet's taking 51 and 58 days, respectively, on two westward crossings, her own longest passage being 44 days. It can be said that the career of the *Harvest Queen* was generally uneventful. She was "in the news" only twice: the first when she made her amazing 16-day westward crossing in 1857 and the second when on the last day of 1875 she was sunk following a collision with the S.S. *Adriatic* and all aboard were lost.

The one sailing vessel in the North Atlantic "ferry" that challenged with a measure of success the fine sailing record of the older and smaller *Yorkshire* was the packet *Amazon,* built by Westervelt, New York, in 1854 for the Black X (Morgan's) New York-London line, in which service she operated with distinction for fourteen years (1854-1868). She was the largest ship at any time in the regular transatlantic or any other established sailing packet service. The *Amazon* was of 1,771 tons old measurement (216 ft. long, 42 ft. beam, and 27.4 ft. deep). Her uniformity of passages on the westward run was "more than amazing; it was marvelous," her record for fourteen years showing a fast crossing of 24 days, a slow crossing of 36 days, and an average of all westbound passages of 28 days, port to port. Only one other vessel had the credit of a faster "slow run record" performance, and that was the *Phoenix,* whose poorest time west was a run of 35 days; but the *Phoenix* was a clipper packet that saw only two years of service in the North Atlantic, and her average time during that period was three days longer and her fastest voyage two days longer than those of the *Amazon.* Two other packets equaled the *Amazon's* good "slow run record"; viz., the *Palestine* of 1,751 tons (next to the *Amazon,* the largest of all sailing packets and practically a sister ship built at the same time by the same builder) and the Black Ball liner *Neptune* of 1,406 tons (1,630 tons new measurement), launched by W. H. Webb, of New York, in 1855.

According to the English marine historian Basil Lubbock, the London Black X Line's *Palestine* of 1,751 tons, when under the command of Capt. J. M. Lord, "once landed her passengers at Plymouth in 14 days, having beaten the Cunarder on the run across." (Albion describes the *Palestine* as the "second largest of all the packets" and in so doing brands such bigger "transatlantic packets" as the *Ocean Monarch II* as "regular traders" and not "packets.") The *Palestine* averaged 30 days on her westbound crossings during her seven years of packet service (shortest passage west, 25 days; longest, 36 days), and she ended her career as the victim of a collision at sea on April 15, 1861, at the beginning of the Civil War and when only seven years old, being so badly damaged that she had to be abandoned. During twenty-two years of packet service (1855-1877), the *Neptune* averaged 31 days on her westward passages, with her best crossing of 26 days and her slowest passage of 36 days—another outstanding record of uniform sailing with only ten days' difference between her fastest and her slowest run westward, port to port. (The *Neptune* continued in the New York-Liverpool Black Ball Line up to the time that she was wrecked in 1877, about one year before the Liverpool sailing packet service was discontinued.) The *Amazon,* with a three-day better average and a two-day better quick crossing, showed a spread of twelve days between her best and her poorest performance; whereas the great *Yorkshire,* which experienced one heartbreaking bad-luck crossing of 58 days and another of 51 days, had a spread between her fastest and slowest passage of forty-two days. The old packet *York* of 433 tons, built by W. Crockett, New York, in 1824, served steadily for about eight years in the Swallowtail lines (1825-1833 inclusive), and whereas her sailing performance under the Blue flag of the Liverpool service was rather poor, this little packet in 1825-1826 and in 1832-1833, when operating under the Red Swallowtail flag in the New York-London run, averaged 30 days on her westward passages, made one crossing in 24 days, and, during her two relatively brief periods (aggregating nearly three years) in the London service, made no homeward passage in excess of 36 days—thus equaling the records of the big *Amazon, Palestine,* and *Neptune.*

The *Phoenix* of the Red Star New York-Liverpool sailing packet line ran in that service for only about two years, 1856-1858. She was built in 1853 near Portland, Maine, by Thos. E. Knight, Cape Elizabeth, and was in fact a medium clipper designed and built with an eye to the California trade. The *Phoenix* was of 1,487 tons (200.8 ft. long, 40 ft. beam, and 20 ft. deep). Before she became a Red Star transatlantic liner, the vessel made a 126-day westward Cape Horn passage to California, leaving New York January 30 and arriving at San Francisco June 5, 1855. The *Phoenix* looked far more like an out-and-out clipper than a packet or clipper packet, as she was (like the fast *Hurricane*) one of the few lofty-sparred "moonsail yarders." During her Western Ocean packet service, she averaged 31 days, port to port, on her westbound passages, but proved to be a most reliable and uniform sailer. Her best passage was made in 26 days (ten days longer than the 16 days made by the full packets *Yorkshire* and *Harvest Queen*) and her slowest in only 35 days. Like all fine-lined and lofty-sparred clippers, the *Phoenix* showed up better on an eastbound Atlantic crossing than she did—for either speed or comfort—on the westbound run. One of her eastward, or outbound, runs was claimed as a record. Under Capt. John Hoxie, the *Phoenix* was reported as arriving at Cork Harbor, Ireland, on January 24, 1859, 14 days and 9 hours out from Savannah, Ga. It was said that during the crossing the ship had averaged "352 miles per day for several days" and that "the run was equivalent to 13 days from New York to Liverpool." The *Phoenix* was burned at Melbourne, Australia, on February 28, 1860, when less than seven years old.

The *Mercury* of 1,350 tons, built by Westervelt & Mackey in 1851 for the Boyd & Hincken line of New York-Havre packets, or the Havre Second Line, was generally classed as a clipper packet and was said to be "of the same type as the *Dreadnought.*" This ship was the fastest and largest of the Havre Second Line packets and for eighteen years (1851-1869) and up to the end of the service averaged 33 days on her westward passages, port to port, her fastest and slowest crossings being made in 23 and 49 days, respectively.

The last sailing packets constructed for the Black Ball Line were built by W. H. Webb in New York: the *Alexander Marshall* of 1,232 tons old and 1,507 tons new measurement in 1860 and the *Charles H. Marshall* of 1,683 tons (new measurement) in 1869. They operated until 1878, when the line ceased business as a sailing packet line, after which they saw service as transients, or sailing tramps. The *Charles H. Marshall* was the last packet, as well as the last full-rigged ship, built in New York. She was a "complete three-decker" built for the Atlantic packet trade, but designed for general trading purposes and particularly with an eye to the requirements of the East India trade. The *Charles H. Marshall* was launched from the Webb shipyard on May 26, 1869 (about six months before Donald McKay in East Boston was finishing his last vessel, the medium clipper *Glory of the Seas* of 2,102 tons, built speculatively for his own account). We are told that with masts stepped, yards on deck, one anchor and 180 fathoms of chain aboard, the *Charles H. Marshall* drew 10 ft. 3 in. forward and 10 ft. 5 in. aft—practically on an even keel when light. She loaded to 24 ft. mean deep draft and had the reputation of being "a large carrier and a good sea boat."

The Black Ball (or Old) Line, toward the end, which came in 1878, continued operations with the *Isaac Webb* (1,359 tons old and 1,497 tons new measurement), *Great Western* (1,443 tons old measurement), *James Foster, Jr.* (1,410 tons old and 1,427 tons new measurement), *Alexander Marshall* (1,232 tons old and 1,507 tons new measurement), *Hamilton Fish* (1,628 tons new measurement), and *Charles H. Marshall* (1,683 tons new measurement). The *Neptune* (1,406 tons old and 1,630 tons new measurement) had been wrecked in 1877 and the ship *Harvest Queen* (1,383 tons old and 1,625 tons new measurement) sunk in collision with the steamship *Adriatic* on December 31, 1875, with all hands lost. The famous and original Black Ball Line, which originated the transatlantic packet service in January 1818, started the year 1878 (after sixty years of service) with six sailing ships in the New York-Liverpool packet run. However, disintegration was rapidly at work, money was being lost heavily, and in June its big and latest packet, the *Charles H. Marshall,* "the last of the packets," was temporarily put in the California run. The *Isaac Webb* sailed for Havre in July, and the *Alexander Marshall* cleared for London in August. From the middle of 1878 to 1880, the old Black Ballers (then owned by Charles H. Marshall & Company) that were kept in the transatlantic trade were merely transients; as a packet line, the Black Ball fleet ceased to exist in 1878.

The Red Star Line discontinued regular sailing packet service in 1867, but the *Underwriter,* one of the line's two surviving ships (*Constellation* of 1,560 tons and *Underwriter* of 1,168 tons), continued in the run until early 1869. The Blue Swallowtail Line withdrew its two surviving ships—the *Constantine* of 1,161 tons and the *American Union* of 1,146 tons—in 1867, but these vessels operated in the New York-London service until 1880 and 1877, respectively. The Dramatic-Patriotic (or the Spofford & Tileston) Line, running between New York and Liverpool, folded up about the same time as the Red Star and Blue Swallowtail Liverpool lines—and about ten years before the older Black Ball Line; the *Orient* (1,560 tons old and 1,833 tons new measurement) left the service in 1867, and the *Calhoun* (1,749 tons old and 1,865 tons new measurement) made her last packet passage in 1868 and then went into transient trading.

By 1863 the Havre-New York packet service had degenerated into an occasional, desultory sailing, and the *Mercury* (1,350 tons old and 1,156 tons new measurement), with a clipper model, continued in the line until 1869, or about a year after the *William Frothingham* (830 tons old and 750 tons new measurement) was withdrawn. The *Daniel Webster* (1,545 tons new measurement), which had operated in Enoch Train's Boston-Liverpool line before joining the New York-London Black X Line in 1858, and the *Hudson II* (1,801 tons new measurement) ceased operations as packets in 1869—the year after the *Amazon* (1,771 tons old measurement), "the largest of all regular packets," had been withdrawn and the line discontinued.

The New York-London Red Swallowtail Line (Grinnell, Minturn & Company) had seven packets in the service early in 1880, and although they carried no cabin passengers, mail, specie and fine freight, they were still scheduled liners and continued regular sailings through the summer of 1880. The packet *Sir Robert Peel* (940 tons old and 956 tons new measurement) was sold to the British for transient (tramping) service in September, and gradually the other vessels of the fleet were disposed of. In November 1880, the fine old packet ship *Liverpool* (1,077 tons old and 1,363 tons new measurement), built in 1843, arrived at New York on her last transatlantic run as a packet after thirty-seven years of continuous service. After the withdrawal of the *Liverpool,* three ships each made another voyage to London. The last of the Red Swallowtail liners to return to New York and the last ship to sail as a packet in transatlantic service was the three-decker *Ne Plus Ultra,* built by Gilchrist in Thomaston, Maine, in 1863, which was engaged in the London Red Swallowtail (Grinnell, Minturn & Company) service and arrived in New York (Captain Borden) May 18, 1881, to end, with a 37-day westbound passage, the last voyage ever made by a sailing vessel in the transatlantic packet service. After being surveyed and pronounced sound and seaworthy, this eighteen-year-old ship, which like all other sailing packets in the trade had not carried passengers for several years, was sold to German ship operators for $30,000. The *Ne Plus Ultra* was of 1,534 tons new and 1,396 tons old customhouse measurement (length 186 ft., beam 40.5 ft., depth 28 ft., and load draft 23 ft.). The only transatlantic sailing packet line under a foreign flag was the Hamburg-American Line, which started operations in 1847 with the ships *Deutschland, Nord America,* etc. This line was the forerunner of the later Hamburg-American Steamship Company.

Lubbock, the English historian, referring to the American transatlantic sailing packets of relatively full model and built for the severe conditions prevalent in the North Atlantic (particularly in the winter), writes of their holding their own with the world's finest and fastest clippers in working against the wind. The powerful, big, and heavily canvased clippers made some fast runs across the Atlantic eastbound with the wind behind them during the clipper ship decade of 1850-1859, but none of them made any outstanding runs or challenged the supremacy of the smaller, fuller-modeled, and less canvased packets on the westbound, or "uphill," run against the westerlies. Lubbock records eleven fast transatlantic clipper runs eastbound, all during the three years 1853-1855, but not a single fast clipper ship westbound crossing; he records eight fast sailing packet passages eastward and six westward and omits many of the fastest westward packet runs, including the two all-time record 16-day crossings of the *Yorkshire* and the *Harvest Queen.* "Beating to windward in a hard wind," says Lubbock, "showed all the American packets at their best," and he adds:

> Owing to the beautiful flat set of their cotton canvas and the sharpness with which their yards could be braced up, they could generally head a point higher than other ships. A case in proof was the race up channel between the beautiful iron clipper *Baron Colonsay* and the [Maine-built Red, or London] Swallowtail packet *E. W. Stetson.* It was a dead beat up, and though the *Baron Colonsay* went through the water about 3 knots an hour faster than the *"Stetson,"* the Yankee could head a point or more higher, with the result that, after a tussle of several days' duration, they took their pilots together. This speaks well for the *"Stetson,"* for a writer, in the NAUTICAL, states that in 1880 he personally knew the *Baron Colonsay* to average 15 knots for 24 hours and he himself measured her speed by log on one occasion as 17 knots.

The *E. W. Stetson* was one of the last Atlantic packets to be built, and she was constructed in 1862 by Hagget at Newcastle, Maine, for Grinnell, Minturn & Company and the New York-London Red Swallowtail Line, in which service she was operated eighteen years (1863-1880 inclusive) and until the line was discontinued. The *"Stetson"* was a two-decker and loaded to 21 ft. mean draft. She has been described as a "Down-Easter packet that carried well, was an excellent sea boat on the North Atlantic and a good sailer considering the fullness of her model, the small crew carried and her moderate sail spread."

After speaking of the weatherliness and handiness of the American packets, Lubbock says:

> No one ever saw an American ship with her sails set carelessly. Everything aloft was always of the best in order to stand the tremendous carrying on indulged in by American officers. All the leech

lines and bunt lines were also spilling lines on American ships so that the sails could be snugged up to the yards even when it was blowing hard. Thus, it was no uncommon sight to see a packet carrying main royal with wind abeam and passing ships under close-reefed topsails and foresail.

Leslie, writing of the early five- or six-hundred-ton New York-London Black X sailing packets, says: "Old channel pilots, after being in charge of one of these little packets, used to tell marvellous tales about their handiness and how they could turn them to windward through passages like the Gulf Stream on their way to the Downs or through the Needles Channel as easily as one of their own pilot boats."

Captain Paton, who had command of the New York-London Red Swallowtail Line packet *E. W. Stetson* for several years, tells how on one occasion, when off Portland Bill in the English Channel, with a fresh south-southwest wind blowing, he could see "about a dozen ships and barks away to windward, some more than hull down." The "*Stetson*" was carrying main royal, and the other ships were beginning to shorten sail. At 9:00 p.m., Paton tacked to the southward with Portland Light right astern, during the night he tacked three times, and at 8:00 a.m. the "*Stetson*" was standing in for the Start, with the lighthouse well on the starboard bow. Captain Paton says, "Although it was blowing quite strong, we were still carrying our main royal, and the fishermen, as we passed them, stood up and gave us three cheers. All those ships, which had been so much to windward the evening before, were now hull down to leeward and under close-reefed topsails."

The *E. W. Stetson,* after eighteen years of service as a packet, went into general trading when the Red Swallowtail discontinued operations. She was listed in Lloyd's Register when forty-three years old, and after that she was purchased by the Tice Towing Company and cut down to a barge. She continued in service until about 1913, when, over half a century old, she broke away from her tug in a heavy wind and was driven ashore.

Among the smaller transatlantic packet lines that had a checkered career, but kept in business to a relatively late period, was the "Regular Line" running between New York and Antwerp, Belgium. This line, owned by Post, Smith and Company, of New York, operated its ships *(David Hoadley* and *F. B. Cutting)* fairly regularly in this service well into the seventies.

It is said that the last packet ship doing service in the North Atlantic was the bark *Sarah* of 530 tons, owned by E. A. Adams & Company, of Boston, and operated by it between Boston and the Azores until 1895. This vessel was built at Stockton, Maine, in 1871. She was 135 ft. long and 31 ft. beam and, it is said, "was always well patronized, carrying ten to twenty passengers in the cabin and several hundred in the steerage."

Robert G. Albion in his admirable work SQUARE-RIGGERS ON SCHEDULE, writing of the end of the transatlantic packet service, well says:

For many years (prior to 1878-1881) the old liners had been packets in name only. To be sure, they ran in succession on fairly regular schedules and conformed to line organization, but all the business which had made the packets distinctive a half century earlier had gone. News now came instantaneously from overseas by cable. Mail, specie, fine freight, and cabin passengers arrived by the steamships of various lines, which were now bringing emigrants as well. As late as 1870, the sailing packets had been bringing a few dozen each trip in the steerage, but in their last years they were simply freighters, carrying on under the old flags and line organizations the traditions and little else of those smaller predecessors which had once served as the main link between the Old World and the New. Those earlier square-rigged liners had played their part in attracting commerce toward Sandy Hook and it still continued to flow in that direction. The true heirs of the Black Ball pioneers, however, were not the veteran sailing liners, which had been gradually wearing themselves out, neglected and unnoticed in the post-war years, but the steamships which sped past them on the Atlantic shuttle. These steamships, growing larger and faster every decade, had succeeded only after they had adopted the principle of line organization which had been the inspiration of Jeremiah Thompson years before.

Statistics of the New York Transatlantic Fleet of Sailing Packets from 1818 to the End of Sail

The number of sailing ships engaged in the New York transatlantic service and operated by real packet lines with regular scheduled sailings is shown herewith for certain years during the period 1818-1855 inclusive. (A few of the vessels were not in the service for the entire year in some of the years stated; hence the number of packet ships operating on regular scheduled sailings is also set forth in brackets.)

Lines	1818	1825	1830	1835	1840	1845	1850	1855
New York-Liverpool								
Black Ball	4	8	9	9	8	8	10	10
Red Star	..	4	4	5	4	4	4	3
Blue Swallowtail	..	4	4	4	4	5	5	8
Dramatic	..	..	..	..	4	4	5	4
New Line	..	..	..	..	..	4	..	..
Total 5 Liverpool lines	4	16	17 (16 regular)	18 (16 regular)	20	25 (24 regular)	24	25 (24 regular)
New York-London								
Black X	..	3	4	7	7	6	9	10
Red Swallowtail	..	2	6	5	6	6	10	10
Total 2 London lines	..	5 (4 regular)	10 (8 regular)	12 (10 regular)	13 (12 regular)	12	19 (16 regular)	20 (16 regular)
Total 7 lines New York-English ports	4	21 (20 regular)	27 (24 regular)	30 (26 regular)	33 (32 regular)	37 (36 regular)	43 (40 regular)	45 (40 regular)
New York-Havre								
Havre Old Line (later Union)	..	4	5	9	8	7	4	5
Havre Second Line	..	7	6	4	4	4	5	4
Whitlock (later Union)	..	1	1	3	4	4	4	3
Total 3 Havre lines	..	12	12	16	16	15	13 (12 regular)	12
Total 10 New York transatlantic lines	4	33 (32 regular)	39 (36 regular)	46 (40 regular)	49 (48 regular)	52	56 (52 regular)	57

The following table gives the name and tonnage (old customhouse measurement) of the largest packet ship engaged in the service of each of the ten regular New York transatlantic sailing packet lines that were operating as liners in the various years stated during the period 1818-1855 inclusive:

Lines	1818	1825	1830	1835	1840	1845	1850	1855
New York-Liverpool								
Black Ball	JAMES MONROE 424	PACIFIC II 586	CALEDONIA 647	ENGLAND 729	NEW YORK II 862	YORKSHIRE 996	ISAAC WEBB 1,359	JAMES FOSTER, JR. 1,410
Red Star	....	MANHATTAN 390	BIRMINGHAM 571	ENGLAND 729	STEPHEN WHITNEY 868	JOHN R. SKIDDY 980	CONSTELLATION 1,560	CONSTELLATION 1,560
Blue Swallowtail	....	SILAS RICHARDS 454	GEORGE CANNING 551	INDEPENDENCE 732	PATRICK HENRY 880	HENRY CLAY 1,207	NEW WORLD 1,404	AURORA 1,639
Dramatic	....	....	....	....	ROSCIUS 1,030	ROSCIUS 1,030	HENRY CLAY 1,207	CALHOUN 1,749
New Line	....	....	....	....	....	QUEEN OF THE WEST 1,160	....	....
Total of 5 Liverpool lines	JAMES MONROE 424	PACIFIC II 586	CALEDONIA 647	INDEPENDENCE 732	ROSCIUS 1,030	HENRY CLAY 1,207	CONSTELLATION 1,560	CALHOUN 1,749
New York-London								
Black X	....	HUDSON 368	SOVEREIGN 462	TORONTO and WESTMINSTER 631	MEDIATOR 660	VICTORIA 860	SOUTHAMPTON 1,299	AMAZON 1,771
Red Swallowtail	....	YORK 433	COLUMBIA I 492	ST. JAMES 641	WELLINGTON 726	PRINCE ALBERT 884	YORKTOWN 1,150	YORKTOWN 1,150
Total of 2 London lines	....	YORK 433	COLUMBIA I 492	ST. JAMES 641	WELLINGTON 726	PRINCE ALBERT 884	SOUTHAMPTON 1,299	AMAZON 1,771
New York-Havre								
Havre Old Line (later Union)	....	LEWIS 412	FRANCOIS I 496	SYLVIE DE GRASSE 641	IOWA 874	IOWA 874	NEW YORK 991	SAMUEL M. FOX 1,062
Havre Second Line	....	EDWARD QUESNEL 388	ERIE 451	UTICA 525	BALTIMORE 658	ST. NICHOLAS 797	WILLIAM TELL 1,153	MERCURY 1,350
Whitlock (later Union)	....	CADMUS 306	FORMOSA 450	POLAND 546	DUCHESSE D'ORLEANS 798	ARGO 967	GALLIA 1,190	CAROLUS MAGNUS 1,349
Total of 3 Havre lines	....	LEWIS 412	FRANCOIS I 496	SYLVIE DE GRASSE 641	IOWA 874	ARGO 967	WILLIAM TELL 1,153	MERCURY 1,350
Total of 10 New York transatlantic lines	JAMES MONROE 424	PACIFIC II 586	CALEDONIA 647	INDEPENDENCE 732	ROSCIUS 1,030	HENRY CLAY 1,207	CONSTELLATION 1,560	AMAZON 1,771

The gradual and steady increase in the size of sailing packets built for, or used in, the New York transatlantic service during the period 1820-1863 inclusive is shown by the following:

Name of Packet	Tonnage	Year Built	Line	Builder	Name of Packet	Tonnage	Year Built	Line	Builder
NESTOR	481	1815	Black Ball, Liverpool	J. Lozier, New York	PENNSYLVANIA	808	1836	Blue Swallowtail, Liverpool	Webb & Allen, New York
WILLIAM THOMPSON	495	1821	Black Ball, Liverpool	S. Wright, New York	GARRICK	895	1836	Dramatic, Liverpool	Brown & Bell, New York
JAMES CROPPER	495	1821	Black Ball, Liverpool	S. Wright, New York	SHERIDAN	895	1836	Dramatic, Liverpool	Brown & Bell, New York
NEW YORK I	516	1822	Black Ball, Liverpool	Brown & Bell, New York	ROSCIUS	1,030	1838	Dramatic, Liverpool	Brown & Bell, New York
FLORIDA	522	1822	Black Ball, Liverpool	Smith & Dimon, New York	LIVERPOOL	1,077	1843	New Line, Liverpool	Brown & Bell, New York
CANADA	525	1823	Black Ball, Liverpool	Brown & Bell, New York	QUEEN OF THE WEST	1,160	1843	New Line, Liverpool	Brown & Bell, New York
PACIFIC II	586	1824	Black Ball, Liverpool	Brown & Bell, New York	HENRY CLAY	1,207	1845	Blue Swallowtail, Liverpool	Brown & Bell, New York
BRITANNIA	630	1826	Black Ball, Liverpool	Brown & Bell, New York	CONSTITUTION	1,327	1846	New Line, Liverpool	Brown & Bell, New York
CALEDONIA	647	1828	Black Ball, Liverpool	Brown & Bell, New York	NEW WORLD	1,404	1846	Blue Swallowtail, Liverpool	D. McKay, Boston
UNITED STATES	650	1833	Red Star, Liverpool	Smith & Dimon, New York	CONSTELLATION	1,560	1849	Red Star, Liverpool	Westervelt & Mackey, New York
ST. ANDREW	651	1834	Red Star, Liverpool	C. Bergh & Co., New York	WEBSTER	1,727	1853	Dramatic, Liverpool	Portsmouth, N. H.
COLUMBUS	663	1834	Black Ball, Liverpool	Newburyport, Mass.	CALHOUN	1,749	1853	Dramatic, Liverpool	J. A. Westervelt, New York
ENGLAND	729	1834	Black Ball, Liverpool	Smith & Dimon, New York	PALESTINE	1,751	1854	Black X, London	J. A. Westervelt, New York
INDEPENDENCE	732	1834	Blue Swallowtail, Liverpool	S. Smith, New York	AMAZON	1,771	1854	Black X, London	J. A. Westervelt, New York
SHAKESPEARE	747	1835	Dramatic, Liverpool	Brown & Bell, New York	HUDSON II	1,801*	1863	Black X, London	J. A. Westervelt, New York

* New measurement; all other tonnage figures stated are old customhouse measurement.

The four pioneer packet ships in the service (1818) were of from 381 to 424 tons, the largest being the *James Monroe,* built by A. Brown, New York, in 1817. The only other vessel to enter the trade before the *Nestor* (a five-year-old ship) became a Black Ball liner in 1820 was the *Albion* of 434 tons, built by S. Wright, New York, in 1819. Comparative dimensions and particulars are stated herewith of the four largest and generally acknowledged "regular" packet sailing ships in the New York transatlantic service steadily engaged in maintaining the schedules of an established packet line:

Name	Line	Year Built	Tonnage	Length	Beam	Depth
				Feet	*Feet*	*Feet*
AMAZON	Black X, London	1854	1,771	216	42	27.4
PALESTINE	Black X, London	1854	1,751	213.8	42	27.8
CALHOUN	Dramatic, Liverpool	1853	1,749	206.3	42.8	28.6
WEBSTER	Dramatic, Liverpool	1853	1,727	206.8	43.5	21.5 (main)

Another large ship designed for the transatlantic trade was the *City of Mobile,* built at Greenpoint, Long Island, N. Y., in 1854. She was owned by Harbeck & Company, New York, measured 1,715 tons, was 215 ft. long, had three full decks, and was one of the first ships fitted with double topsails instead of the usual older enormous single topsails that proved so difficult to handle and required a large crew. The *Hudson II* of 1,801 tons new measurement has been referred to as "the largest transatlantic packet" of a regular line, a statement which is apparently incorrect, as the "new measurement" tonnage figures of sailing packet ship models gave a larger tonnage than the old customhouse measurement used in all packet ship statistics. The *Alexander Marshall,* built by Webb, New York, in 1860 for the Black Ball Line, was of 1,232 tons old measurement, but of 1,507 tons new measurement—an increase of 275 tons, or 22 per cent, and the *Ne Plus Ultra,* built in Thomaston, Maine, in 1863 (the same year that the *Hudson II* was built by J. A. Westervelt, New York), was of 1,396 tons old measurement and 1,534 tons new measurement, the latter being 138 tons, or about 10 per cent, more. That the *Hudson II* was probably smaller in tonnage—computed on the same basis—than any one of the large quartet mentioned above is indicated by her dimensions, which were: length 205 ft., beam 42 ft., and depth to upper deck 29 ft.

There was no standard ratio between the old and the new customhouse measurement, and a comparison between the two measurements of twenty vessels (all sizes) gave the new tonnage measurement exceeding the old by somewhat over 10 per cent. Three of the ships arbitrarily selected for comparison gave the new measurement less than the old, but the other seventeen vessels showed increased tonnage measurement by the new system varying from 5.5 per cent to 28 per cent—an average of 13.3 per cent. Of the ships that showed a lower tonnage by the new measurement, one of 1,560 tons was 1.7 per cent less; one of 400 tons, 3 per cent; but the *Desdemona,* which was 294 tons old customhouse measurement, was only 236 tons by the new customhouse measurement—a reduction of almost 20 per cent. With such a variation, it is evident that old and new tonnage figures cannot be compared by any percentage correction; but usually the new measurement on average type, sizable ships exceeded the old measurement by 10 to 15 per cent. In small ships the new measurement was apt to be less than the old. The new customhouse measurement was adopted by the United States in 1865 as a modification of the British system. It was designed to give a more accurate measurement of the cubic contents of a ship. It was generally reported at the time that the change was made effective that packets with full lines would show a larger registered tonnage under the new measurements and formula, but that with sharp clippers the reverse might be expected.

The sailing packets in the Western Ocean (transatlantic) service became, generally, steadily larger as time went by. The first four vessels of the pioneer Black Ball Line, operating in 1818, averaged only 393 tons. The vessels put in the run during 1826-1832 averaged 609 tons; the new vessels entering the service 1837-1845 averaged 895 tons; from 1846-1850, 1,217 tons; and during the period 1851-1855, 1,411 tons. Other packet lines showed a generally similar increase in the size of their ships as years advanced. The largest group of vessels placed in the service were the four ships that entered the Liverpool-New York run of the Dramatic Line in 1853-1856, which sailing packets averaged 1,666 tons (*Calhoun,* 1,749 tons; *Webster,* 1,727 tons). The two vessels that entered the London Black X service in 1854 *(Amazon* and *Palestine)* averaged 1,761 tons; they were the last and the largest ships built for the line and the "all-time" largest regular packets in the transatlantic service. Ships in the Havre lines were generally smaller than those in the British run, and the average tonnage of eight vessels entering the three Havre lines during the period 1850-1856 was 1,124 tons. The average tonnage of thirteen vessels entering the Havre sailing packet transatlantic service during the years 1822-1824 inclusive was 320 tons (minimum 270 tons; maximum 412 tons).

Of the later sailing ships to see packet service in the New York transatlantic run, only the *Hudson II* (205 ft. length and 42 ft. beam), the *Charles H. Marshall* (188.5 ft. length and 41.7 ft. beam), the *William F. Storer* and her sister, the *Hamilton Fish* (200 ft. length and 40.2 ft. beam), and the *Ne Plus Ultra* (186 ft. length and 40.5 ft. beam) had either length in excess of 200 ft. or beam in excess of 40 ft.; but of the eleven "later day" New York transatlantic sailing packet ships, ten had length in excess of 175 ft. (seven in excess of 180 ft.; six in excess of 186 ft.) and five had beam in excess of 40 ft. (seven in excess of 38 ft. and all in excess of 37 ft.). The sailing packets placed in the New York transatlantic service after 1858 were, therefore, sizable vessels.

The years in which the sailing packets operating in the New York-European port transatlantic "shuttle" during the era 1818-1858 were built, with the total number and tonnage of such ships constructed per year (and for certain other periods) and the average size of the sailing packets built during the various decades, are set forth herewith:

Year	Number	Total Tonnage	Number	Total Tonnage	Number	Total Tonnage	Average Tonnage per Ship
1807	1	384					
1811	1	277	2	661			
1815	1	481					
1816	2	716					
1817	3	1,160					
1818	4	1,366					
1819	5	1,749	15	5,472	17	6,133	361.1
1820	1	381					
1821	5	2,236					
1822	10	3,983					
1823	5	2,004					
1824	7	2,810	28	11,414			
1825	4	2,100					
1826	3	1,419					
1827	5	2,458					
1828	5	2,476					
1829	3	1,393	20	9,846	48	21,260	442.9
1830	3	1,502					
1831	6	3,079					
1832	6	3,540					
1833	8	4,644					
1834	4	2,775	27	15,540			

Continued on next page.

Year	Number	Total Tonnage	Number	Total Tonnage	Number	Total Tonnage	Average Tonnage per Ship
1835	6	3,817					
1836	8	5,992					
1837	6	4,662					
1838	2	1,828					
1839	5	4,198	27	20,497	54	36,037	667.3
1840	..	..					
1841	5	4,371					
1842	1	1,015					
1843	6	5,901					
1844	3	2,614	15	13,901			
1845	4	3,864					
1846	10	9,664					
1847	4	4,348					
1848	3	3,253					
1849	6	7,646	27	28,775	42	42,676	1,016.1
1850	11	12,245					
1851	4	5,011					
1852	2	2,909					
1853	4	6,464					
1854	5	7,954	26	34,583			
1855	1	1,406	1	1,406	27	35,989	1,332.9
	188	142,095	188	142,095	188	142,095	756

The relationship of the registered tonnage of regular New York transatlantic sailing packets to the average speed of all the westbound passages of such liners to New York during the period 1818-1858 is set forth herewith:

Registered Tonnage Range	Number of Ships	Average Passage Westbound	Number of Ships	Average Passage Westbound	Number of Ships	Average Passage Westbound
		Days		*Days*		*Days*
200 - 299	5	39.4				
300 - 399	24	39.7				
400 - 499	29	37.1				
500 - 599	22	36.9	80	38.0		
600 - 699	21	36.6				
700 - 799	13	35.3				
800 - 899	19	34.6				
900 - 999	12	34.5	65	35.3	145	36.8
1,000 - 1,099	9	35.4				
1,100 - 1,199	12	34.4				
1,200 - 1,299	3	34.0				
1,300 - 1,399	5	33.8	29	34.6		
1,400 - 1,499	6	32.7				
1,500 - 1,599	3	38.0				
1,600 - 1,699	1	34.0				
1,700 - 1,799	4	32.5	14	33.9	43	34.3
	188	36.3	188	36.3	188	36.3

The following table gives the year of construction of sailing packets in the New York transatlantic service during the period 1818-1858 and the total average time of crossing on the westward passage of these vessels during their years of service in this sailing packet era:

Year	Number of Packets Built	Average Time Westbound Passages	Number of Packets Built during Period	Average Time Westbound Passages	Number of Packets Built during Period	Average Time Westbound Passages
		Days		*Days*		*Days*
1807	1	49.0				
1811	1	38.0				
1815	1	42.0	3	43.0		
1816	2	40.0				
1817	3	40.0				
1818	4	41.0				
1819	5	36.6	14	39.1	17	39.8
1820	1	35.0				
1821	5	38.8				
1822	10	37.0				
1823	5	36.4				
1824	7	37.9	28	37.4		
1825	4	39.0				
1826	3	38.3				
1827	5	38.4				
1828	5	38.0				
1829	3	39.3	20	38.5	48	37.8
1830	3	36.7				
1831	6	36.8				
1832	6	34.0				
1833	8	36.7				
1834	4	34.0	27	35.7		
1835	6	36.5				
1836	8	34.5				
1837	6	36.0				
1838	2	36.0				
1839	5	34.2	27	35.3	54	35.5
1840	—	—				
1841	5	39.8				
1842	1	39.0				
1843	6	34.2				
1844	3	34.0	15	36.3		
1845	4	33.2				
1846	10	35.0				
1847	4	33.2				
1848	3	34.3				
1849	6	34.7	27	34.3	42	35.1
1850	11	36.1				
1851	4	33.5				
1852	2	36.0				
1853	4	36.0				
1854	5	32.4				
1855	1	31.0	27	34.8	27	34.8
Total	188	36.3	188	36.3	188	36.3

The following is a list of sailing packets in the New York transatlantic service that were regularly engaged with success in the "ferry," or "shuttle," trade for twenty or more consecutive years. Of the twenty-two vessels enumerated, all of which were built between 1839 and 1855 (average 1848), twelve (or over one-half) continued to the end of the sailing packet era, and such vessels as the *Patrick Henry* and the *Victoria* were sold out of the service because of the Civil War. As the life of modern steel vessels is generally considered as about twenty years (with 5 per cent depreciation and amortization per year) and wood sailing ships were deemed by insurance companies to have a far shorter life in usual ocean trade (with the winter North Atlantic branded the worst waters of the Seven Seas), the longevity of Yankee wood sailing packets in the Atlantic "shuttle" is surprising and the record is admirable.

Name of Packet	Tonnage	Year Built	No. of Years in Transatlantic Packet Service
LIVERPOOL	1,077	1843	37
SIR ROBERT PEEL	940	1846	34
NEW WORLD	1,404	1846	34
CORNELIUS GRINNELL	1,117	1850	31
PLYMOUTH ROCK	973	1849	31
CONSTANTINE	1,161	1850	31
AMERICAN CONGRESS	863	1849	30
ISAAC WEBB	1,359	1850	28
GREAT WESTERN	1,443	1851	27
RHINE	1,037	1850	26
PATRICK HENRY	880	1839	25
ELLEN AUSTIN	1,626	1854	25
AMERICAN UNION	1,146	1851	25
JAMES FOSTER, JR.	1,410	1854	24
COLUMBIA II	1,050	1846	23
NEPTUNE	1,406	1855	22
HARVEST QUEEN	1,383	1854	21
AMERICAN EAGLE	899	1846	21
YORKTOWN	1,150	1847	21
VICTORIA	860	1843	21
ASHBURTON	1,015	1842	21
HENRY CLAY	1,207	1845	20

The *Plymouth Rock* of 973 tons ran twenty-four years (1856-1880) in the New York-London Red Swallowtail Line and before that time ran in Train's Boston-Liverpool line, having thirty-one years of packet service on the North Atlantic (1849-1880) before she was sold to the Norwegians. The *Westminster* of 631 tons spent fifteen years as a transatlantic and seven as a New York-New Orleans packet, a total of twenty-two years (1835-1857) in packet service. The *Wellington* of 726 tons was thirteen years (1837-1850) in the New York-London run and sailed as a New Orleans packet until 1860. The *Mediator* of 660 tons was twelve years in the New York-London Black X Line and twelve years in the New York-New Orleans packet trade, or about twenty-four years in all in packet service (1837-1860). These packets were taken from the transatlantic run, as they had become too small for that trade, and the approaching Civil War interfered with and finally put a stop to the coastal sailing packet service, the ships generally becoming transients. The Charleston coastal packet *Calhoun* of 285 tons was twenty-one years (1823-1844) in that service, which was the longest packet service to 1848. The *Vicksburg* of 479 tons was twenty-two years (1835-1857) in coastal packet trade (eighteen years in New York-New Orleans service).

Of the sizable transatlantic packets, the records of the following vessels, which served from twenty to thirty-seven years in the Atlantic "shuttle," are of interest:

Name of Packet	Line	Tonnage	Year Built	Service in Line	Age on Leaving Packet Service	Later Record
					Years	
ISAAC WEBB	Black Ball, Liverpool	1,359	1850	1850-1878 (28 yrs.)	28	Then general trader; lost in 1880 when 30 years old.
GREAT WESTERN	Black Ball, Liverpool	1,443	1851	1851-1878 (27 yrs.)	27	In Pacific Coast trade 1879; later career unknown.
JAMES FOSTER, JR.	Black Ball, Liverpool	1,410	1854	1854-1878 (24 yrs.)	24	Then general trader and transient for unknown period.
COLUMBIA II	Black Ball, Liverpool	1,050	1846	1846-1869 (23 yrs.)	23	Sold Pacific Coast; re-rigged as bark; known to have been in service when 41 years old; no record of end.
HARVEST QUEEN	Black Ball, Liverpool	1,383	1854	1854-1875 (21 yrs.)	21	Sunk by collision with S.S. ADRIATIC Dec. 31, 1875.

Continued on next page.

Name of Packet	Line	Tonnage	Year Built	Service in Line	Age on Leaving Packet Service	Later Record
					Years	
NEPTUNE	Black Ball, Liverpool	1,406	1855	1855-1877 (22 yrs.)	22	Wrecked when in her 23rd year.
LIVERPOOL	New Line and Blue Swallowtail, Liverpool; Red Swallowtail, London	1,077	1843	1843-1880 (37 yrs.)	37	Continued in transatlantic service as general trader.
NEW WORLD	Blue Swallowtail, Liverpool; Red Swallowtail, London	1,404	1846	1846-1880 (34 yrs.)	34	Continued as transient.
CONSTANTINE	Blue Swallowtail, Liverpool; Red Swallowtail, London	1,161	1850	1850-1881 (31 yrs.)	31	Continued as transient.
ELLEN AUSTIN	Dramatic, Liverpool; Red Swallowtail, London	1,626	1854	1856-1881 (25 yrs.)	27	Built as general trader and continued as such after 25 years of packet service.
VICTORIA	Black X, London	860	1843	1843-1864 (21 yrs.)	21	"Sold British" during Civil War; owned Sydney 1866.
AMERICAN EAGLE	Black X, London	899	1846	1846-1867 (21 yrs.)	21	Continued as transient.
SIR ROBERT PEEL	Red Swallowtail, London	940	1846	1846-1880 (34 yrs.)	34	Continued as transient.
YORKTOWN	Red Swallowtail, London	1,150	1847	1847-1868 (21 yrs.)	21	Put into Azores Dec. 24, 1868, dismasted and leaking; condemned.
AMERICAN CONGRESS	Red Swallowtail, London	863	1849	1850-1879 (30 yrs.)	30	Continued as transient.
CORNELIUS GRINNELL	Red Swallowtail, London	1,117	1850	1850-1881 (31 yrs.)	31	Continued as general trader.
RHINE	Red Swallowtail, London	1,037	1850	1854-1880 (26 yrs.)	30	General trader before and after packet service; sold Canadian 1881.
PATRICK HENRY	Blue Swallowtail, Liverpool; Red Swallowtail, London	880	1839	1839-1864 (25 yrs.)	25	"Sold British" during Civil War.
PLYMOUTH ROCK	Train's Boston White Diamond; Red Swallowtail, London	973	1849	1849-1880 (31 yrs.)	31	"Sold Norwegian."
AMERICAN UNION	Blue Swallowtail, Liverpool; Red Swallowtail, London	1,146	1851	1852-1877 (26 yrs.)	26	Continued as transient.
HENRY CLAY	Blue Swallowtail and Dramatic, Liverpool	1,207	1845	1845-1865 (20 yrs.)	20	Continued as transient.
ASHBURTON	Blue Swallowtail, Liverpool	1,015	1842	1842-1863 (21 yrs.)	21	Continued as transient.

Of 187 identified square-rigged sailing packets used in the regular transatlantic lines operating on schedule out of the port of New York, an overwhelming percentage was built in New York City. Of the total set forth below, 161 (or 86.1 per cent) were built in New York State and 160 of them in New York City and vicinity, 24 (or 12.8 per cent) in New England, and only 2 small ships south of New York (1 on the Delaware and 1 at Baltimore, on the Chesapeake). New England built 7.8 per cent of the New York transatlantic packets prior to 1833 and 35.1 per cent during the decade 1848-1857 inclusive.

Where Built	Number of Western Ocean Packets Built Prior to 1833	1833-1847	1848-1857	Prior to 1858
Bergh-Westervelt yard, New York City	20	23	12	55
Webb yard (Isaac Webb, Webb & Allen, and W. H. Webb), New York City	1	25	12	38
Brown & Bell, including A. & N. Brown, New York City	21	13	—	34
Smith & Dimon, New York City	5	4	—	9
Sidney Wright, New York City	8	—	—	8
Ficketts & Crockett, New York City	6	—	—	6
Other New York City and State yards	8	3	—	11
Total built in New York	69	68	24	161
In State of Massachusetts	4	3	3	10
In State of Maine	—	—	6	6
In State of Connecticut	2	2	—	4
In State of New Hampshire	—	—	4	4
In State of Pennsylvania	1	—	—	1
In State of Maryland	1	—	—	1
Total	77	73	37	187

It is a surprising fact that the name "*Liverpool*" was given the sailing packet that holds the shortest record for transatlantic service as well as the one which holds the longest record. The first *Liverpool* (496 tons and only 46 per cent as large as her famous successor to the name of what was England's greatest seaport) was built by S. Wright, New York, in 1822, twenty-one years before the *Liverpool II.* She struck an iceberg July 25, 1822, while on her maiden voyage, was wrecked, passed out of existence, and her career terminated forty days after she was launched. A comparison between the dimensions of the two sailing packets bearing the name "*Liverpool*" may be of interest:

	Line	Built	Tonnage	Length	Beam	Depth
				Feet	*Feet*	*Feet*
LIVERPOOL I	Black Ball	1822	496	126	29.5	14.7
LIVERPOOL II	New Line, Blue and Red Swallowtail	1843	1,077	175.5	36.5	22.3

The *Liverpool II* was built by Brown & Bell, New York. She was a fine sea boat but not fast, her shortest westbound passage occupying 26 days, her longest 55 days, and the average of all her homeward crossings 36 days.

During the Civil War, which did not generally affect the transatlantic packet service to anywhere near the degree that it did the American clipper, semi-clipper, and general trader service on the Seven Seas, many of the United States transatlantic sailing packets were sold to the British, among which were the following that had been engaged in the New York-Liverpool, London, or Havre runs:

Name	Tonnage	Year Built	Year Sold	No. of Years of Transatlantic Packet Service
PATRICK HENRY	880	1839	1864	25
VICTORIA	860	1843	1864	21
FIDELIA	895	1845	1864	18
MARGARET EVANS	899	1846	1863	17
ADMIRAL	929	1846	1863	17
ALBERT GALLATIN	1,435	1849	1864	15
DEVONSHIRE	1,149	1848	1861	13
ZURICH	817	1844	1863	10
CAMBRIA*	362	1826	1862	4

*The CAMBRIA, when sold to the British, had also seen thirty years of service as a whaler and two years as a general trader (i.e., thirty-six years in all) under the American flag.

The HAVRE II (870 tons), built in 1845, was sold to the Norwegians in 1863 after she had served seventeen years as an American transatlantic packet.

The New York-Havre sailing packet lines generally "folded up" during the Civil War. The Old Line, the Whitlock and the consolidated Union lines discontinued sailings in 1863 (the *Helvetia* in 1864); the Havre Second Line had only two ships on the run after 1862, and they had both withdrawn from the service by 1869.

The following New York transatlantic sailing packets were withdrawn from the service permanently during the Civil War: in 1861, the *Christiana* of 666 tons; in 1862, the *William Tell* of 1,153 tons (after twelve years' service); in 1863, the *Ashburton* of 1,015 tons (after twenty-one years' service), the *West Point* of 1,046 tons (after sixteen years' service), the *London* of 1,145 tons (after fifteen years' service), the *Manhattan* of 1,299 tons (after thirteen years' service), and the *Carolus Magnus* of 1,349 tons (after ten years' service). During the war, the "queen" of the regular transatlantic packets, the *Yorkshire* of 996 tons, sturdily built by W. H. Webb, of New York, in 1843 for the Black Ball Line and generally proclaimed as the "fastest ocean packet," sailed from New York for Liverpool on February 2, 1862, and disappeared. Among the New York southern coastal sailing packets that were "sold British" during the Civil War were the *Catharine* of 477 tons, built in 1839, which ran sixteen years in the Charleston Ship Line (1839-1855) and went under British ownership after twenty-five years' service under the Stars and Stripes; the *Sultana* of 662 tons, built in 1844, which after seventeen years in the Holmes New Orleans line as the "greyhound" of the entire New Orleans fleet of packets was sold to the British and wrecked in 1864; the *Far West* of 598 tons, built in 1846, which went under the British flag after seven years' service as a New Orleans packet and seventeen years in the American merchant marine; the *Maid of Orleans* of 934 tons, built in 1848, which was "sold British" after twelve years' service as a New Orleans packet (1848-1860).

Tonnage in the Atlantic Sailing Packet "Ferry"

It is surprising that the transatlantic sailing packets represented such a small percentage of the American mercantile marine when the great influence of these ships in ocean trade and in the contest with Britain for commercial supremacy of the seas is taken into consideration. The year before the *Shakespeare* (747 tons) made the inaugural crossing of Edward K. Collins' new Dramatic Line in 1836, there were sixteen packets in the New York-Liverpool service totaling 9,992 tons (an average of 625 tons per ship), eight in the London service totaling 3,952 tons (an average of 494 tons per ship), and sixteen totaling 7,770 tons (an average of 486 tons per ship) operating in the three Havre lines. The total of the New York transatlantic packets was forty ships aggregating 21,714 tons and averaging 543 tons per bottom, of which twenty-four totaling 13,944 tons (an average of 581 tons per ship) were in service to English ports. Spears says that at this time the total number of American packets in the transatlantic fleet—all ports, including Boston and Philadelphia—"was no more than fifty, the tonnage of which was less than 35,000," but it would seem that packet ships (operating on a regular advertised schedule) of about 25,000 aggregate tons would be more nearly correct. In 1835 the tonnage of United States ships in foreign trade was 788,173 tons, the forty New York transatlantic packets representing only 2¾ per cent of this total foreign trade tonnage and the Western Ocean packets sailing from all ports, less than 3¼ per cent.

At the height of the transatlantic sailing packet ship service in 1848-1849, which time marked the beginning of the end of the construction and operation of real packet ships of a type that had made history and for ten years fought subsidized steam with a great measure of success, there were sailing out of and to New York in the regular, established Western

Ocean packet lines (operating on advertised schedules) the following numbers and tonnage of full-rigged ships:

European Port	Number of Lines	Number of Ships	Tonnage			
			Total	Average	Largest	Smallest
Liverpool	4	24	24,694	1,029	1,560	752
London	2	16	14,150	884	1,299	567
Havre	3	16	13,198	825	991	641
All ports	9	56	52,042	929	1,560	567

At this time (1848), which marked the discovery of gold in California and immediately preceded the Gold Rush and the dawn of the clipper ship era, with an unprecedented boom in American shipbuilding, the total United States marine tonnage engaged in foreign trade was 1,168,707 tons, and the tonnage of all the transatlantic sailing packets operating out of New York (which virtually monopolized the Western Ocean packet trade, the only lines giving competitive service being the relatively unimportant and lethargic Cope Line, of Philadelphia, and Enoch Train's unfortunate White Diamond Line, of Boston) represented somewhat less than 4½ per cent of the nation's shipping tonnage engaged in foreign trade.

Transatlantic Packets—Carriers of Mail and News

Much has been written of the sailing packet service, and many claims for its origination have been advanced primarily due to confusion with respect to the term "packet service," which requires (1) a regular established line between ports; (2) ships operating exclusively in the service; (3) common ownership by individuals, a partnership, or a corporation of the operating ships and associated facilities; and (4) regular sailings at a stipulated period apart or on a specified day of a certain month, with a uniform time between sailings. The first New York-Liverpool sailing packet line, later known as the Black Ball Line (with sailings on the first of each calendar month westbound from Liverpool and on the fifth of each month eastbound from New York), fulfilled these essential conditions and qualified that famous and popular line to claim priority in sailing packet service, as no other service—no matter how highly advertised and boosted by its admirers—conformed to all the fundamental requirements prior to the organization of the Black Ball Line in 1817. Mail service is not packet service; neither are vessels packet ships that are exclusively engaged in general service between specified ports. Merchantmen at the turn of the century (from the eighteenth to the nineteenth) were either "transient ships," meaning sailing "tramps," which picked up cargoes wherever they might be found and carried them wherever desired (always with an eye to continued voyages and profitable cargoes), or "regular traders," which generally operated between two or more particular ports with but little, if any, regard to schedule as far as some trades such as the transatlantic were concerned beyond, say, a spring and a fall sailing and two complete round voyages a year.

Because mail boats were called packet boats, it has been claimed that the packet service originated in Bristol, England, in 1711. This is untrue, and even if mail service was deemed to constitute packet service, the "packet boats" advertised to sail from Bristol to New York in 1711 would not qualify as pioneers, for Anglo-American mail service can be traced back to the seventeenth century. In the DAILY COURANT, printed in Bristol, England, on January 8, 1711, appeared the following:

Bristol, Jan. 6. This Day arriv'd here the Royal Anne Packet Boat, Captain Shorter, from New-York, with a Mail of Letters from her Majesty's Dominions on the Continent of America, which made her Passage from Bristol to New York in 50 Days and her Passage home in 28 days. This is the first Mail in return from the Continent since the erecting the Correspondence to and from this Kingdom and the said Continent.

The information here given was supplemented by the subjoined advertisement published in the same newspaper on the following June 15, showing that this regular mail service had taken a firm hold upon the public:

FOR NEW YORK

The Harley Packet-Boat from Bristol, Joseph Palmer, Commander, will be ready to Sail the last of this Instant June (Wind and Weather permitting) with the Mail of Letters for the Continent of America, which will be taken in at the General Post-Offices in Great-Britain, at any time between this and the last Day of this Instant June 1711. And other Packets will be successively provided to depart monthly, with such Letters which shall be in the General Post-Office in Bristol, by the last Thursday in every Month. All Merchants and others, who have Occasion to send Goods or small Parcels, and are desirous to go as Passengers to New York, New-England, Long-Island, Rhode-Island, East or West Jersey, Pennsilvania, Mary-land, Virginia or Carolina, applying themselves to William Warren, or Jonathan Scarth, Merchants, at the 3 Crowns in Gracious-Street, London; or to Richard Champion, or Charles Hartford, Merchants, in Bristol, may be accommodated on reasonable terms. P.S. Note, That there are already Posts, and other Conveyances from New York to the several above-mentioned Places, And that the Reason why the late Packets have not duely kept their Course hath been occasioned by the Death of Sampson Mears, late Proprietor of the said Packets.

Whereas the name "packet" was given during much of the nineteenth century to freight and passenger vessels engaged in a specific trade (such as "China packets") and sailing neither on schedule nor between fixed ports, the designation prior to the inauguration in January 1818 of the American transatlantic sailing packets technically seemed to lodge with only the "mail packets," which were generally brigs of not more than 200 tons and were either backed or owned by the British Government. They were used primarily to carry mail and about half a dozen passengers, but no freight, and sailed at regular intervals and on a specified date and hour from the home port to certain foreign countries. The mail packets operated by the British post office authorities maintained a regular service between Falmouth (the terminus on the southwestern tip of England) and New York, with sailings "about once a month." This service, inaugurated in 1755, was continued fairly well—but erratically—up to the Revolution and afterwards with Halifax, Canada, as the American port, but was not operative during the war years 1812-1814. The British packet line succumbed before the better and larger ships, faster voyages, and superior service of the many American packet lines, with their frequent sailings and excellent, fast, and dependable service, and the fast mail brigs were withdrawn from service in 1828. The American packets, moreover, sailed direct across the Atlantic between either London or Liverpool and New York, which was the American port that the British themselves had selected as the best and most central for mail accumulation and distribution and for administrative purposes on the American side. The British mail packets, on the other hand, did not make direct passages between the English and American terminals. During the spring, summer, and fall, they called en route at Halifax, Nova Scotia, and in the winter months at Bermuda. Evidently, the only real virtue of the service was a fixed sailing time, for a British mail brig sailed regularly across the Atlantic on the first Thursday of each month. Aside from this one important point, the sailings were less satisfactory than those of the regular American traders, and when the American sailing packet service was inaugurated, the British mail packet service was thoroughly eclipsed by superior and larger ships running on schedule and making much better time between ports, notwithstanding the fact that the British craft in the service were built, as were naval dispatch vessels or yachts, primarily for speed and with no thought of carrying capacity. In an effort to attain speed, the designers and builders of these little British packets sacrificed stability and seaworthiness, and the type was not suitable for the turbulent waters and heavy winds of the North Atlantic; so many of them succumbed to the severe wintry gales and angry seas and foundered that they became known as "coffin brigs."

Robert G. Albion, in SQUARE-RIGGERS ON SCHEDULE, says that in March 1816 two British mail packets arrived in New York on the same day, both having crossed the Western Ocean by way of Bermuda. One of these craft (the *Princess Charlotte*), carrying the January mail and making a passage of 81 days, had sailed from Falmouth one month before the other (the *Osborne*), which carried the February mail and made the passage in 43 days.

It is interesting to note that, after advertisements appeared in the New York press of the inauguration and initial sailings of the pioneer American packets of the Black Ball Line, the British authorities decided to sail their mail packets direct between New York and Falmouth, and the brig *Lady Wellington* sailed from New York with the December 1817 mail and did not call at either Halifax or Bermuda on her run to England. The British mail brigs, therefore, felt the competition of a real packet service before the first American packet ship actually sailed. The usefulness of the British packets to the commercial community was naturally quite small due to the fact that, aside from erratic arrivals and generally slow passages (port to port), they carried no freight whatsoever and only a very few passengers—generally less than six.

During the years preceding the American Revolution, there were several general traders owned in Boston named *"Packet."* One was the *Boston Packet* (Capt. John Marshall) and another the *London Packet* (Capt. Robert Calef). Each was under 300 tons, but *"Packet"* was merely part of the name.

In 1784 the Gallo-American Society induced the French Government to start a so-called "packet" service between Lorient and New York. The ships were, in fact, part of the French Navy, were commanded by French naval officers, were well built, of about 300 tons, but were wretchedly managed. This service collapsed through inefficiency in 1792.

The Boston Importing Company was formed early in 1805 to operate vessels and import and export goods between Boston, Liverpool and London. In May 1805, it advertised the ship *Sally*, "intended for a regular ship between this port [Boston] and Liverpool, 323 tons, coppered to the bends and having elegant accommodations for passengers." She was not a packet, but a regular trader. Among other vessels owned by the company (which soon became involved in financial troubles) was one named *Packet.*

The ship *Palladium* of 341 tons was built at Salem in 1816 to run as "a regular packet between Salem and Liverpool," which, in fact, meant being a regular trader and carrying some passengers and mail if such should be procurable. When this "transatlantic packet" actually sailed, it was to Calcutta, India, and not to Liverpool.

So many vessels were called packets in the first three decades of the nineteenth century that the designation was in disrepute and did not establish itself as an honest description of type until the thirties. The pioneer American packets were popularly known as "line ships"; hence the development of the word "liner" to describe legitimate packet ships operating in an established line on an advertised schedule between specified ports.

Prior to the inauguration of the New York-Liverpool Black Ball sailing packet line on January 1, 1818, and its advertised scheduled sailings of once a month "promptly" at a specified date and hour, from each side, to carry "passengers, mail and freight" under command of captains of "great experience and activity," Boston—and at times Philadelphia, Norfolk, Portland, or Quebec—often got the news ahead of New York. Early in the century, Boston was a great rival of New York as a shipping metropolis; it had fast little "packets" of its own and was favored by lying nearer to Europe. The Black Ball (New York-Liverpool) Line started with four little ships of from 381 to 424 tons and ranging in age from seven months to ten years. In 1822 the Black Ball Line had two regular sailings a month (on the 1st and the 16th), and as two competitive lines had entered the field, with a Swallowtail

Line sailing every 8th and a Red Star Line regular sailing on each 24th, New York had four regular transatlantic sailings per month to and from Liverpool, England. By the middle of 1824, these four sailings a month to Liverpool had been augmented by two regular packet sailings a month to Havre, France, and one to London (Portsmouth), England. With what was virtually a weekly service to Liverpool established, backed up by three extra sailings a month to Havre and London (Portsmouth), New York became the "news port" of the United States. Thanks to its transatlantic sailing packets, New York generally knew what was going on abroad before anyone else in America, and on occasion such knowledge was translated into rich profits. Speed by means of sail was king on the ocean in the realm of news long before the clipper ship was built and before the China tea trade and the gold finds in California and Australia made their great demands for ships that would make rapid voyages.

In the first quarter of the nineteenth century, land travel was naturally extremely slow; yet in 1824 the newspaper DAILY ADVERTISER published news from Liverpool as of April 15 received by way of Quebec, whereas direct news to Philadelphia had not been received beyond April 8. Years later, when the North Atlantic was extremely turbulent and western gales were delaying packets on the run to northeastern American ports, European news actually reached Philadelphia and New York via New Orleans. Before the Black Ball Line, with its packets sailing on a regular advertised schedule, was inaugurated, the New York POST said: "Our accounts with Great Britain are eighty days old, which is something remarkable considering the great intercourse between the two countries." Prior to the steady operation and prompt, scheduled sailing of the packet liners, news often traveled slowly. News of the peace settlement signed at Ghent, Belgium, on December 24, 1814, was not received in any part of America until 49 days after this most important event, and these "happy tidings," reaching New York on the evening of February 11, 1815, had been sent across the ocean "express" by a British Government dispatch ship, H.M.S. *Favorite,* built, manned, and operated for speed. Word of Napoleon's escape from the island of Elba in the Mediterranean took 60 days to reach New York. The first account of the Battle of Waterloo reached Boston in 43 days and New York 46 days after the event. The story of the British bombardment of Algiers in 1816 took 57 days to reach New York. (Boston heard of it 2 days earlier by means of a trading vessel from Bordeaux, France.) Rumors of Napoleon's death at St. Helena in 1821 reached New York by way of Cape Verde and Boston in 95 days, and official word did not arrive until 108 days after the event.

By 1830, with the transatlantic sailing packet service well established, news was traveling to the United States much faster and regularly, but heavy winds delayed news at times, and we read in the July press that New York was "48 days out of news from Europe." Word of King George IV's death was received in 41 days, the outbreak of the July revolution in France in 36 days, and the deposition of the French king in 34 days—all via Black Ball liners. On one occasion English political news first reached New York in 41 days by a Havre packet, but in 1834 New York received word of Lafayette's death in 30 days by means of a fast Swallowtail packet passage from Liverpool. Queen Victoria's accession to the British throne in 1837 was known in New York 34 days after the event by means of a London (Portsmouth) sailing packet.

Harriet Martineau, an English writer, in RETROSPECT OF WESTERN TRAVEL (published in London, 1838), described her crossing from Liverpool to New York in 1834 on the American sailing packet *United States* (Capt. Nathan Holdredge). This vessel was a Red Star liner of 650 tons (length 139.8 ft., beam 32 ft., depth 16 ft.), built in 1833 by Smith & Dimon, New York. The packet operated for eleven years (1833-1844) in the Atlantic "ferry" and "went missing" on a westward crossing in December 1844. The *United States* sailed from Liverpool on Saturday, August 9, 1834, with twenty-three cabin passengers, and because of adverse wind conditions "the captain had engaged a steamboat to tow us out to sea." At dusk, the steam towing vessel "having performed her engagement," the sailing packet disengaged herself and began ploughing her way to the north coast of Ireland "because of winds unfavorable for the southern route." On August 15, however, six days out, the *United States* was still but "little more than three hundred miles from Liverpool." We read: "We went south of the 'Banks' and so missed something besides the fog—our hoped-for treat of fresh cod and the spectacle of the fishermen's boats." Other writers tell of the practice of transatlantic westbound sailing packets, when virtually becalmed on the Banks, of exchanging with the fishermen barrels of salt pork for liberal quantities of freshly caught fish. Harriet Martineau is also responsible for the following choice bit dealing with the sanctity of the mail on transatlantic packets:

> A regular piece of amusement on board these packet ships is emptying the letter bags out on the deck. A fine morning is chosen for this; and to a person who sits on the rail, it affords a pretty picture. The ladies draw their chairs around the immense heap of letters; the gentlemen lie at length and scarcely an epistle escapes comment. A shout of mirth bursts forth now and then at some singular name or mode of address; commonly at some Irish epistle, addressed to an emigrant in some out of the way place, which there is scarcely room to insert, though the direction runs from corner to corner over the whole square.

Fortunately, it would seem, the tampering with the mail "ceased at a point before the envelopes were opened and the contents read or mutilated."

On the passage of the *United States* described by Miss Martineau, the packet on September 15, when thirty-seven days out from Liverpool, was "still between five and six hundred miles from the port"; but on the 19th land was sighted, the pilot with newspapers came aboard "and seemed likely to be torn in pieces by the ravenous inquirers for news." Then arrived "a boat from the newspaper office of the COURIER AND ENQUIRER, whose agent would not hear of dinner or any other delay, but shouldered his bag of news, got the list of our names, and was off." The passage ended "at eight in the evening of September 19, 1834, after a long but agreeable voyage of forty-two days."

Before the day of the acknowledged supremacy of steam, small "clippers" or extremely fast sailers were built and either owned or chartered by the American press to meet incoming sailing packets and "scoop" rival papers for the news. As early as 1828, the New York JOURNAL OF COMMERCE had a "clipper schooner" built at Baltimore expressly for this purpose. James Gordon Bennett, in 1835, established a fleet of little fast "news boats" with a commodore in charge. The Wall Street papers jointly operated a fast and sizable boat of this type, and the newspapers of New York sent their craft from forty to a hundred miles from the city, along the sea lanes, to collect the news and rush it to New York for a newspaper "beat" and often an extra, special edition. One of the first demands for fast clippers originated in New York because of the competition of the newspapers and the desire of the citizenry for the latest information from abroad, part of which was used in trade to the advantage of those who heard the news first in regard to events, prices, values, and demand for goods.

On one occasion the Wall Street papers actually sent a semi-clipper pilot boat to the English Channel in an attempt to scoop news with respect to the possible repeal of the British Corn Laws, but a small fast pilot boat is not an ideal vessel to negotiate a rapid crossing of the Atlantic westbound. She was no match for the regular "liners" in getting the news to the United States, as she had to compete with the fastest sailing packet of her day, the 996-ton Black Ball liner *Yorkshire* (Captain Bailey), which sailed from Liverpool with the news on May 5. Notwithstanding western gales, the packet had reached a point ninety-seven miles from Sandy Hook on May 31 when at 3:00 p.m. she was contacted by a James Gordon Bennett "clipper pilot boat," which, after receiving the latest English newspaper, sailed for Easthampton, Long Island. Here a special messenger landed and by a combination of travel by foot, horse and wagon, and a primitive Long Island railroad locomotive got the news to the Bennett paper at 1:00 a.m. on June 1 by what was called at the time "the quickest and most remarkable express ever run." It would seem certain that to obtain news in an office in New York City in eleven hours from the time that the sailing vessel bringing it west was ninety-seven miles out from Sandy Hook (and this without any benefit of telegraph or steamboat) established a record for the period.

In the columns of the New York HERALD (James Gordon Bennett), early in 1841, it was said:

> There is to be somewhat of a contest this year between our far-famed sailing packets and the steamships. It is yet to be discovered which are the most comfortable and profitable—which the best family conveyance. . . . The quicker the Atlantic is crossed by the steamers, the swifter sail our crack packet ships. . . . Our packet ships will continue to receive their share of the traveling community so long as they run regularly, but if they make themselves "transient," they must lose thereby ultimately.

A year later, in the same newspaper, appeared the following:

> The recent delays and accidents to the steamships have produced a bit of revolution in the passenger business to Europe. The truth need not be any longer concealed and may now be told—Cunard's [subsidized British] steamers [running to Halifax and Boston] will have to come direct from Liverpool to New York or they will be run off the ocean by the New York packet ships in less than two years. They cannot get passengers at Boston—people will not go so far out of their way.

In August 1846, a HERALD editorial commented very favorably on the performances of New York transatlantic sailing packets and predicted a "rosy future" for them. The packets, Bennett affirmed, were being built on a larger and grander scale, with more room for cargo and more spacious and better accommodations for passengers. He estimated that, notwithstanding the fact that British steam packets in the New York service and the Cunard steam mail packets subsidized by the British Government were then running regularly to and from Boston, about half of the cabin passengers crossing the Atlantic were traveling by sailing packets and half by steamship. "The sailing packets," he asserted, "now carry more travellers than they did before the steamship entered the field and an infinite deal more freight, and consequently their profits have been greater and the lines more profitable."

In the days of the transatlantic sailing packets—and of sailing ships in general—speed was highly esteemed in relation to news of world happenings. Transatlantic passages westbound were advertised and often given pre-eminence in the public mind in relation to the delivery of foreign mail and the transmission of news by word of mouth by ship's officers and passengers, who, upon a ship's arrival, gave publicity to important happenings abroad. One great argument in favor of steamships on the Western Ocean was the expected regularity, uniformity, and speed of transporting the mail, and the steamships took over the bulk of the business of carrying news some fifteen years before they gained supremacy over sail in passenger patronage. As early as 1838-1840, an overwhelming percentage of mail and news of happenings abroad reached New York by steam vessels that, in those days, were wooden craft, heavily sparred and canvased, and propelled by paddle wheels. In the late thirties and early forties, the steamers, because of their better passages against the prevailing North Atlantic west winds, began to take over the mails, and British steamers were kept in operation in the service—in the face of great operating losses and indifferent passenger and business patronage—by the heavy subsidies paid by their government.

American sailing packets swept the North Atlantic in the days of sail. They were supreme in design, construction, and operation in the realm of speed up to the advent of steam and for many long years successfully fought wood paddle-box steamers. By the time of the Civil War, sailing packets on the Western Ocean were defeated by steam, for the demand of passengers and later of the shippers of freight followed the earlier cry of speed for news. American wood side-wheel steamers were better than the British vessels of similar type, but such American craft were driven from the trade by a divided country, an unsympathetic and shortsighted Congress, and British subsidies to British ships to carry the mails and win the trade (both passengers and goods) by reduced length of passages. Ultimately, the British (who could not build wood ships to compete with those of the United States) obtained the trade from American wood sail and drove the United States from the seas by means of iron, the screw propeller, and, later, the compound expansion engine.

Earnings, Costs, and Depreciation of Packet Sail

There is but little authentic information available pertaining to the earnings of transatlantic sailing packets. It is said that the *Orient* (1,560 tons), which operated in the New York-Liverpool Dramatic (or Spofford, Tileston & Company) Line from 1853 to 1867 inclusive, under the command of Capt. George S. Hill, "once made a gross income of $50,000 for a round voyage," and the *Webster* (1,727 tons), which operated in the same line during the years 1853-1865, is credited with making "$60,000 gross on one round trip with Capt. Jos. J. Law in charge." Albion says that during 1846, when the needs of famine-stricken Ireland were most serious, "freight rates on foodstuffs jumped to four times their normal level, and one new packet carried out such a load on her maiden trip that it was predicted that she would pay for herself in three or four voyages at that rate." During this period, not only were full cargoes being moved eastward at very high rates but also immigrant travel west was booming to such an extent that a profitable passage westbound was assured. An article published in 1839 stated that during the decade ending 1832 the average income from cargo was about four thousand dollars westbound and thirty-five hundred eastbound. A later writer declares that the "usual returns of an outward voyage" of a New York transatlantic sailing packet were "from $5,000 to $10,000 freight money and from $2,000 to $5,000 passage money, although occasionally the sum was much larger." Albion's research leads him to believe that "the average eastbound cargoes in 1818 could scarcely have yielded more than $1,000 a trip, while those in 1835 would seem to bring in about $3,000." The revenue from freight on westbound crossings ran somewhat higher—probably about fifteen per cent. Albion writes:

> Since a packet made three trips a year in each direction, her freight earnings around 1835 would probably amount to at least $20,000, while passengers, specie and mails would increase that amount to the neighborhood of $30,000 in gross earnings. From that, it would be necessary to deduct about $4,000 for wages, $2,500 for insurance, and a considerable amount for food, repairs, port charges and the like.

At about this time, a 600-ton packet cost approximately eighty dollars per ton, or forty-eight thousand dollars, and could be expected to serve about twelve years in the packet trade and then become a regular trader, transient, or whaler for a further, indefinite period, thus permitting the depreciation to be figured at the rate of about thirty-two hundred fifty dollars per year and net profits at about twelve to fifteen thousand dollars per year, or some twenty-five to thirty-three per cent on the initial investment. Actually, the average net return on capital invested in the New York transatlantic packets—year in and year out—before steam competition was probably nearer fifteen to twenty per cent.

Albion states that the cost of wages of a New York Western Ocean sailing packet in the late thirties was about four thousand dollars a year. Sailors received about fifteen dollars per month, but this amount was raised in the mid-forties to twenty-one dollars. The captain quite generally owned a share (or a fraction) of his ship and drew a nominal salary of thirty to forty dollars per month, but he made from four thousand to five thousand dollars a year all told because of agreed-upon and customary perquisites. The captain of a New York transatlantic packet for many long years received an income from the mail handled, and this "letter money" averaged about thirty dollars a passage (each way) when the service started, about sixty dollars in 1822, one hundred fifty dollars in 1833, and approached two hundred fifty dollars a trip, or fifteen hundred a year, if the ship made the usual three round trips, or six passages. Spears says that the New York packet skipper also received "five per cent of the freight money, a fourth of the cabin passage money, . . . and the privilege of carrying his wife board free." This percentage of the freight charge paid to the master of a packet was known as "primage" and was usually an added charge against the shipper to be paid to the captain and not an amount deducted from the freight revenue received by the owners. The preserved records of Capt. John Williams of the Black Ball liner *Albion* (434 tons), wrecked on the Irish coast on April 25, 1822, show that on her final trip the total passenger fares amounted to $3,080 and that, of this amount, the line took $1,433 at the rate of £15 a head, the balance of $1,647 being credited to Captain Williams, who had to provide food and wines. In addition, the skipper received $42.64 as half of the freight charges on the specie carried, and his "wages" are stated as $28.00 for twenty-one days' service up to the time of the wreck.

It has been said that New York transatlantic sailing packet owners charged from 10 to 12½ per cent of a ship's original cost to expenses as depreciation per annum. This was high and, as the service developed, was unwarranted by facts dealing with the longevity of the vessels. After a ship left the Atlantic packet service, she was usually good for many more years' work either in coastal lines or as a regular or general trader, a transient, or a whaler. In the earlier years, the packets rather quickly had to be replaced by larger ships to handle the trade acceptably, but this fact should have had but little effect on the annual depreciation charge. Throughout the greater part of the packet era, larger ships with their increased capacity for transporting freight and emigrants were displacing smaller but sound vessels.

When the transatlantic packet lines were inaugurated, the ships put in this service cost about seventy-five dollars per ton, and the Liverpool Black Ball Line's five first ships—averaging 400 tons—were worth some thirty thousand dollars each when new. The eight pioneer ships of the Liverpool Red Star and Blue Swallowtail lines, put in the packet service in 1822-1823, averaged 369 tons and cost about twenty-eight thousand five hundred dollars each. The sixteen earliest ships of the London Black X and Red Swallowtail and the Havre Old and Second lines, put in service in 1822-1824, averaged 328 tons and cost about twenty-six thousand five hundred dollars each when new.

When the New York-Liverpool Black Ball Line changed owners in 1834, its six newest ships are said to have been sold for $216,000. These ships, with tonnage and stated age, were as follows:

Name of Ship	Tonnage	Built	Name of Ship	Tonnage	Built	Name of Ship	Tonnage	Built
CALEDONIA	647	1828	NORTH AMERICA	610	1831	EUROPE	618	1833
HIBERNIA	551	1830	SOUTH AMERICA	605	1832	ORPHEUS	573	1833

The total tonnage purchased was 3,604 tons, and the age of the ships varied from one to six years. Allowing 8 per cent depreciation per year, the sale price of $60.00 per ton is equivalent to a value of $77.80 per ton for new ships averaging 601 tons each, and the cost price of these ships built during the period 1828-1833 can be placed at about forty-six thousand seven hundred fifty dollars each.

In 1844, when eight years old, the *Oxford* (752 tons) of the Black Ball Line was appraised, during legal proceedings, by a board of outside packet owners, and her value was set at $27,500. In December 1834, the *United States* (650 tons) of the Liverpool Red Star Line and the *England* (729 tons) of the Black Ball Line foundered during a period of terrific westerly gales when bound for New York, and these packets—eleven and ten years old, respectively—were given an "estimated value of $30,000 each," which is obviously high, for if depreciation is figured at only 5 per cent per annum, the original cost is set at over sixty-three thousand dollars, i.e., over ninety-one dollars per ton, for ships averaging 690 tons. The *Ontario I* (489 tons) of the London Red Swallowtail Line, built by Webb, New York, in 1830, was sold at auction in London in 1843 for $15,350. This ship, which cost about forty thousand dollars, had depreciated in value, therefore, at the rate of $1,900, or 4¾ per cent, per annum. Albion says that the Havre packet *Charlemagne* (446 tons) was valued at $12,000 when wrecked at the age of twenty and that the old Swallowtail liner *York* of 433 tons (after a varied packet, general trading, and whaling experience) "was twenty-five years old when sold for $8,050." The *York*, built by W. Crockett, New York, in 1824, cost $32,500, so the price paid allowed for a depreciation of only 3 per cent per annum. The good price realized by the owners of the *York* was, however, due to the then big demand for tonnage occasioned by the California Gold Rush.

The "big quality trio" pioneers of the newly formed Edward K. Collins New York-Liverpool Dramatic Line established a new high standard for Western Ocean packets, and these fine, fast, commodious, and splendidly equipped and appointed ships (the *Garrick, Sheridan,* and *Siddons,* each of 895 tons) are said to have cost $85,000 each, or $95 per ton. The *Garrick,* with a fast 18-day westbound run to her credit (made in the fall of 1839), ran ashore on Deal Beach, New Jersey, during a heavy fog in January 1841, and at the time of this catastrophe, when about four years old, was valued at $70,000, showing an estimated depreciation of $3,750, or 4.4 per cent, per year—or an expected life of about twenty-three years. (Actually, this ship operated for nineteen years in the transatlantic packet trade and then engaged in transient or general trade.)

The *Henry Clay* (1,207 tons), built by Brown & Bell, New York, for the Liverpool Swallowtail line at a cost of $87,000, or $72 per ton, was burned at her East River pier on September 5, 1849, when four years old. Her estimated value at the time of the fire was placed at $66,000, showing a depreciation of $5,250 a year, or 6 per cent per annum, for the first four years of service (an estimated life of 16⅔ years). Possibly the placing of the relatively low value of less than $55 per ton on a four-year-old packet was due to the fact that the ship had been ashore at Squam Beach, New Jersey, for almost a month in March-April 1846; although she was lightened, pulled off, and her sailings were resumed, it was probably felt that the stranding had somewhat injured her hull. The *Henry Clay* was purchased by shipbuilders for $13,000; she was rebuilt and sold in 1850 to Spofford, Tileston & Company's revamped Dramatic Line, in which she operated until 1865. The "*Clay*" enjoyed a good reputation as a rebuilt, fast, and commodious sailing packet for twenty years in the strenuous North Atlantic trade and after that was evidently good for several more years in general trade. During the late forties, many transatlantic packets were built that cost in excess of $100,000, which price was, however, very low compared with the cost of the steamers then entering the packet trade, for the wood paddle-wheel British Cunard steamer *Atlantic,* built in 1848, was reported to have cost some $400,000.

Packet Ship Cargoes and Passenger Travel

The transatlantic sailing packets occasionally carried very valuable cargoes. Gold and silver coins, designated "specie," were shipped back and forth across the Western Ocean to remedy inequalities in international trade. On April 25, 1838 (two days after the pioneer steamships *Sirius* and *Great Western* had reached New York), the London Black X sailing packet *Mediator* of 660 tons, built by Westervelt & Roberts, New York, in 1836, arrived at New York with $1,250,000 in specie aboard, and several other sailing packets, at about that time, carried half a million dollars or so. The transatlantic packets in their heyday concentrated on the carrying of first-class passengers both ways. American goods that were marketable in Europe and paid good freight rates, such as cotton, naval stores, flaxseed, and apples (with flour, wheat and grains when the British Corn Laws were not operative), were procurable for cargo eastbound; textiles and manufactured goods salable in the United States were generally procured for the westbound crossing. When "fine freight" was not obtainable in Europe to give the packets good "pay loads" on the westbound crossing, salt or coal was carried at much lower rates of freight, and by the mid-thirties, English rails for the new

American railroads were often stowed in the holds to bring the packet ships down to good load draft.

Emigrants, or steerage passengers, were not wanted on the packet ships during the twenties and thirties and prior to the competition of steam. The 'tween decks space could more "easily, comfortably, and economically" be utilized for cargo than for "human freight." Procurable British manufactured goods gave a revenue of about twenty-five cents per cubic foot of space, and emigrants paid the same rate based on a twenty-dollar fare and eighty cubic feet of space per steerage passenger. The ships carrying emigrants provided nothing for these passengers but a certain amount of space, water, and a small amount of bread and potatoes; the emigrants had to supply all other provisions and had to cook their own food, utilizing facilities located on the upper deck (and not accessible to them in bad weather).

In 1826, the ninth year of operation of the transatlantic packets, the following numbers of arrivals at New York from Liverpool of both packets and regular, or general, traders were recorded, with the passengers—cabin and steerage—carried on the westbound crossing:

	Number of Arrivals during 1826	Cabin Passengers		Steerage Passengers	
		Total Number	Average Number per Ship	Total Number	Average Number per Ship
Packet ships of established lines operating on regular schedules	47	454	9.7	295	6.3
Regular, or general, traders or transients carrying passengers	63	131	1.9	2,032	32.2

The Havre packets, however, from the first brought to New York substantial numbers of emigrants (chiefly German), often a hundred or more per trip.

The steamers, during the forties and fifties, gradually took more and more of the transatlantic cabin passenger travel, particularly westbound, since on the westbound crossing, because of head gales, even the very best—newest, largest, and fastest—of the sailing packets (particularly during the winter months) were likely to experience maintained spells of bad weather and adverse sailing conditions and make long passages. The following record shows the sailing packets in the regular New York transatlantic lines built in 1843 or thereafter that made one or more crossings of seven weeks and over:

Name of Packet	Line	Year Built	Tonnage	Westward Passages in Days		
				Longest	Average	Shortest
LONDON	Red Swallowtail,London	1848	1,145	85	38	23
VICTORIA	Black X, London	1843	860	84	38	24
AMERICAN CONGRESS	Red Swallowtail, London	1849	863	77	36	21
SPLENDID	Whitlock, Havre	1846	642	73	41	21
CHRISTIANA	Red Swallowtail, London	1846	666	70	43	30
ISAAC BELL	Black Ball, Liverpool	1850	1,349	60	36	25
MANHATTAN	Black Ball, Liverpool	1849	1,299	60	35	24
LIVERPOOL	Swallowtail, Liverpool and London	1843	1,077	60	37	20
WILLIAM TELL	Second Line, Havre	1850	1,153	60	36	25
NORTHUMBERLAND	Black X, London	1844	817	60	35	17
CONSTELLATION	Red Star, Liverpool	1849	1,560	59	35	22
CALHOUN	Dramatic, Liverpool	1853	1,749	58	37	22
YORKSHIRE	Black Ball, Liverpool	1843	996	58	29	16
AMERICAN EAGLE	Black X, London	1846	899	57	35	22
PRINCE ALBERT	Red Swallowtail, London	1843	884	57	35	24
MONTEZUMA	Black Ball, Liverpool	1843	924	57	34	27
CONSTITUTION	Blue Swallowtail, Liverpool	1846	1,327	56	32	18

Continued on next page.

Name of Packet	Line	Year Built	Tonnage	Westward Passages in Days		
				Longest	Average	Shortest
ONTARIO II	Blue Swallowtail, Liverpool	1853	1,501	56	41	29
SIR ROBERT PEEL	Red Swallowtail, London	1846	940	56	37	22
ZURICH	Old Line, Havre	1844	817	56	35	21
CONSTANTINE	Blue Swallowtail, Liverpool	1850	1,161	54	39	27
CAROLUS MAGNUS	Whitlock, Havre	1852	1,349	53	34	22
HENRY CLAY	Swallowtail and Dramatic, Liverpool	1845	1,207	53	34	23
YORKTOWN	Red Swallowtail, London	1847	1,150	53	37	22
HAVRE II	Old Line, Havre	1845	870	53	34	20
HELVETIA	Whitlock, Havre	1850	971	53	36	28
GERMANIA	Whitlock, Havre	1850	996	52	38	26
OCEAN QUEEN	Black X, London	1850	1,182	52	33	23
ST. DENIS	Second Line, Havre	1848	959	52	35	25
WEBSTER	Dramatic, Liverpool	1853	1,727	51	35	27
ORIENT	Dramatic, Liverpool	1852	1,560	51	38	20
RHINE	Red Swallowtail, London	1850	1,037	51	37	24
MARGARET EVANS	Black X, London	1846	899	51	33	22
WILLIAM NELSON	Whitlock, Havre	1850	1,039	50	42	38
FIDELIA	Black Ball, Liverpool	1845	895	50	33	21
MERCURY	Second Line, Havre	1851	1,350	49	33	23

Other 49-day passages by sizable packets built after 1843 were reported by the *American Union* of 1,146 tons, built in 1851 (Liverpool Blue Swallowtail Line); the *Gallia* of 1,190 tons, built in 1849 (Havre Whitlock, or Union, Line); the *Waterloo* of 892 tons, built in 1845 (Liverpool Red Star Line).

With 8 recorded sailing packet passages westbound occupying from 78 to 89 days, 58 requiring 60 days and over, 287 occupying seven weeks (49 days) and over, and 30 per cent of all westbound sailing packet passages occupying 40 days or more and only 18½ per cent being made in better than 30 days, it was but natural that the steam packets—with virtual guarantee of westbound crossings equal or superior to the best all-time (16-day) record for sailing vessels—should win the westbound cabin passenger business. It was said that the *Switzerland* of 567 tons (London Red Swallowtail Line) once took 110 days to make the crossing from Portsmouth to New York; although this cannot be verified, a passage for this ship of 82 days is recorded, which is equaled by a crossing of the *Erie* of 451 tons of the Havre Second Line. (The *Erie* required 70 days or more to make each of three of her crossings.) Still longer westward passages were made by the *Victoria* of 860 tons (London Black X Line), which reported a run in 83 or 84 days, the *London* of 1,145 tons (London Red Swallowtail Line) in 85 days, and the *Ashburton* of 1,015 tons (Liverpool Blue Swallowtail Line) in 89 days. The *Ashburton,* with this 89-day passage, seems to hold the authenticated record for a long Western Ocean sailing packet crossing, although regular traders and transients made longer transatlantic passages.

For long years, the sailing packets enjoyed a good share of the cabin passenger business eastbound, but by the late forties, on the homeward run their cabins were practically deserted, and the lines, deprived of quality passenger patronage on the westbound crossing, turned to the emigrant, or steerage, business. Writing of a passage on the *Hottinguer* (993 tons) of the Liverpool New Line in 1845, Mrs. Sarah Maury says that at that early date there was only one passenger besides herself and her young son in the cabin and that she traveled west on the sailing packet because her boy was in poor health and it was felt that "the long sea voyage would be beneficial to him"; but on this crossing, the *Hottinguer* "carried 397 immigrants, including a large number of Irish."

The boom in the Western Ocean emigrant trade occurred at the time that Atlantic travel and trade greatly increased and during the period that the steam packets, following Edward Collins' entry into the field with American wood paddle-wheel steamships of quality and amazingly uniform high speed, proved their superiority over sail in the Atlantic "shuttle" and made the dream of "ten days between Liverpool and New York" come true. Lindsay, the British historian, says that during the period 1815-1854 inclusive 4,116,958 persons (emigrants) left British ports and that of these, 2,446,802 sailed from the mother country between 1846 and 1854 and 1,358,096 between 1850 and 1854. The number of passengers arriving by sea (on all classes of vessels) at ports of the United States per annum for certain years during the period from 1820 to 1854, the maximum record year, was as follows:

Year	Number of Passengers	Year	Number of Passengers
1820	10,311	1845	119,896
1830	24,837	1850	315,334
1840	92,207	1854	460,474

For the thirty years prior to 1846, the average number of passengers annually leaving British ports for America was stated at 55,672. The great increase in the late forties and early fifties was due largely to a period of food shortages in Europe and to political disturbances on the Continent. The maximum influx into the United States was also coincidental and associated with the years of the California Gold Rush, the lure of the West Coast, and the boom of 1849-1854. Passenger and cargo traffic dropped off sharply during the years of depression, panic, and national inharmony that followed the boom and continued through the years of strife and the Civil War (1861-1865). Ferenczi and Willcox, in INTERNATIONAL MIGRATIONS, give the following figures by five-year intervals of the number of passengers arriving in the United States by land and sea during the period 1820-1860 inclusive:

Fiscal Year	Total Passengers	Aliens	European Aliens
1820	10,311	8,385	7,691
1825	12,858	10,199	8,543
1830	24,837	23,322	19,217
1835	48,716	45,374	41,987
1840	92,207	84,066	80,126
1845	119,896	114,371	109,301
1850	315,334	310,004	250,939
1855	230,476	200,877	187,729
1860	179,691	153,640	141,209

The potato famine in Ireland during the mid-forties gave impetus to emigration to the United States, and this calamity abroad proved of benefit to American transatlantic packets and general traders in two ways: It caused a big flow of emigrants westbound and, leading to the repeal of the British Corn Laws, permitted flour, wheat, and grains to be added to eastbound cargoes. In 1848 the *Constitution* (1,327 tons) of the Liverpool New Line arrived at New York carrying 535 steerage passengers, and the *New World* (1,404 tons) of the Liverpool Blue Swallowtail Line brought over 608 emigrants. In 1852, the peak year of the immigration, the *Constellation* (1,560 tons) of the Liverpool Red Star Line reached New York with 914 steerage and 7 cabin passengers, while three packets of the Liverpool Blue Swallowtail Line, in their nine westward crossings made during that year, brought over 5,773 steerage and only 20 cabin passengers. It was said in the late forties that the prime reason for building the later-day transatlantic sailing packets so large was to get space to carry a big number of emigrants and conform with the laws requiring that each steerage passenger must have a certain minimum of space roughly equivalent to eighty cubic feet, or two tons of cargo.

In the late forties and early fifties a transatlantic sailing packet generally carried from ten to thirty first-class passengers, who paid about one hundred fifty dollars for a passage and were accommodated with the captain and officers in the saloon under the poop deck (or cuddy, as it used to be called). In addition to these first-class passengers, who—for those days—traveled well, the transatlantic sailing packet usually carried from two hundred fifty to a thousand emigrants in the 'tween decks, on its westbound voyages, as "paying human freight." These emigrants—men, women, and children—were often crowded outrageously in any between-deck space that could be made available below the weather deck. Conditions, at times, can be better imagined than described, for there were no air ports or ventilation in the living spaces and no cooking or sanitary facilities below deck. In bad weather—frequent in a westbound Atlantic crossing—the hatches had to be battened down, and we are told: "Men, women, and children screamed all night in terror." The emigrants, referred to by contemporaries as "dirty and ignorant," lived on board the packets under conditions but little better than those prevailing in the better class of slave ships. We are told:

It was not compulsory for emigrant ships to carry a doctor, although sometimes a physician was given a free passage in return for looking after the health of those on board; ship-fever, smallpox, and other contagious diseases were common, and it is a wonder that many survived the voyage. Rations were served out once a week in accordance with the allowance instituted by the British Government—just enough to keep starvation away. It was estimated that it cost twenty cents a day to feed each emigrant, and the steerage passage rates were about twenty dollars per person.

* * * *

On the earlier sailing packets the passage rate was excluding food or the use of any equipment or supplies. The emigrants—whether they supplied their own food or not—had to cook or prepare it themselves, and fires for cooking food or heating water were permitted only above deck on stone surfaces prepared for that purpose. Heavy weather meant not only no needed fresh air but also no hot water or cooked food, no sanitation, and the accumulation of filth, with the breeding of disease, below decks.

Some idea of the mortality among the steerage passengers on a transatlantic voyage may be gained from the following table prepared from a news item appearing in the New York HERALD of October 26, 1853, covering the mortality on transatlantic sailing packets and regular traders arriving at the port of New York from September 9 to October 21 inclusive, 1853:

Date of Arrival New York	Name of Packet	From	No. of Passengers	No. of Deaths during Crossing
Sept. 9	ZURICH	Havre	358	2
Sept. 11	LUCY THOMPSON	Liverpool	800	35
Sept. 15	NIAGARA	Liverpool	249	38
Sept. 21	CHARLES SPRAGUE	Bremen	280	45
Sept. 26	ODER	Hamburg	237	14
Sept. 27	WINCHESTER	Liverpool	463	79
Sept. 29	KATE HUNTER	Liverpool	342	1
Sept. 29	RHINE	Havre	566	24
Sept. 30	TALLEYRAND	Hamburg	210	11
Oct. 11	HARVEST QUEEN	Havre	367	5
Oct. 14	MARMION	Liverpool	295	34
Oct. 17	WATERLOO	Liverpool	294	4
Oct. 17	JAMES WRIGHT	Liverpool	430	1
Oct. 20	SIR ROBERT PEEL	London	407	6
Oct. 21	NEW YORK	Liverpool	400	16
Oct. 21	BENJAMIN ADAMS	Liverpool	620	15

Out of 6,318 passengers carried on sixteen sailing packets and regular traders arriving in New York during a period of forty-three days, 330 passengers, or 5¼ per cent, died in transit. The average number of passengers carried per "packet" during this early fall period of 1853 was 395, and the average deaths per crossing 21. The mortality rate on some of the "packets" was very low (in one case only one-quarter of one per cent), but in others it was outrageously high, the rate on the *Winchester* being 17.1 per cent, on the *Charles Sprague* 16.1 per cent, and on the *Niagara* 15.3 per cent.

At times, the transatlantic sailing "packets" lost passengers as well as sailors during heavy weather at sea. Some were swept overboard, which fact resulted in the tightening up of rules that refused permission to the more adventurous of the passengers to appear on deck during stormy periods at sea with high seas running. At times, passengers were seriously injured or even killed by accidents below deck during heavy weather, with deep rolling and pitching. During the winter of 1852-1853, the regular trader *Celestial Empire* made a westbound passage of 60 days and reported the loss of one seaman and ten passengers "due to heavy seas." About the same time, the Webb-built sailing packet *Splendid* (642 tons) of the Union Line, in a crossing from Havre to New York, reported the loss of seven passengers due to heavy westerly gales and high seas, and the McKay-built Zerega packet *Antarctic* (1,115 tons), bound from Liverpool to New York, put into Hampton Roads badly battered and in an unseaworthy condition, with many of the passengers and crew suffering with serious injuries from heavy seas; but this packet also reported "sixty deaths from smallpox."

In the fall of 1853, there was a cholera epidemic. The sailing packet *Washington* arrived in New York with 94 passengers dead and another 62 cases of the disease aboard. During the same autumn, ships arriving from British ports reporting heavy death lists from the epidemic were: *Constellation* (Red Star liner from Liverpool), 100; *American Union* (Blue Swallowtail liner from Liverpool), 80; *William Tapscott,* 65; *Calhoun* (a new Dramatic liner from Liverpool), 54; *Centurion,* 42. The *Corinthian* from Havre had 41 deaths; the *Statesman* from Antwerp, 25; the *Gothenburg* from Hamburg, 25; and the *Delaware* from Bremen, 15 deaths.

Emigrant passengers were certainly not carried with any degree of comfort by the driving transatlantic packets of the forties to sixties and earlier. In the face of known losses due to wind and seas and to faulty and inhuman housing (overpacking, with no sanitation) and disease, it is surprising to find that the packet lines boasted that among emigrants "the birth rate on the packets exceeded the death rate."

In the second part of the fifties and about the time that the U. S. Government—the administration and Congress—doomed the Collins steam packet line, steamships (both screw and paddle) crossing the Atlantic westbound commenced to become seriously interested in the handling of emigrants, and by mid-1857 this steam competition was being seriously felt by the transatlantic sailing packets as well as by wind-propelled general traders and transients. The general, increasing passenger traffic handled by transatlantic steamers per month during the period from January 1856 to June 1857 is reflected in the following statement showing the total number of emigrants, or steerage passengers, landed at Castle Garden, N. Y., and the number that disembarked from sailing vessels and from steamers:

	From Sailing Vessels		From Steamers		Total	
1856	Vessels	Passengers	Vessels	Passengers	Vessels	Passengers
January	7	1,057	None	None	7	1,057
February	20	2,246	None	None	20	2,246
March	44	5,549	1	163	45	5,712
April	34	7,033	None	None	34	7,033
May	55	19,441	2	452	57	19,893
June	64	19,136	1	402	65	19,538
Total	224	54,462	4	1,017	228	55,479
July	56	15,579	2	713	58	16,292
August	70	15,599	3	728	73	16,327
September	58	13,863	2	620	60	14,483
October	59	15,672	3	768	62	16,440
November	69	17,393	5	778	74	18,171
December	16	3,891	3	487	19	4,378
Total	328	81,997	18	4,094	346	86,091
1857						
January	28	5,155	None	None	18	5,155
February	25	3,306	2	185	27	3,491
March	17	2,369	8	1,196	25	3,565
April	67	19,692	6	2,089	73	21,781
May	63	24,802	8	3,046	71	27,848
June	64	20,296	11	3,944	75	24,240
Total	264	75,620	35	10,460	299	86,080

Casualties in the Atlantic Sailing Packet Service
A Splendid Record for Safety in Ocean Travel

The pioneer Black Ball Line, running between New York and Liverpool, was unfortunate in that during its first seven years of operation it suffered four catastrophes, as follows:

Name of Packet	Tonnage	Year Built	Entered Line	Date of Loss	Nature of Catastrophe
ALBION	434	1819	1819	Apr. 22, 1822	Wrecked near Kinsale, Ireland. Of the 54 persons aboard, including 23 cabin and 6 steerage passengers, 46 were lost (27 of them passengers).
LIVERPOOL	496	1822	1822	July 25, 1822	Collided with iceberg during fog when 9 days out on maiden passage. Ship sank in three hours, but all the 36 persons aboard were saved in small boats and landed at St. John, Newfoundland.
AMITY	382	1816	1818	Apr. 24, 1824	Wrecked in heavy fog on Squam Beach, New Jersey, when making for New York Harbor 37 days out from Liverpool. No lives lost.
NESTOR	481	1815	1820	Dec. 25, 1824	Wrecked at 3:00 A.M. Christmas morning by grounding at Fire Island Inlet, Long Island, when approaching New York. No lives lost.

Notwithstanding the two disasters of 1822 and the two of 1824 (all by wrecks—three ashore and one in collision with an iceberg—and none by foundering), the Black Ball Line built up through the years a fine reputation for safety as well as for comfort, speed, and reliable service, and no other vessel of the fleet was lost while operating in the line until the *North America* of 610 tons, built by Brown & Bell, New York, in 1831, was wrecked near Sandy Hook on January 14, 1843, over eighteen years after the *Nestor* was wrecked (December 25, 1824) on the nearby Long Island shore. Loss of life occurred in only one of the four 1822-1824 Black Ball disasters. Later historians, writing of the sailing packet ship era, have said that one out of every six packets was finally wrecked. However, it has also truthfully been said that "only twenty-two out of about six thousand sailing packet transatlantic crossings ended disastrously" (to the ship—not necessarily to the passengers). Albion says: "Between 1824 and 1847, only six passengers out of a possible one hundred thousand or more lost their lives in accidents to the New York [transatlantic] ocean packets—something like a half million 'passenger-miles' per death—and the record of the coastal packets is equally impressive." The relative safety of the American sailing packets, notwithstanding the fact that they were engaged steadily for twelve months in the year in the most severe, turbulent, and hazardous deep-sea trading service in the world, was freely commented upon by contemporary and authoritative observers in the late twenties, thirties, and forties. The London COURIER in 1834 made the following flattering editorial statement, contrasting the American-built and operated packet ships in the New York-Liverpool run with the British Government mail packets:

> We have no recollection of a single American packet ship out of the number which pass continually between New York and Liverpool having foundered at sea, and here have a list of eight of His Majesty's packets having foundered within twelve years. . . . A ship may be run ashore and wrecked from bad management—she may be struck by lightning, by the visitation of Providence—but to sink bodily at sea in deep water, when, like a packet, she is continually returning to port and, therefore, ought always to be in a good state of repair, indicates a fault of construction. We say that . . . it would be better if we cannot build safe vessels ourselves to buy a score or two of the New York packets.

Only one of the large fleet of New York transatlantic sailing packets (all lines) disappeared, or "went missing," at sea from January 1818 to December 1844, a period of a scant twenty-seven years. The unfortunate vessel was the *Crisis* of 336 tons, built by S. Story at

Norwich, Conn., in 1819 and the fastest of the pioneer packets of the New York-London Black X Line. The *Crisis* left London early in January 1826 with "Mr. Netfell and family and nine male passengers aboard." It was a bad winter for westbound Atlantic crossings, and in the spring thirteen packets were "overdue" in New York. The little *Crisis* was spoken on March 18 near ice fields, and as she was never heard of again, it was generally felt that she did not founder in a gale but collided with a berg or sank because of damage inflicted by ice.

The loss of the packets *England* and *United States* in December 1844 is one of the tragic mysteries of the ocean, but because of the heavy gales and mountainous seas that these ships are known to have encountered near mid-December, it is generally felt that both foundered at sea. Comparative particulars of these unfortunate packets are stated herewith:

Name of Packet	Line	Year Built	Tonnage	In Service	Age When Lost in December 1844	Remarks
UNITED STATES	Red Star, Liverpool	1833	650	1833-1844 (11½ yrs.)	11½ yrs.	Left Liverpool Nov. 26, 1844. Capt. Alexander Britton. Only 1 passenger aboard.
ENGLAND	Black Ball, Liverpool	1834	729	1834-1844 (10½ yrs.)	10½ yrs.	Left Liverpool Dec. 1, 1844. Capt. Stephen Bartlett. No passengers aboard.

Both vessels had been built by Smith & Dimon, New York, for the Red Star Line, but in 1835 the *England* had been sold to the rival Black Ball Line and had operated with great success in that line for nine years, making an excellent record (fully equal to that of her contemporary the fast *South America*) for speed.

The Liverpool Blue Swallowtail and the London Red Swallowtail lines, the Liverpool Dramatic and New lines, and the Havre Old and Whitlock packet lines, throughout their history, lost no vessels by foundering or disappearing at sea. The London Black X Line had two of its packets founder at sea, in 1855 and late 1857, respectively, and in early January 1856 the Havre Second Line similarly lost a vessel, there being three transatlantic packets that succumbed to gales and foundered at sea during the years 1855-1857, after a period of about three decades during which no American Western Ocean sailing packet was so lost. The last of the regular New York transatlantic packets that "went missing" was the incomparable *Yorkshire* of the Black Ball Line, which sailed from New York on February 2, 1862, during the Civil War, and was never heard from again. It was generally felt that this fine ship, although approaching nineteen years of age, did not founder as a result of wind and seas, but that she probably went well to the north looking for a favorable strong wind and struck heavy ice during fog or at night. A loss by fire or explosion was suggested, but no trace of the ship's small boats or of wreckage was ever found, and no Confederate cruiser reported her capture; the *Yorkshire* simply disappeared. Following the *Crisis* in 1826 and the *United States* and *England* in 1844, the only other four transatlantic sailing packets that foundered, were abandoned at sea, or "went missing" were the following:

Name of Packet	Line	Year Built	Tonnage	In Service	Age When Lost	Remarks
HENDRIK HUDSON	Black X, London	1841	823	1841-1855 (14 yrs.)	14 yrs.	Foundered at sea in 1855. All on board took to boats and were saved.
ST. DENIS	Second Line, Havre	1848	959	1848-1856 (8 yrs.)	8 yrs.	Bound from New York to Havre. Foundered in gale 180 miles east of Sandy Hook Jan. 6, 1856. Eleven of the officers and crew were saved in a small boat, but 35 others (passengers, crew, and officers) were lost.
NORTHUMBERLAND	Black X, London	1844	817	1844-1857 (13 yrs.)	13½ yrs.	On passage from New York to London. Abandoned at sea in Lat. 47° N., Long. 27° W. on Dec. 4, 1857. All on board were saved.
YORKSHIRE	Black Ball, Liverpool	1843	996	1844-1862 (18 yrs.)	18½ yrs.	Sailed from New York Feb. 2, 1862, during the Civil War, and "went missing."

The American packets did not jog along slowly under double-reefed sails and escape much of the wracking action of the seas in a stiff blow as did the usual general traders and whalers. The packets were driven—as were the clippers that followed them—with all the sail they could be made to carry into the teeth of a gale, for they were passenger, mail, and express freight liners and were expected to make good time no matter what conditions of wind and sea were encountered. Albion says that only three out of a hundred and fifty New York packets (i.e., only two per cent) embracing long careers under the worst possible sailing and sea conditions had foundered at sea by 1848, and he adds: "The toughness of construction was evident on other occasions in the matter of shipwrecks. Some packets ran ashore, apparently as total wrecks, only to be pulled off safely and then to resume their regular trips shortly." The *Sheffield* (578 tons), wrecked on the Sandy Hook Bar in November 1843 after twelve years' transatlantic service, was salvaged and rebuilt, and when fourteen years old she went whaling out of Cold Spring, N. Y., and continued in this trade for fifteen years (1845-1860), when at the age of twenty-nine years she was sold for transient work to Boston owners. The *Queen of the West* (1,160 tons), wrecked off the Wales coast in 1855, also after twelve years of successful packet service, was salvaged, repaired, and used with satisfaction by the British as a general trader for many years.

It was generally felt that the fast New York-Liverpool liner *Garrick* (895 tons) was a wreck and lost to the service when she grounded on Deal Beach in a heavy fog in January 1841. Capt. A. S. Palmer was praised for getting the sixty-seven persons aboard safely ashore through the surf, but the condition and position of the ship were deemed hopeless by the marine fraternity. This was the only serious accident to any vessel of the fleet during Edward K. Collins' management of the line he had inaugurated in 1836, and as the *Garrick* was not fully insured, Collins, notwithstanding the underwriter's first survey report that the ship was bilged and an apparent total loss, determined to save her. After two months of hard and intelligent work, the hold was freed of cargo and filled with empty watertight barrels at low tides and the breaching in the planking plugged, and with steam pumps at work, the *Garrick* was raised and towed to a New York shipyard for repairs. In June 1841, five months after she was "wrecked," the *Garrick*, "as good as new," was back on the Liverpool run, and she continued for twelve more years as one of the fastest and best of the transatlantic packets under the Dramatic Line flag, following which she sailed three years in the Liverpool line of James Foster, Jr., and then, when over twenty years old, went into transient work.

In March 1846, the big Liverpool Blue Swallowtail liner *Henry Clay* (1,207 tons) struck the outer bar at midnight while trying to make New York. She "heaved over and lay between the undertow and outer bar broadside to the beach," which was littered with the wreckage of the New York-New Orleans coastal packet *John Minturn* (398 tons), which had stranded there and been lost, with twenty-eight fatalities, on February 15, 1846—about a month earlier. (The *John Minturn* wreck was the worst catastrophe in the whole history of coastal packet operations in regard to the number of casualties.) The *Henry Clay*, when she struck, had more than three hundred emigrants aboard, and although one of the ship's boats, in trying to make the shore, was overturned and lost and six persons drowned (four passengers and two sailors), Capt. Ezra Nye rigged a breeches buoy with a hogshead and succeeded in getting all the rest of the passengers and all the crew who wanted to go safely ashore. The packet was gotten off the sand in about a month's time in much the same manner as was the *Garrick*, and she soon resumed her transatlantic sailings. Although gutted badly by fire in New York in September 1849, condemned and sold, the *Henry Clay*, after being wrecked in 1846 and burned in 1849, continued in the New York-Liverpool packet service until 1865, when, at twenty years of age, she was transferred to transient trade as the Dramatic-Patriotic Line curtailed operations just previous to discontinuing the service.

The following is a record of the New York transatlantic sailing packets operating on schedule in regular lines that were wrecked on the European coast following the tragic loss of the *Albion* of the Liverpool Black Ball Line, which, as before stated, was wrecked near Kinsale, Ireland, on April 25, 1822, with the loss of forty-six lives:

Name of Packet	Line	Year Built	Tonnage	In Service	Age When Wrecked	Remarks
PARIS	Second Line, Havre	1823	338	1823-1823 (½ yr.)	½ yr.	Wrecked Nov. 1, 1823, near Cherbourg, on second eastbound passage. All were saved from wreck, but a sloop, with mate and crew aboard, was later lost when sailing for Havre.
PANTHEA	Red Star, Liverpool	1821	370	1822-1827 (5 yrs.)	5½ yrs.	Wrecked Jan. 14, 1827, near Holyhead, Wales. No lives were lost, but ship was a total loss.
LEEDS	Red Swallow-tail, London	1823	408	1823-1828 (6 yrs.)	6 yrs.	Grounded in Mersey and injured. Was shifted to London run. Ran aground in Thames Dec. 24, 1828, 23 days from New York, and became a total loss.
ST. ANDREW	Red Star, Liverpool	1834	651	1835-1839 (4 yrs.)	4½ yrs.	A victim of the great Liverpool hurricane of Jan. 9, 1839. Ship was a total loss, but all aboard were saved.
PENN-SYLVANIA	Blue Swal-lowtail, Liverpool	1836	808	1836-1839 (3 yrs.)	3 yrs.	Another victim of the Liverpool hurricane of Jan. 9, 1839. Of 40 persons aboard, 15 were lost.
PRESIDENT	Black X, London	1831	468	1831-1841 (10 yrs.)	10 yrs.	Struck on Goodwin Sands in Feb. 1841. Lightened and pulled off; taken to London, where she was condemned.
VILLE de LYON	Old Line (Union), Havre	1837	791	1837-1845 (8 yrs.)	8 yrs.	Wrecked on Feb. 2, 1844, when only a day out of Havre on way to New York. All aboard were saved, but ship and most of her $300,000 cargo were lost.
ROCHESTER	New Line, Liverpool	1839	714	1843-1847 (4 yrs.)	8 yrs.	Wrecked Apr. 18, 1847, on Blackwater Bank off southeast coast of Ireland. Was bound from Liverpool to New York. All aboard were saved.
STEPHEN WHITNEY	Red Star, Liverpool	1839	868	1840-1847 (7 yrs.)	7½ yrs.	The worst of all packet wrecks. Went ashore near Cape Clear on Irish coast. Only 18 saved; 92 lives lost.
HOTTIN-GUER	Blue Swal-lowtail, Liverpool	1840	993	1843-1850 (8 yrs.)	10 yrs.	Wrecked Jan. 12, 1850, on southeast coast of Ireland. The passengers and most of the crew were saved, but the captain and a few of the men, who stayed aboard to try to save the ship, were lost.
ONEIDA	Second Line, Havre	1841	791	1841-1850 (9 yrs.)	9 yrs.	Wrecked near Guernsey in Jan. 1850.
JOHN R. SKIDDY	Red Star, Liverpool	1845	980	1845-1850 (5 yrs.)	5 yrs.	Wrecked Mar. 30, 1850, on the southeast coast of Ireland, near Wexford.
QUEEN OF THE WEST	Blue Swal-lowtail, Liverpool	1843	1,160	1843-1855 (12 yrs.)	12 yrs.	Wrecked on Langharne Sands, Wales, in 1855. Later salvaged, repaired, and given British registry.
NEPTUNE	Black Ball, Liverpool	1855	1,406	1855-1877 (22 yrs.)	22 yrs.	Wrecked in 1877.

The *Burgundy* (762 tons) of the Havre Old Line, which operated in that service for twelve years (1836-1848), was sold to Norfolk registry in 1848 and shortly thereafter (November 14, 1848) was wrecked on the Goodwin Sands.

The following is a list of the New York transatlantic sailing packets that were wrecked on the American coast when trying to make New York Harbor following the wrecks in 1824 of the early Black Ballers (the *Amity* and the *Nestor*) already mentioned:

Name of Packet	Line	Year Built	Tonnage	In Service	Age When Wrecked	Remarks
LEWIS	Old Line, Havre	1822	412	1823-1827 (4 yrs.)	4½ yrs.	From Havre for New York. Wrecked at Barnegat Inlet, N. J., Mar. 6, 1827. No lives lost.
GEORGE CANNING	Blue Swallowtail, Liverpool	1827	551	1828-1832 (4 yrs.)	4½ yrs.	Left Liverpool Nov. 25, 1831, for New York. Struck a bar off Absecum Beach on night of Jan. 7, 1832. All aboard and most of cargo saved, but ship was a total loss.
DE RHAM	Old Line, Havre	1829	492	1829-1832 (3 yrs.)	3 yrs.	From Havre for New York. Wrceked on Rockaway Beach, Long Island, Mar. 31, 1832. No lives lost.
SOVEREIGN	Black X, London	1830	462	1830-1835 (5 yrs.)	5 yrs.	From London for New York. Wrecked on Squam Beach, N. J., Feb. 17, 1835. One passenger, because of avarice, unnecessarily lost his life.
SAMSON	Red Swallowtail, London	1831	484	1831-1841 (10 yrs.)	10 yrs.	From London for New York. Struck rock off Cape Sable May 20, 1841; was badly damaged, but later beached on Nova Scotia coast, near White Head, and was a total loss, but all aboard were saved.
NORTH AMERICA	Black Ball, Liverpool	1831	610	1831-1843 (12 yrs.)	12 yrs.	From Liverpool to New York on her last voyage as a Black Ball liner. Beached on New Jersey shore, near Sandy Hook, Jan. 14, 1843, in a gale and blinding snowstorm. Ship was a total loss, but all aboard were saved.
SHEFFIELD	Red Star, Liverpool	1831	578	1831-1843 (12 yrs.)	12 yrs.	From Liverpool. While trying to enter New York Harbor on night of Nov. 14, 1843, struck on the Romer of the Sandy Hook bar and was sunk. Ship condemned. No lives lost. Ship later raised and rebuilt as a whaler.
MONTEZUMA	Black Ball, Liverpool	1843	924	1843-1854 (11 yrs.)	11 yrs.	From Liverpool bound to New York. Wrecked on Jones Beach, Long Island, May 18, 1854. Had nearly 500 emigrants aboard, but all were saved.

In the spring and early summer, the North Atlantic is a hazardous trade route because of icebergs and ice floes. The slow-going, extremely careful British Government packets engaged in the English-Canadian service suffered losses from collisions with ice, and the record of the hard-driven American packets—menaced by fog and ice at certain seasons of the year—is a remarkably good and fortunate one when the hazards are properly evaluated. An example of the experiences of British vessels in the North Atlantic can be cited:

The LADY HOBART, a British Government, armed packet with a large complement of men, mails and dispatches, and a passenger list of seven, under the command of Captain Fellowes, sailed from Halifax, Nova Scotia, June 22, 1803, bound for Liverpool. She rammed an iceberg on a dark and foggy night when on the Newfoundland Banks and proceeding at a low rate of speed (about 5 knots per hour) and small spread of canvas and foundered within an hour.

The new Black Ball liner *Liverpool I* (496 tons), as previously mentioned, was lost on July 25, 1822, while on her maiden passage, by collision with an iceberg. Other sailing packet ship losses resulting from collision at sea were as follows:

Name of Packet	Line	Year Built	Tonnage	Packet Service	Collision	Remarks
COLUMBIA I	Red Swallowtail, London	1821	492	1822-1833	1833	Condemned after collision with another vessel in the English Channel. Made port after the accident.
CALEDONIA	Black Ball, Liverpool	1828	647	1828-1836	1836	After collision with another vessel in English Channel and suffering great damage, was sold as a transient.
PALESTINE	Black X, London	1854	1,751	1854-1861	Apr. 15, 1861	Abandoned after collision at sea in the dark of early morning. All on board saved.
HARVEST QUEEN	Black Ball, Liverpool	1854	1,383	1854-1875	Dec. 31, 1875	Rammed and sunk by S.S. ADRIATIC. All aboard the sailing packet were lost.

The *Virginian* (616 tons) of the Liverpool Red Star Line, built in 1832 and in packet service for fifteen years (1832-1847), was more fortunate in a collision with another vessel at sea. Approaching New York from Liverpool, she struck a brig in a fog during an early May morning and sank her, but, while badly damaged, the *Virginian* limped into New York under her own canvas, where repairs were made.

The New York transatlantic packets were fortunate in their losses from fire at sea (the most dreaded of marine disasters), and there was only one of the fleet so destroyed, which is amazing considering the amount of cotton carried across the ocean eastbound. The *Poland* (546 tons) of the New York-Havre Whitlock Line, built in 1832, sailed in that service seven years, but was burned at sea in May 1840, fortunately without loss of life, which would have been heavy if the triangular cotton trader *Clifton* (599 tons; later, during the years 1845-1860, a New York-New Orleans packet) had not fortuitously put in an appearance in the nick of time to rescue the passengers and crew, as the *Poland* did not have small boats aboard to take care of them. The *Poland* sailed from New York for Havre on May 11, 1840, with twenty-four cabin and eleven steerage passengers and a complement of thirty-four officers and men, or sixty-nine persons all told. She carried $38,000 and $70,000 in specie, and the cargo was much less inflammable than the average eastbound packet cargo, as there were only 270 bales of cotton aboard, the balance of the load consisting of 2,700 barrels of flour, 22 barrels of pot-ashes, and 80 casks of quatracitron bark. The cotton was stowed in the lower forward hold, and on May 16, when only five days out, a rainstorm was experienced. Although there was only one flash of lightning, that struck the foremast, ran down into the fore hold, and set the cotton afire. As the cotton was stowed low, the crew could not get at it, so the men battened down the hatches and tried to smother it. The limited boat capacity was filled with passengers and towed astern. Two days later (May 18), the *Clifton* was sighted as smoke was pouring from the packet, and the deck was too hot to walk on. All on board were saved, but the *Poland* was totally destroyed by fire.

The unlucky Havre Old (Union) Line packet *Ville de Lyon* (791 tons) during her eight-year career (1837-1845) was struck twice by lightning, the first time being on the return passage of her maiden voyage in 1837, but, fortunately, she had no cotton (or inflammable cargo) aboard. In 1841 she was again struck by lightning, but at this time (the year following the loss of the *Poland*) no damage was done, as all the Havre liners had been fitted with lightning rods.

The New York coastal sailing packets were equally fortunate in the small number of fires that they experienced at sea, and they had to carry a lot of cotton on their northbound runs. The *Charleston II* (492 tons) of the Bulkley Line was the only coastal packet ship destroyed by fire, and she was burned on September 21, 1849, off Cape Lookout, N. C., when the ship was ten years old and after six years of packet service. The Boston-Liverpool packet *Boston* in 1830 had an experience similar to that of the *Poland*, and, when all had to take to the boats, one woman died of exhaustion before they were rescued. The transatlantic general trader *Solon* was struck by lightning in 1818, but all on board were saved—also by a last-minute rescue.

The following four New York transatlantic packets were burned when in port or in close proximity thereto:

Name of Packet	Line	Year Built	Tonnage	Packet Service	Date of Fire	Remarks
HENRY CLAY	Blue Swallowtail, Liverpool	1845	1,207	1845-1865	Sept. 5, 1849	Burned when lying at her East River pier. Was condemned, bought by shipbuilder, repaired and sold in 1850 to the Dramatic Line.
CONSTITUTION	Blue Swallowtail, Liverpool	1846	1,327	1847-1855	Dec. 5, 1855	Destroyed by fire in the Mersey, having just arrived from New York, while preparing to go to the dock. No lives lost.
ST. NICHOLAS	Second Line, Havre	1841	797	1841-1859	1859	The packet burned at New York following an explosion.
ISAAC WRIGHT	Black Ball, Liverpool	1847	1,161	1847-1859	Dec. 23, 1859	The packet had just pulled out of her dock to sail for New York. Had 200 emigrants aboard; all were saved, with difficulty. Tugs took the blazing hull down the river, and a warship sank her with shot.

Further proof that the earlier New York transatlantic packets were not "wracked to pieces in the trade" is afforded by a survey of their later history. Small and, therefore, relatively chunky Western Ocean packets made ideal whalers, and of the number of Atlantic packets that became too small and too slow for the New York run, there were nine built between 1807 and 1826 (from 294 to 495 tons register) that, after being sold and replaced by larger vessels in the Atlantic "shuttle," gave over 30 years of service each and averaged 41½ years as whalers operating on the Seven Seas. The *Pacific I* (384 tons) served 63 years as a whaler (1818-1882); the *Desdemona* (294 tons), which first sailed as a whaler in 1833, was still registered at New Bedford in 1895, 62 years later, when 72 years old; the *Courier* (381 tons) was in the whaling trade for 41 years (1820-1861), when, during the Civil War, she was sold to the government; and the *Stephania,* built in 1819, after serving 40 years as a whaler (1828-1868), was sound and good enough, at 49 years of age, to be sold to the Australians.

The following is a record of the end of the sailing packets that entered one of the ten regular New York transatlantic lines during the period 1818-1856. Some of these packet ships saw service in more than one transatlantic line out of New York (fifteen ships running under two house flags and one under three different line flags during their Western Ocean packet service), so the number of packet ships mentioned does not refer to 210 different vessels. The record of "End by Destruction during Service in Line" refers, as stated, to vessels lost by the line, and the number of packets "Sold for Whalers" covers only those liners that went directly into whaling upon leaving the transatlantic packet service. Records show that some of the old Western Ocean liners came to a tragic end after they had left the packet service and were operating as regular traders or, more generally, as transients, and that at least thirty-eight regular New York transatlantic and ten New York-southern U.S.A. port coastal packets were employed as whalers at some time following their service as liners.

Name of New York Transatlantic Sailing Packet Line	No. of Packet Ships	End by Destruction during Service in Line					Transferred to Other Packet Service		Sold for Whalers	Sold as Regular Traders and Transients or Worn Out in Service	
		Wrecked	Foun-dered	Burned	Colli-sion	Total Lost	To Regular New York Lines	To Other "Lines"		No.	Remarks
Black Ball, Liverpool	39	7	2	1	2	12	3	1	4	19	3 later became whalers, 2 were wrecked, 1 foundered, and 1 was sold for California.
Blue Swallowtail, Liverpool	25	4	—	2	—	6	11	3	—	5	4 later became whalers, and 2 were wrecked.
Red Star, Liverpool	21	5	1	—	—	6	1	—	—	14	6 later became whalers, 2 were wrecked, 1 burned, and 2 were sold for California.
Dramatic, Liverpool	10	—	—	—	—	—	2	4	—	4	4 of original packets taken over in 1854-1856 by James Foster, Jr.'s Liverpool line; 1 foundered in 1860.
New Line, Liverpool	5	1	—	—	—	1	4	—	—	—	All 4 packets afloat taken over by Liverpool Blue Swallowtail Line in 1849.
Total Liverpool lines	100	17	3	3	2	25	21	8	4	42	13 later became whalers, 6 were wrecked, 2 foundered, and 1 burned.
Red Swallowtail, London	27	2	—	—	1	3	2	—	4	18	4 later became whalers; 1 later wrecked.
Black X, London	23	2	3	—	1	6	3	—	4	10	1 later became a whaler, and 1 was later wrecked.
Total London lines	50	4	3	—	2	9	5	—	8	28	5 later became whalers, and 2 were wrecked.
Old Line (later Union), Havre	25	3	—	—	—	3	1	1	2	18	2 later were wrecked, 1 foundered, 1 burned, and 4 were sold for California.
Second Line, Havre	21	2	1	—	—	3	2	1	2	13	3 later became whalers.
Whitlock (later Union), Havre	14	—	—	1	—	1	—	2	—	11	2 later became whalers, and 1 was burned at sea.
Total Havre lines	60	5	1	1	—	7	3	4	4	42	7 later became whalers, 2 were wrecked, 2 burned, and 1 foundered.
Total of ten New York transatlantic lines	210	26	7	4	4	41	29	12	16	112	25 later became whalers, 10 were wrecked, 3 foundered, and 2 burned.

The American transatlantic packets, commencing with the Black Ball New York-Liverpool liners in 1818, were "renowned all over the world for smart passages and fighting officers," for prompt and reliable service as per published schedules, and for operating fleets of sturdy, "fast and snappy ships." These square-rigged ships sought the passenger trade, the mails, and all express and worth-while freight; they were driven night and day in all kinds of weather and did not take in sail and proceed leisurely at night as did British and other foreign vessels in the first half of the nineteenth century, following the sea tradition of the old East Indiamen. It was said that the "Yankee packets" were never allowed "to loaf or take it easy," and in this respect they were a great advance from the old-style general trader and over the go-as-you-please "Western Ocean wagon."

The earliest American transatlantic packets were evidently too small, too full, and not sufficiently sturdy, well braced and fastened to stand the persistent hard driving of the service. The Yankee packets built from the forties on were sizable, seaworthy, staunch, able, and fast sailers. The records show that they successfully withstood the stresses of sail-carrying and continual driving, and the severe westerlies often encountered on the westbound and homeward crossing had no terrors for them. Many of the earlier packets were taken from the service not, as many writers claim, because "they had been badly strained in the hardest of ocean trades," but merely because they had become too small to handle the business offered and too slow to maintain a schedule approximating that set by the larger, better-modeled, better-sparred and canvased, and, therefore, faster, later-built packets. Robert G. Albion, in SQUARE-RIGGERS ON SCHEDULE, says:

> The packets, with their unusually solid construction, should have been more durable than ordinary vessels, but that was partly offset by the unusual strains to which they were subjected. In heavy seas, the ordinary trader, to whom speed was no particular consideration, would jog along slowly under double-reefed sails and escape much of the wracking action of the sea; so, too, would the whaler. The packet, on the other hand, was driven with all the sail she could safely carry, and perhaps more, into the teeth of the gale, shortening the life of timbers, topmasts and human sinews. At that, the packets remained afloat as long as most ships—but not in the packet service.

The American transatlantic packets, during the latter decades of their use, did remain afloat and in the packet service "as long as most ships." The last five vessels built for the Liverpool Black Ball Line, which entered the service during 1850-1855, averaged a scant 25 years each in the line (maximum 28 years; minimum 21 years), and three of them discontinued as packets after an average of 26½ years of service only because the line ceased operation, following which two became transient traders and the third was sold to Pacific Coast owners. Of the two vessels of the five that were in the line the shortest time, one was sunk by a collision after 21 years' service and the other was wrecked after 22 years of successful work as a packet. When the last of the sailing packet lines, the London Red Swallowtail Line, suspended service, there were eight vessels under the colors that had averaged 31½ years in transatlantic packet service (maximum 37 years; minimum 26 years). Such a record, it would seem, could not be beaten in any ocean trade route of the world, and it speaks well for the sturdy construction of American packet ships built during the forties and fifties. After leaving the transatlantic packet service, these old liners were not junked, for they continued to operate as transients, and at least two of them were sold abroad.

The New York transatlantic sailing packets built prior to 1815 that qualified to be considered as "regular" packets averaged only 330 tons; between 1815-1820, 365 tons; 1820-1830, 444 tons; 1830-1840, 668 tons; 1840-1850, 1,016 tons; and between 1850-1854 inclusive, 1,333 tons. The average length of westbound passages of the packets under 400 tons was about 40 days and from 400 to 700 tons, about 37 days; whereas the average for packets of from 1,000 to 1,400 tons was 34½ days and for those over 1,400 tons, about 33½ days. The average length of the westward transatlantic passages of the packets built during and prior to 1815 was 43 days; 1816-1819 inclusive, 39 days; 1820-1829, 38 days; 1830-1839, 35½ days; and from 1840-1854 inclusive, about 34¾ days.

The record of the American transatlantic sailing packets prior to the successful competition of steam is an impressive one. Property losses of ships and cargoes were relatively small when considered on a ship-mile or ton-mile basis, and the loss in human lives has been well referred to as "so amazingly low as to seem incredible." A packet captain's responsibilities became increasingly great in the late forties, when emigrants began to be carried in quantity, but whereas the record in regard to illness and disease (plague, smallpox epidemics, etc.) among the crowded emigrants is nothing to brag about and at times was very bad, yet the fact remains that the record in regard to physical carrying in safety and the avoiding of fatalities from shipwreck and the elements, fire and marine catastrophes continued outstandingly excellent to the end not only of the sailing packet era (which really ended in the late fifties and before the Civil War) but also of sail. Albion well says, "Altogether the safety record of the packet service was a proud one. It was a tribute to the skill of the captains in avoiding trouble, to their cool resourcefulness on the few occasions when trouble came, and to the tough hulls of their ships, which were able to withstand what might have been disastrous to ships less honestly and soundly built."

The whole country, as well as New York, took the greatest possible pride in its packets and its captains. No matter what the weather was, ships sailed on the day advertised, leaving the piers with sails set and cheered by the multitudes who gathered to see the departure. Tugs were seldom used in leaving or making harbor until after the early thirties, and long afterwards captains took pride in dispensing with their services and in sailing the ships right up to the loading and unloading docks, or berths. The British press also, long before the American clippers excited universal admiration, was generous in its praise of the New York packets for their excellent construction as well as for the regularity of their service. Until well into the fifties and practically up to the time of the American Civil War, the "Yankee packet" was "Lord of the Western Ocean." These transatlantic sailing packets, which were full-rigged three-masted ships, outstripped all foreign competitors and even received the attention of the British Parliament, for a committee of the House of Commons reported that American ships sailing between New York and London had the preference over English ships as to both freight and insurance. Writing from New York in 1842, Dickens, who had been a critical passenger on the Cunard steamer *Britannia* on a westbound crossing and emphatically preferred, at the time, sail to steam, said: "Below here by the waterside, where the bowsprits of ships stretch across the footway and almost thrust themselves into the windows, lie the noble American vessels which have made their packet service the finest in the world."

Competition in Transatlantic Sailing Packet Service of So-called "Irregular Lines"

Several immigrant transatlantic services were advertised as "lines," but they did not measure up to the criteria of packet line service and were merely sailings in succession of regular traders between, generally, Liverpool and New York. As early as 1837, the "Robinson Line" of this type was advertised, and around mid-century, when the immigrant business was booming, pseudo-lines of this nature were operated by Williams & Guion, Taylor and Rich, Taylor & Merrill, Frost & Hicks, Augustus Zerega, etc.

The Red Cross Line and the DREADNOUGHT
"The Wild Boat of the Atlantic"

There were several so-called sailing packet lines operating from East Coast ports across the Atlantic or in other directions for short or irregular periods that failed to conform with the basic requirements of scheduled, regular service and that, therefore, cannot be considered as packet lines. One of the most prominent of these pseudo-packet lines was known as David Ogden's "Red Cross Line." It achieved a great measure of eminence and publicity primarily because of the performance of one ship, the *Dreadnought,* whose exploits, which fired the popular imagination during the period 1854-1862, were inseparably connected with those of her newsworthy skipper, Capt. Samuel Samuels. The "line," operating between New York and Liverpool and owned by David Ogden, (Governor) E. D. Morgan, Francis B. Cutting, et al., did not have even a regular, generally accepted name, not to mention regular sailings. It was known at times as the "Saints Line," generally in Liverpool as the "Red Cross Line," and more often in the United States as the "St. George's Cross Line," due to the *Dreadnought's* carrying conspicuously on her fore lower topsail a blood red St. George's cross (just as the Black Ball liners were distinguished by a large black circle and the Train Boston packets by a large black "T" carried in the same place and manner). Whereas it was a New York line and originally planned in the early forties, it is unique in the respect that its ships were built not in New York but on the Merrimac in Massachusetts. The "line's" first vessel, built ten years before the famous *Dreadnought,* was the *St. George,* which was constructed in 1843 by William Pickett, of Newburyport, Mass., with Donald McKay as master shipwright and partner. This ship was followed a year later by the *St. Patrick.* The dimensions and recorded owners of these two "Saints Line" New York transatlantic sailing packets are as follows:

Name of Vessel	Tonnage	Dimensions in Feet and Inches			Date of Registry	Master	Owners
		Length	Beam	Depth			
ST. GEORGE	845	149-3	35-5	17-8½	Oct. 10, 1843	Watson Ferris	Watson Ferris, Fred L. Talcott, Floyd F. Ferris, Andrew Foster—all of New York
ST. PATRICK	896	160	35	17-6	Nov. 15, 1844	Benjamin Seymour	Andrew Foster, Daniel Girard, D. L. Lawrence, David Ogden—all of New York

The early ships of the "Saints," or "Red Cross," line were as unlucky and as short-lived as were the larger "clipper packets" that followed them. The *St. George* was burned in the English Channel and the *St. Patrick* wrecked on the New Jersey coast; the *Andrew Foster,* which joined the line, also had a short life, being run into and sunk in the Irish Channel.

In the winter of 1850-1851, David G. Ogden, becoming prominent in the management of the ships, influenced his associates to introduce clippers into the transatlantic "ferry" service, and an order was given Currier & Townsend, of Newburyport, Mass., to build for the line its pioneer clipper packet—the *Racer.* It is significant that David G. Ogden and his friends built four "clipper packets" and that each one of the first three was less of a clipper than the one preceding it. The most famous of the quartet was the third one, the *Dreadnought,* which was of such model fullness and sturdy rig that she was in reality no clipper at all, but a well-designed and built, fast sailing packet extraordinarily well adapted to the requirements of the Western Ocean "shuttle" trade. The Ogden, or "Red Cross," fleet of "clipper packet" ships consisted of the following vessels—all built by Currier & Townsend, Newburyport, Mass.:

Name of Vessel	Launched	Most Important Master	Recorded Owners	Lost
RACER (1,669 tons)	Feb. 8, 1851	Henry W. Steele	Ogdens, Gebhards, Foster, Dougherty, Lawrence, Lord, Clark, Eliot—all of New York.	Wrecked May 6, 1856, on coast of Ireland, when about five years old.
HIGHFLYER (1,195 tons)	Jan. 13, 1853	Gordon B. Waterman	Ogdens, Morgan, Cutting, Girard, Lord, Gebhards, Smith—all of New York; and Waterman, of Hartford, Conn.	Went missing in late 1855, when less than three years old. Rumored that ship was attacked, beached, plundered, and burned by Chinese pirates off Formosa and all on board murdered.
DREADNOUGHT (1,414 tons)	Oct. 6, 1853	Samuel Samuels	Ogden, Morgan, Cutting, Girard, Lord, Gebhards, Richardson—all of New York; and Clark, of Hartford, Conn.	Drifted ashore and wrecked off Tierra del Fuego July 4, 1869, when about 15¾ years old.
DRIVER (1,594½ tons)	Aug. 1854	Nicholas Holbertson	Ogdens, Morgan, Lawrence, Stuart, Secors, Holbertson—all of New York; Peck, of Hartford, Conn.; and Currier & Townsend, of Newburyport, Mass.	Went missing about February 1856 with her passengers and crew ot 372 all told.
VICTORY (1,314 tons)	Feb. 1857	James Ainsworth	Ogdens, Ainsworth, Holbertson, Secors—all of New York; and Clark, Bull, and Drake, of Hartford, Conn.	No available record. Should not be confused with the 670-ton clipper *Victory* built at Newburyport in 1851 for B. A. Gould et al., Boston, which was lost near Cape Henry Feb. 9, 1861.

The Ogden "Saints," "Red Cross," or "St. George's" transatlantic line was practically nonexistent in the early fifties, during the California clipper ship boom. The *Dreadnought* was built specifically for Captain Samuels to command, and he passed on all the essentials of her design, supervised her construction, and had her modeled, sparred, and rigged for the Western Ocean packet trade. When her keel was laid, it was said that she was to sail in the "Racehorse Line" between New York and California, but the loss of six of the owners' ships in succession and the high freight rates in the transatlantic trade caused the *Dreadnought,* through Captain Samuels' ardent persuasion, to be used in the New York-Liverpool run from the start. In this service, for which she was peculiarly well adapted, she—with her skipper—achieved an outstanding record and a far better one than she would have made in the California trade, for the *Dreadnought* was a Western Ocean packet and not a Cape Horn and Pacific Ocean trade clipper.

The *Racer, Highflyer,* and *Driver* proved to be unfortunate vessels and came rather quickly to tragic ends—as did most of Ogden's ships. Within a space of about half a year, three of Ogden's much-publicized clipper packets met disaster. On October 25, 1855, the *Highflyer* (Capt. Gordon B. Waterman) sailed from San Francisco for Hong Kong and was never heard of again. In February 1856, the *Driver,* operating in the "Red Cross" transatlantic service, "went missing," with all of her passengers and crew, numbering 372, lost. But little is really known regarding the disappearance of the *Driver,* and one historian says that the ship sailed from Liverpool for New York in February 1856 with a total of "six hundred and thirty souls aboard" and that no word was heard of the ship after she got clear of the British coast and no piece of wreckage was ever found. Some three months later, on May 6, 1856, the *Racer,* also engaged in transatlantic service, was lost on the Arklow Bank near Wicklow on the east coat of Ireland. The *Racer* had been in both the British-Chinese tea and New York-California Cape Horn trades, but she met her end in the transatlantic run, for which she was built. Within a few months' time, the *Dreadnought* was the only survivor of the Ogden fleet of "clipper packets."

The run of bad luck of the Ogden, or "Red Cross," line of sailing packets commenced prior to the loss of the trio of clipper packet ships, when the pioneer ship *St. George* was burned in the chops of the English Channel; this was followed by the wreck of the *St. Patrick,* the second ship of the fleet, on the New Jersey coast. Following the loss of the *Racer* on the Blackwater Bank in the Irish Channel, the "Red Cross" packet ship *Andrew Foster* was sunk by collision in the Irish Channel, and this vessel was the sixth of the line to be lost within a period of a few years—a seemingly unparaleled, concentrated record for catastrophes and "unprecedented calamities" suffered by any one line, firm, partnership, or group of owners.

In 1857 the medium clipper packet ship *Victory* was put in transatlantic service by the line, and this vessel, commanded by Capt. James Ainsworth (a part owner), was described as "a fast transatlantic type of packet with a half-clipper model and sturdy rig." But little is known of her history and sailing performance, although it is said that she was "a good carrier, a very seaworthy ship, a reliable packet, and a pretty fair sailer." The *Dreadnought,* however, was such an outstanding, successful, and well-advertised packet that she outshone at all times any running mate, and it was said that this vessel virtually carried on alone in the North Atlantic trade, as a general trader and as a sort of one-ship line, until her arrival in New York on February 26, 1864, after a disastrous trip under the command of Captain Lytle. The *Dreadnought's* fame on the North Atlantic, however, ended in 1862, when on a westbound passage the ship experienced unusually heavy gales and seas and lost her rudder. (Captain Samuels broke his leg and was so seriously injured that he had to retire from the sea and was confined to his bed ashore for nearly a year.)

None of these Ogden, or "Red Cross," clipper packets, designed for the North Atlantic trade, made fast westbound passages around Cape Horn to California. The *Racer* (Capt. W. H. Steele) made only one such run, clearing New York June 5 and arriving at San Francisco October 19, 1852; this would make a 136-day passage, but it would seem that her start was delayed two days, as she was anchored off New York on June 7. The passage was reported as "128 days from Sandy Hook to the Golden Gate," with the ship "within 200 miles of her destination for 8 days." On one day of this voyage, the *Racer* is credited with covering 394 nautical miles (an average speed of 16.4 knots per hour)—a run beaten on this Cape Horn route by only the *Invincible* (400 miles), *Flying Cloud* (402 miles), and *Great Republic* (413 miles). The *Highflyer,* which sailed well in the North Atlantic "ferry," made two Cape Horn passages from New York to San Francisco. The first, in 1853 (April 7-September 3), was a slow run of 149 days via Rio de Janeiro, which was reported as 138 sailing days, but it would seem that the ship stayed at Rio only two full days for repairs; the second, in 1855 (May 17-October 8), was another slow run of 144 days. Not one of these Red Cross transatlantic packet clippers (including the *Dreadnought*) made a passage in good time around Cape Horn.

The *Racer* was an expensive vessel, costing $120,000, or over $70 per ton. She had a flat floor, with only 10 inches of deadrise, and three complete decks. She was unusually well equipped for carrying both first-class and steerage passengers in the North Atlantic trade. The ship was moderately sparred for a clipper and spread 8,152 yards of canvas. On her first voyage, she left New York on August 20, 1851, with 80 passengers and had a rather long passage to Liverpool; returning, she reached New York on November 27 with 769 passengers (mostly steerage), after a crossing of 33 days. On her second transatlantic voyage, she left New York on January 10, 1852, experienced strong favorable winds, and made a fast run of 14 days to Liverpool. Captain Steele reported, "We went from land to land in 12 days, but were delayed in the channel ten hours by fog." After a westbound passage of 28 days, carrying 785 passengers, the *Racer* was put in the California trade. Continuing westward around the world, the ship crossed the Pacific to Shanghai, where the pilot ran her ashore on the river bank, and she had to be put in dry dock for repairs. Loaded with tea, the *Racer* cleared Shanghai for London June 11, 1853, and according to British records had a long passage down the China Sea, beating against a strong monsoon and reaching Anjer

August 31, 81 days from Shanghai. Unfavorable weather was experienced in the Indian Ocean, and the ship was off the Scilly Islands on December 2, 93 days from Anjer. Light head winds were encountered in the English Channel, and the *Racer* was at Deal December 8, but her draft prevented her from getting to the unloading dock in London until December 12, 1853—184 days out of Shanghai. Notwithstanding this long passage, the conditions affecting the performance were evidently properly weighed; for the ship, it is said, "had established her reputation in England as a fast sailer, and her agents were not long in negotiating one of the heaviest charters ever recorded in Europe up to that time." The charter price reported was £10,000 for a passage from London to Sydney and £8,000 for the return from Calcutta to London. With Captain Ainsworth in command, the *Racer* left London April 12, 1854, and Portsmouth two days later and reached Sydney July 29 after a passage reported as 106 days. Continuing, the ship ran from Sydney to Calcutta in 69 days and, after a passage of 101 days from Calcutta, arrived at London May 15, 1855.

The *Racer,* upon her return to England, was again placed in the transatlantic packet trade. Sailing from Liverpool for New York on May 5, 1856, she struck on the Arklow Bank near Wicklow on the east coast of Ireland the next night, and it was soon evident that there was no chance of getting her off, as part of the bottom was stove in and one side of the ship was soon under water. The passengers and crew were all removed and returned to Liverpool without any casualties, but when the owners of the vessel attempted to salvage the ship and cargo, they had to fight the people of the neighborhood, who had taken possession of the ship, and drive them off by firearms. At the time of the loss, the *Racer* was five and a quarter years old and was valued at $90,000, or $54 per ton; the depreciation had been figured at $5,700 per year, or $475 per month.

The *Highflyer,* also built for the transatlantic trade, was sent out to California promptly upon completion. After a slow run to San Francisco, she went to Hong Kong in 54 days and from Whampoa to New York in the fast time of 90 days. Following her arrival in New York from the Orient, the ship made two round voyages in the Liverpool "Red Cross Line" trade; on the first, she was 24 days on the outward trip and 31 days on the return, while her second westbound passage was made in the good time of 21 days. The *Highflyer* then made another slow run around the Horn to San Francisco, following which she sailed, as before stated, to her doom. The end of the *Highflyer* was shrouded in mystery, but all that is really known of her last days is that she sailed from San Francisco October 25, 1855, under the command of Capt. Gordon B. Waterman and was never heard of again. It was generally reported and believed that the ship, when practically becalmed off Formosa, had been surprised and captured by Chinese pirates, all the crew and the few passengers who were aboard murdered, and the vessel beached, plundered, and burned. A warship sent in search of the *Highflyer* found the wreck of a vessel that had been stranded and destroyed by fire, but nothing to make any identification possible was found. Although "a spyglass believed to have been the property of Capt. Waterman was discovered in the debris," this could not be definitely proven as belonging to the *Highflyer* or her captain, and measurement of the charred remains of the ship was not possible.

The *Dreadnought* has been classed by all marine historians as a clipper, but actually, if rated according to California, China, or Australia trade standards, she was neither an "out-and-out" clipper nor a medium clipper; moreover, she was not a clipper to anywhere near the degree of the McKay-built "clipper packet" *Staffordshire* or even of the *Chariot of Fame* and *Star of Empire* constructed for the Train "White Diamond" Boston-Liverpool line. The *Dreadnought* was designed and built solely for the North Atlantic packet trade and in this service, month in and month out, was a better and faster ship for her size than any real clipper ever built. Cutler says: "The *Dreadnought* was regarded as a clipper, although her claim to this classification appears to be based largely on her heavy rig and the qualifications of her commander, Capt. Samuel Samuels, rather than her lines. In respect to hull, she was more akin to the sharp-built packets of the day rather than to the clippers." The *Dread-*

nought has been described by authorities as the "fastest of all transatlantic packets." She is generally referred to as a "clipper," but she was too full and not sharp-lined enough for a clipper model; neither was she loftily sparred nor overcanvased. Her large cargo capacity for her dimensions (generally stated as 2,000 tons, whereas her registered tonnage was 1,413 tons old measurement and 1,227 tons new measurement) is proof that the hull was no sharp-lined model, and the way the ship carried canvas in the tough North Atlantic trade is testimony that she had an unusually powerful, seaworthy, and substantial model and that she had been expertly sparred and rigged. Howe and Matthews write: "While not of a sharp model, she had good lines. She was very carefully built of the best materials and in hull, spars, and rigging could not have been made stronger, and she was always well kept up."

The *Dreadnought* was built to operate in the "Red Cross Line" of the New York-Liverpool packets. She was laid down especially for Captain Samuels to command, and the captain superintended the ship's construction from the time that the keel was laid. He said of the *Dreadnought:* "She was built for hard usage and to make a reputation for herself and me, and I intended that she should do her duty or that we should both sink." The new transatlantic packet was described and classified by her builders, command, and owners as an intermediate, or compromise, ship and as a powerful, well-modeled, and unusually strong and buoyant vessel designed and built "to make money as well as show speed" and to carry both a "pay load" and "a heavy press of sail in the strongest wind" in the North Atlantic trade. It was written that the Newburyport shipbuilders Currier and Townsend, on the Merrimac River, gave Donald McKay (then located at East Boston) "something to think about and profit from when, on October 6, 1853, they launched the fast and sturdy semi-clipper packet *Dreadnought,* designed to make money as well as to win notoriety." The vessel when normally loaded, we are told, "had a draft of 22 ft. and carried a main yard 79 ft. long, or twice the dimensions of her beam." The *Dreadnought* was primarily an emigrant carrier (westbound), as were all the transatlantic sailing packets, but it was said that "she carried cargo and passengers equally well" and was "very fast when she got any wind." It has been authoritatively stated that, during the first full nine years of her steady operation in the North Atlantic packet trade, "the least sail she had ever carried at sea was double-reefed topsails, and she had never been hove to." The *Dreadnought,* while Captain Samuels commanded her, was the acknowledged "Champion of the Atlantic Ocean." Howe and Matthews, historians of the clipper and post-clipper ships, have written of her: "It is safe to say that she had greater renown than any other merchant ship ever built, and tales of her performances have often appeared in song and story"—and sailors' chanteys.

Captain Samuels, in FROM THE FORECASTLE TO THE CABIN (written in 1886), says of the *Dreadnought:*

> She was what might be termed a semi-clipper and possessed the merit of being able to bear driving as long as her sails and spars would stand. She was never passed in anything over a four-knot breeze. By the sailors she was nicknamed "The Wild Boat of the Atlantic," while others called her the "Flying Dutchman." Twice she carried the latest news to Europe, slipping in between the steamers. There are merchants still doing business in New York who shipped goods by us which we guaranteed to deliver within a certain time or forfeit freight charges. For this guarantee we commanded freight rates midway between those of the steamers and those of the sailing packets. The ship was a favorite among the travelling public. Her cabin accommodations were usually secured a season in advance.

Captain Samuels also wrote, "Many a time I have been told that the crews of other vessels, lying hove to, could see our keel as we jumped from sea to sea under every rag we could carry." Captain Samuels was a driver by day and the most persistent driver at night ever seen on the Western Ocean. In his memoirs we read: "Night is the time to try the nerve and make quick passages. The best ship-masters are those which are most on deck after dark and rely upon nobody but themselves to carry canvas. The expert sailor knows exactly how long his sails and spars will stand the strain, the lubber does not and therefore is apt to lose both." The *Dreadnought* possessed the merit of being able to bear driving as long as her sails and spars would stand, and when one considers the fickleness of the elements and the prevalence of strong westerly winds in the North Atlantic, the rapidity and regularity of the *Dreadnought's* passages are worthy of special comment. The *Dreadnought* carried the old-fashioned single topsails, which in themselves "held a whole gale of wind" and required a whole watch to reef each one. It was the boast of Captain Samuels that, in all his years of driving the *Dreadnought* on the turbulent North Atlantic, he never once "lay to" or was "hove-to" (i.e., pointed into the wind to stop and ease her) when the wind and sea were very severe. Whatever the weather and the ocean may have been, Captain Samuels claims that he kept canvas on the *Dreadnought* and persistently forced her all that her hull, spars, sails and rigging would stand, and until her rudder was carried away in 1862 she never once failed him. Albion, in SQUARE-RIGGERS ON SCHEDULE, refers to Captain Samuels' "exceptional speed record" in the *Dreadnought* and acknowledges that "clipper packet," or rather "clipper regular trader," as "faster than any of the regular packets." Basil Lubbock, the English marine historian, says that the *Dreadnought* was "a sailing ship which has been more talked about and sung about than perhaps any other in the history of man." Winthrop L. Marvin, in THE AMERICAN MERCHANT MARINE, refers to the *Dreadnought* as "the queen of the packet ships" and "the champion of the Atlantic Ocean."

On December 15, 1853, the *Dreadnought* sailed from New York for Liverpool on her first transatlantic voyage and completed the passage in 24 days, carrying 1,560 tons deadweight. Her cargo consisted of 3,827 barrels of flour, 24,150 bushels of wheat, 12,750 bushels of corn, 304 bales of cotton, 198 barrels of potash, 150 boxes of bacon, and 5,600 staves. The homeward, or westbound ("uphill" for sailing craft), passage of this maiden voyage, made in February 1854, was a remarkable run (19 days) considering the severe weather, which caused all other vessels—steam as well as sail—crossing at the time to make long passages. This excellent sailing performance, both ways (43 days at sea, with a westbound passage of only 19 days), on the initial voyage of the *Dreadnought* gave her a good reputation from the start. Writing of it, Captain Samuels said:

> Sandy Hook bar was crossed with the then crack packet-ship *Washington,* Capt. Page. We landed in Liverpool, and took in a cargo and two hundred emigrants, and met her off the north-west lightship bound in as we were running out. On our way home we crossed the bar the day after the steamer *Canada* sailed for Boston, and when the news of her arrival reached New York, we were reported off the Highlands.

This auspicious commencement is typical of the sailing performances of the *Dreadnought* during the pre-Civil War years, when steam was driving sail from the North Atlantic. The *Dreadnought* completed her first round voyage in 58 days, with only 43 days spent at sea, and, it is said, "cleared a profit of $40,000." On her second voyage she had a run east in 18 days and made a return westward passage in 26 days, completing her second round voyage in 44 days' sailing and making a total of only 87 days at sea to complete two consecutive round-trip crossings of the Atlantic. After this, Captain Samuels, with the approval of the owners, guaranteed to make deliveries of freight within a specified time or forfeit freight charges and, by so doing, obtained for the vessel freight rates midway between the rates charged by the steamers and the usual sailing packet rates then in effect.

The complete record of the thirty-one round voyages made by the *Dreadnought* as a "Red Cross" packet, or regular trader, between New York and Liverpool during the period of her transatlantic service (December 6, 1853, to February 26, 1864) are, unfortunately, not available, but data covering twenty eastbound passages show an average of exactly 19 days, and twenty westbound passages against the "brave west winds" (excluding two when she put into Fayal) averaged 26½ days—which is a record. Only five of these homeward runs were passages of 30 days or over, and the shortest was the 19-day run made in February 1854 in completion of the ship's maiden voyage "through bad weather, which severely handicapped her rivals." Three years later (February 1857), a very good run of 21 days was made from Liverpool to New York, and the passage from land to land was reported as only 15 days. Nine eastward crossings were reported made by the *Dreadnought* in 16 days or under, and Captain Samuels said that six of these were consecutive voyages, "including one run of 14 days and one of 15 days." The longest was a passage of 30 days, made in light airs, in August 1854. Another very fast round voyage of the *Dreadnought* was made in the fall of 1861. She sailed from New York on September 16 and returned on November 14, completing a round voyage in 59 days gross (reported as 58 days; outward 21 days, at Liverpool 15 days, homeward 22 days). This equaled the performance on her maiden voyage made eight years previously, but the 1861 voyage was hailed by the press as "a record."

THE MONTHLY NAUTICAL MAGAZINE of March 1855, published by Griffiths & Bates, New York, and edited by John W. Griffiths, naval architect and marine authority, said:

> The semi-clipper ship *Dreadnought*, commanded by Capt. S. Samuels, of New York, left New York on her first voyage December 15, 1853, and has since then completed 8 passages, arriving here on the 28th January, 1855. From her first to her last passage, 249 days have been spent in port and 184½ at sea. Four eastern passages have consumed 86½ days and four western passages 98 days. Average time of eastern passages, 21 days and 15 hours; average time of western passages, 24 days and 12 hours, from dock to dock.

The lifetime record of the *Yorkshire* (1844-1862), "the fastest Western Ocean packet," gives an average on the westward crossings of 29 days. Donald McKay's clipper packet *New World* had an average of 31 days; the famous packet *Independence* averaged 32 days for thirteen years in the Liverpool Blue Swallowtail Line, followed by an average of 34 days for five years in the London Red Swallowtail Line; and the fast *Garrick* of the Dramatic Line averaged 32 days; while the *Amazon* of the London Black X Line, the largest of all the regular transatlantic packets (1,771 tons), was credited with an average length of westward crossings from Portsmouth to New York of 28 days, but her best run occupied 24 days and she did practically all her fast sailing in the first few years of her career.

Abstract logs are available for three very fast eastward crossings of the *Dreadnought*. THE MONTHLY NAUTICAL MAGAZINE, New York, issue of March 1855, printed in detail the official abstract log of the passage from the time of sailing from New York on November 20 to the arrival at Liverpool on December 4, 1854. The time of the crossing from Sandy Hook (6:00 P.M., November 20) to Point Lynas (where the vessel, with pilot aboard, was detained 8 hours due to low water over the bar) was 13 days 11 hours 15 minutes; the packet arrived at Point Lynas at noon on December 4 and, after having been delayed 8 hours for sufficient water to permit of entering the river, was anchored in the Mersey off Liverpool at 10:00 P.M. of that day. Captain Samuels gives the distance sailed as 3,071 miles and "average speed for the passage 9½ miles per hour."

On an eastbound passage that started at New York on January 24 and terminated at Liverpool on February 8, 1856, Captain Samuels' published log gives the distance covered as 3,116 miles and says that the *Dreadnought* was hove to off Point Lynas, waiting for pilot, tide, and daylight, when 13 days 19¾ hours out from Sandy Hook. The packet had covered 1,132 miles during the first four days, averaging, it was reported, "11.8 knots per hour," but, we are told, "on the fifth day made little progress, as we were forced backward 90 miles by a violent [easterly] gale." The Liverpool CHRONICLE of February 9, 1856, under the caption "Arrival of the *Dreadnought*," said: "The clipper *Dreadnought*, Capt. Samuels, arrived here this afternoon [February 8] from New York after a rapid passage of fourteen days and eight hours."

In 1859, two fast passages of the *Dreadnought*, one with an arrival at Liverpool on March 12 and the other on July 2, have been badly mixed up by marine historical writers since the turn of the century. The abstract log of an 1859 eastbound passage of the packet, which was published, covered the voyage that originated in New York on February 27. Captain Samuels reported that 13 days and 8 hours after leaving Sandy Hook (at 3:00 P.M.) his ship was "abreast the Northwest Lightship at Liverpool," and he affirmed that "one hour later the *Dreadnought* was anchored in the Mersey on March 12 at noon"; the sea distance traversed is given as 3,018 miles and the best day's runs as 313 and 308 miles.

During the year 1859 (the sixth of the *Dreadnought's* career and the most eventful in the ship's history) occurred what has recently become her much-debated and historic record transatlantic eastward passage of June 17-July 2 and her no less famous mutiny in August. It is of importance to note that doubts as to the correctness and authenticity of Captain Samuels' oft-repeated claims of a record run of the *Dreadnought,* land to land, in 1859 have been advanced only since the death of Captain Samuels in 1908 at the age of eighty-five. Until then, even Samuels' rivals and the builders, owners, and command of clippers had accepted their validity. The claimed sailing record of the *Dreadnought* is a run of 9 days and 17 hours from Sandy Hook to the pilot boat off Queenstown Harbor, to which Captain Samuels handed over the vessel's special mail. Continuing toward Liverpool, she encountered very light head winds off the Irish coast and in the Irish Channel, but notwithstanding most unusually adverse sailing conditions, she made an excellent run from New York to Liverpool of some 14 days.

A marine authority, referring to the *Dreadnought* as "the most famous American transatlantic sailing packet," mentions the "record run of thirteen days and eight hours from New York to Liverpool" in early 1859 and adds that later she "ran from Sandy Hook to Queenstown, a distance of 2,760 miles, in 9 days and 17 hours, a record never equaled either before or since." Captain Samuels, commenting on this fast crossing, said, "She was on the rim of a cyclone most of the time." Official sources in a position to know confirmed the fact that the *Dreadnought* had a series of westerly gales to help her all the way to Queenstown, and the packet's model, build, and rig let her take full advantage of them.

A passage of the *Dreadnought* in mid-1859 of 9 days 17 hours from Sandy Hook to Cape Clear was recorded for many long years—and for a long time following Captain Samuels' death—as the ship's best eastward run across the Atlantic, land to land. This passage was stated generally in tables of fast transatlantic crossings and was quoted in encyclopedias and by authorities, including contemporaries of unquestioned reliability. Following the first decade of the twentieth century, this run commenced to be "doubted," and it has been subjected to relatively modern history "debunkers," being pronounced mythical by several writers. The *Dreadnought* cleared the New York customhouse on June 16, 1859, but unfortunately the actual date of her sailing was not published. It was said that the ship really commenced her sea passage on the afternoon of the day following her clearance (June 17), which was not unusual, and arrived off Cape Clear on June 27 after a passage of 9 days 17 hours from Sandy Hook. The *Dreadnought,* delayed by calms, adverse light airs, and fog, arrived at Liverpool on July 2—less than 15 days from New York, dock to dock. The ILLUSTRATED LONDON NEWS of July 9, 1859, in its shipping news, said: "The packet ship *Dreadnought,* Captain Samuels, famed for her rapid passages across the Atlantic, arrived off Cape Clear on the 27th ultimo, in nine days from New York." It is evident that the ship was in the neighborhood of Cape Clear in about ten days or somewhat less from Sandy Hook and disembarked mail and gave tangible evidence of her presence there that informed the British press of her sailing performance. This checks the claim of 9 days 17 hours, which would stand as a run of "nine days from New York" according to universal marine custom at that time. The ILLUSTRATED LONDON NEWS was an authoritative journal that featured fast passages of vessels; its statements were always accepted as accurate. Moreover, no British journal would ever be guilty of giving credit to an American ship for a quick run or a record passage unless the performance was checked and proved to the satisfaction of critically minded editors.

On April 2, 1908, about half a century after the passage in question was made, Captain Samuels, writing a letter from his home at 194 Clinton Street, Brooklyn, to John H. Morrison, author of HISTORY OF NEW YORK SHIPYARDS, in regard to the record land-to-land crossing of the *Dreadnought* and trusting to his memory, confused the dates of the June-July and February-March eastward passages, which is not surprising for a man eighty-five years of age with no logbooks at hand for reference. However, he did definitely affirm regarding the record voyage of the *Dreadnought:* "We were off Queenstown at the end of nine days, seventeen hours, when we sent our mails ashore by a Cork pilot boat. The wind then became variable and died down." In the same letter, Captain Samuels refers to the *Dreadnought's* early (February-March) eastbound passage from Sandy Hook to Northwest Lightship, Liverpool, of 13 days and 8 hours and to final anchorage one hour later, and he adds: "The following will give you an idea of the character of the ship and the time she made. . . . In 1854 she made the same passage in 13 days, 11 hours and six times in succession under sixteen days, including one run of fourteen days and one of fifteen days."

Captain Samuels, in his book FROM THE FORECASTLE TO THE CABIN, dictated in 1886, refers to an eastward crossing (believed to be that of February 1855) in which the *Dreadnought* covered 1,080 nautical miles during the first seventy-two hours out from Sandy Hook. (This is at the rate of 360 miles per day and 15 knots per hour.) Captain Samuels says that the ship was running before a strong northwester. "We were driving her hard and were making a Northern Passage to be sure of having wind enough. It was so cold that eight of our men were frostbitten the first night out. The decks and rigging were a mass of ice. Had the wind continued, we would have landed our passengers in Liverpool under nine days." Before the voyage ended, the *Dreadnought* got into heavy field ice and had a collision with the British ship *Eugenie,* from London for Quebec, running at night with "no lights set," and both ships suffered much damage. The *Dreadnought* "lay to till daylight" before proceeding on her voyage, and notwithstanding damages from ice and the collision as well as bad sailing conditions on some half of the way over, the ship made a passage of under 15 days.

The times stated for the lengths of transatlantic passages are confusing and mean but little unless the facts are known. There is some four and three-quarter hours' difference in sun time and five hours in local time in the crossing; some reports of the time made on runs are from pilot to pilot, others from anchorages, others dock to dock, whereas still others are from point to point, light to light, or the very indefinite and unsatisfactory "land to land." On the November 20 to December 4, 1854, passage of the *Dreadnought,* she reported a run of 12 days 12 hours from Sandy Hook to Cape Clear, Ireland, and on the crossing leaving New York June 17, 1859, she evidently, as claimed, made the Atlantic crossing from Sandy Hook to "off Queenstown" in 9 days 17 hours.

A nine- to ten-day crossing of the Atlantic from Sandy Hook to Cape Clear or to a point off Queenstown, Ireland, was quite within the possibilities of a hard-driven, strongly built, and well-sparred half clipper packet like the *Dreadnought.* In June of 1859, according to notices in the press, the *Dreadnought* could have made the run and delivered the mail to an Irish pilot boat as asserted by Captain Samuels—and actually did so according to the authoritative marine editors of the British press. It is also known from the available records of competent contemporaries that the wind then died down and became adverse for sailing, as stated by Captain Samuels, for, according to the records, the *Dreadnought* did not reach Liverpool until July 2 and the complete passage occupied some 14 days.

Capt. Arthur H. Clark, of Boston, Mass., an admirer and booster of Boston-built clippers, in THE CLIPPER SHIP ERA, quotes what he claims to be the log of the *Dreadnought* on her record-breaking outward voyage from Sandy Hook to Northwest Lightship and says: "An analysis of the abstract log showed that nine days and twenty-one hours after discharging her pilot to the eastward of Sandy Hook, she was not within four hundred miles of Queenstown." But Captain Clark is confusing the February 27-March 12, 1859, eastbound passage of the *Dreadnought,* made in the fast time of 13 days 8 hours from Sandy Hook to Northwest Lightship, Liverpool, with the record ocean crossing of 9 days 17 hours, made from Sandy Hook to "off Queenstown," Ireland, nearly four months later. Captain Clark could not possibly have had access to any abstract log of the *Dreadnought* covering the June 17-July 2, 1859, passage from Sandy Hook to Liverpool. The official log of the *Dread-*

nought for the voyage in question is unavailable; neither is any authenticated copy of such a log in existence today. The owners and agents of the vessel did not keep copies of the logs, and the original copy, belonging to the ship and captain, was destroyed in the accident that ended Captain Samuels' Western Ocean career. In response to an inquiry, C. F. Ogden (whose father was the New York agent of the *Dreadnought* and of the "Red Cross," or "St. George's," line) wrote on June 16, 1908: "I have no idea where the log of the *Dreadnought* could be found. It is certainly true that the voyage was made in that time (9 days 17 hours, land to land, eastbound) as I well remember." With reference to the official log, we read in a letter written over the signature of Capt. S. Samuels to John H. Morrison on April 6, 1908, the following: "When my leg was broken in 1862, the cabin was flooded in that gale and nearly all my papers were destroyed. What I have given you is what I have gathered from some notes that I had and some newspaper clippings." Francis B. C. Bradlee, in his booklet "The *Dreadnought* of Newburyport," quotes a letter dictated by Captain Samuels to his daughter in 1908 and accepts the statement—which merely confirmed general historical knowledge and the belief of marine authorities—that the *Dreadnought,* under the command of Captain Samuels, in an eastbound Atlantic crossing made in 1859, "was off Queenstown nine days and seventeen hours out" from Sandy Hook.

The New York HERALD of April 1, 1905, and the New York WORLD of June 5, 1905, contained records of personal interviews with the late Captain Samuels in which he distinctly claimed for the *Dreadnought* the 9-day-and-17-hour record. For many years previous to his death, Captain Samuels was president of the New York MARINE JOURNAL, and Miss Schanze, at first stenographer and later assistant editor of that paper, affirms that Captain Samuels not only often spoke to her of the record passage but also even dictated notes in regard to it. (See MARINE JOURNAL, June 30, 1917.) This is confirmed also in letters to Francis B. C. Bradlee by Capt. George L. Norton, the editor of the MARINE JOURNAL, and by Miss Edith Samuels herself.

The record Atlantic crossing of the *Dreadnought,* land to land, was accepted by seafaring men and marine experts during Captain Samuels' life, and as he vouched for its authenticity, it would seem advisable to take the word of a reputable shipmaster for the *Dreadnought's* performance—verified and accepted by critical contemporary marine correspondents and editors of the British press in July 1859—rather than give too much attention to the critical statements of writers of a later generation, particularly as some of them (following the original "debunker") were prejudiced in favor of Boston ships and found it difficult to believe that a smaller and fuller vessel could cross the ocean as fast as or even faster than a McKay extreme, or "out-and-out," clipper.

In November 1923, fifteen years after Captain Samuels' death, Ralph D. Paine, of Durham, N. H., wrote an introduction to a new issue of the book FROM THE FORECASTLE TO THE CABIN, published in Boston, Mass. The book bears Capt. Samuel Samuels' name, but is the product of a ghost-writer recording conversations with, and revamped matter dictated by, Captain Samuels. Paine states that the captain told him personally that the *Dreadnought's* record time eastbound of 9 days and 17 hours was correct; but he shows the influence of certain Boston iconoclasts and insinuates that at the time of the conversation Captain Samuels was too old to differentiate between fact and the product of imagination. This is the knife thrust of a Brutus to a Caesar.

Until after the death of Captain Samuels in 1908, no doubt had ever been expressed as to the authenticity of the *Dreadnought's* reported record trip of 9 days and 17 hours eastbound from land to land. It is to be regretted that in later years a small coterie of prejudiced marine writers has endeavored—with no real foundation of fact—to deny that the fast passage of 1859 was ever made. Following the attacks made on the old and accepted record of the *Dreadnought,* several authorities have come out in defense of the generally admitted 9-day-and-17-hour record trip eastbound. Francis B. C. Bradlee wrote in a work printed by the Essex Institute, Salem, Mass., in 1920:

The author has investigated the case with the greatest care, and the result speaks for itself and proves beyond a reasonable doubt that the fastest voyage across the Atlantic Ocean ever made by a sailing ship was by the *Dreadnought* in nine days and seventeen hours from Sandy Hook to the pilot boat off Queenstown Harbor.

Then, after recording accumulated facts, he refers to the energy expended to prove the record a myth by certain iconoclastic minded members of the shipping fraternity, and he adds: "The author thinks it is due the memory of Captain Samuels and the American Merchant Marine generally to clear up beyond doubt the facts of the *Dreadnought's* most celebrated voyage."

The owners and command of other sailing vessels have made claims of eastward transatlantic crossings from and to indefinite land-to-land points in under ten days, which, according to the custom in vogue, would be referred to as "nine-day crossings." The packet or general trader *Guy Mannering* (1,418 tons), built by W. H. Webb for R. L. Taylor's New York "line" in 1849, actually claimed two 9-day (under 10 days) eastbound transatlantic crossings from land (not necessarily as near New York as Sandy Hook) to Cape Clear on the southwest tip of Ireland during her career. That the *Dreadnought* made a 9-day-17-hour transatlantic run between Sandy Hook and a point off Queenstown Harbor, Ireland, as claimed by her command and owners is more probable than that the *Lightning* actually covered 436 nautical miles in twenty-four hours of sailing or that a large percentage of the claimed achievements of the clippers is authentic.

The Monthly Nautical Magazine of March 1855 stated:

On the homeward passage from Liverpool the *Dreadnought* sailed from the Mersey 6th January, at 8 a.m., with light airs. At 2 p.m., the clipper ship *Lightning*, in tow of two steamer tugs, came up and passed the *Dreadnought*, standing out to sea. On the next day the wind was W.S.W., blowing briskly; at noon the *Dreadnought* met the two steam tugs returning from the *Lightning*, which they had towed out of sight to sea. At sundown, same day, weather clear, saw the topgallant-sails of the *Lightning*, no other sail being in sight. On the following day, viz., the 8th January, at 5 a.m., the *Dreadnought* had so far overhauled the *Lightning* as to be able to cross the bow of the latter, when the former tacked ship after her. The wind was W.S.W. all day with strong royal breezes. By 4 p.m. the *Dreadnought* had beat the *Lightning* hull down astern, and saw no more of her. The *Lightning* was built by Donald McKay, of East Boston; and the *Dreadnought* by Currier & Townsend, of Newburyport, Mass., and is owned by David Ogden, Esq., of New York.

Phenomenal speed has been claimed for the *Dreadnought*, but an analysis of day's runs does not substantiate the assertions made as far as a high spurt speed in knots per hour is concerned; it does suggest, however, that she was a hard-driven packet and made unusually uniform, fast and comfortable passages under the prevailing, generally adverse conditions of wind and sea. The *Dreadnought* has been credited with a day's run of 387 miles under phenomenally favorable sailing conditions, but such a run should be questioned. A later historian says: "Her best day's run was 345 miles, and she seldom exceeded 300 miles a day." No matter what the facts in regard to high speed for a short time or distance may be, it is, nevertheless, a fact that the relatively small and commodious *Dreadnought*—of outstanding design, staunchly built and hard driven by her command—held a record even among the world's largest and fastest extreme and semi-clippers over the world's most turbulent ocean course for high, maintained sea speed and for uniformly fast voyages. In this respect, in the most severe North Atlantic service—noted for its gales and high seas—she proved to be in a class by herself. The *Dreadnought* seldom, if ever, logged over 15 knots per hour, but she made consistently fast and comfortable passages. She was considered the most reliable and safest as well as the fastest vessel over the route in the North Atlantic trade as long as Captain Samuels was in command; moreover, she was a highly publicized craft, and her captain and owners were enterprising and resourceful press agents. They most assuredly had a good-looking and well-designed and built half clipper type of packet to work with, which was splendidly operated and forcibly but safely driven, so that they did not have a difficult job "to sell" "The Wild Boat of the Atlantic" to the public. The *Dreadnought* caught the popular imagination and, for many years, meant to the public mind the best sailing vessel in the Atlantic "ferry." Yet, in steady service, she seldom logged over 300 miles per day or showed an average speed for a watch much in excess of 14 knots per hour.

Notwithstanding all the glory of the *Dreadnought* and her reputation for speed, the vessel was not a real clipper, and it is even doubtful as to whether she was "the fastest packet on the Western Ocean"—if normally sailed. However, she was undoubtedly the hardest driven ship in the Atlantic service, and she was splendidly built and kept in condition to withstand successfully the demands made upon her. Writing of the *Dreadnought,* Lubbock, the English marine historian, says: "She was not an extreme clipper in point of design. . . . There is no doubt that her captain had more to do with her quick passages than her designer, for in light winds she was slow, and it is doubtful whether she was really much more than an 11-knot ship." The *Dreadnought* made no great day's run; on her fastest reported transatlantic passages the best day's runs as per preserved official logs were 320, 313, 312, and 308 miles. It would seem that the best average speed maintained for a day was only 13⅓ knots per hour, which was splendid speed for a packet but slow for a clipper. Extreme clippers eastbound in the North Atlantic claimed some great speed records for a day's run, such as *Lightning,* 436 miles (18.2 knots per hour); *Donald McKay,* 421 miles (17.5 knots per hour); and *Red Jacket,* 417 miles (17.4 knots per hour).

Whereas the *Dreadnought* was a sizable ship for a sailing packet, she was in reality a small vessel compared with the big and powerful clippers that Donald McKay and others were building at the time. She was, moreover, a fuller-modeled craft, with sturdier spars and rigging, and had many of the hard service and lasting economic characteristics of the square-riggers built in Maine, which wood sailing vessels survived the clippers by some thirty years and became famous as "Down Easters" for both seagoing and money-making qualities (also for fast passages) long after the clippers, such as were built and advocated by McKay, had been swept from the seas in competition with iron and steam.

The *Dreadnought's* best westbound transatlantic crossing of 19 days was very fast, but it is far from being the record for regular packet sailing vessels engaged in the Atlantic "ferry" trade. The Black Ballers *Yorkshire* (996 tons), ten years older than the *Dreadnought* and only seventy per cent her size, and *Harvest Queen* (1,383 tons), built in 1854, each made a westbound crossing of only 16 days. Seven other transatlantic packets each made a westbound passage in better than 19 days, and six more equaled that time. Capt. David G. Bailey, who set up the 16-day record run of the *Yorkshire* on November 2-18, 1846, took over for a single voyage the new Black Ball liner *Isaac Wright* (1,161 tons), built (as were the other record-making Black Ball liners) by W. H. Webb, New York, and on the run eastward sailed from New York on December 4, 1847, and arrived at Liverpool on the 17th, after a record passage of 13 days from port to port.

Bad luck finally overtook the *Dreadnought,* and when it struck it was severe enough not only to mar the ship's magnificent sustained record for speed and reliability on transatlantic passages but also to sever the unbeatable combination of the ship and Captain Samuels. Leaving Liverpool January 16, 1863, on a midwinter passage to New York, the ship ran into heavy weather and on January 21, in the "Devil's Blow-hole" of the "Tempestuous Forties" of the turbulent North Atlantic, was in the grip of a furious gale. Sail was reduced to a close-reefed main topsail, the least canvas the ship had ever carried during over nine years at sea. In an attempt to heave her to, the men at the wheel were unnerved by the approach of a mountainous sea and put the wheel the wrong way; their error brought disaster. The sea carried away the rudder and its braces, smashed deck structures, stove the hatches, flooded the cabin, and allowed great quantities of water to get below. Captain Samuels had a narrow escape from being swept overboard, and he received a compound fracture of the right leg, with a punctured femoral artery. The ship, in the trough of the sea for three days, with the captain in a pitiable condition, the first mate incompetent, and the carpenter killed, was in a desperate position. The first jury rudder contrived was lost overboard, but the second one shipped put the vessel under control, and she limped 280 miles into

Fayal, Azores, two weeks after the accident, with Captain Samuels more dead than alive. The captain was taken ashore, where he was treated, and after seven and a half weeks he returned to the ship, which, in the meanwhile, had been temporarily repaired with a new short rudder, as there was no dry dock at Fayal. The *Dreadnought* resumed her passage April 6 and reached New York April 25 after a passage of 19 days, but she arrived at her port of destination 99 days out from Liverpool. Captain Samuels had received such serious injuries that it took a long time for his recovery, and he never again commanded the *Dreadnought* or any other sailing vessel.

The *Dreadnought,* after repairs, made two more transatlantic round voyages. The one from June 9 to August 22, 1863, was a passage of 18 days outward and 30 days homeward, but disaster again struck the ship on the second leg of the following voyage. Once more she was obliged to put into Fayal (December 26, 1863) this time partially dismasted, her rudder completely gone, and with Captain Lytle suffering injuries from which he died. After repairs and with Mate Rockwell in command, the ship finally arrived at New York February 26, 1864, after a passage of 25 days from Fayal. Her days as a transatlantic packet were over.

The *Dreadnought* was then placed in the Cape Horn service, making two round voyages under Captain Cushing. On the first, she left New York May 19, 1864, and reached San Francisco October 1 after a slow passage of 134 days. She then sailed to Honolulu, making a good run of 13 days, and left that port December 17, anchoring in New Bedford Bay March 11, 1865, after a fast passage of 84 days from Honolulu and a run of 43 days from Cape Horn. The distance traveled on the passage eastward was 12,570 miles, an average of about 150 miles per day and 6¼ knots. No very good sailing conditions were experienced, and the best day's run on the voyage was only 272 miles—an average of 11⅓ knots for twenty-four hours.

On the second Cape Horn voyage, the *Dreadnought,* under the same command, made a westward passage in 127 days, arriving at San Francisco January 18, 1866, and returned east via Callao. Captain Callaghan was in command of the ship's third California voyage. The vessel made a very slow westbound run of 149 days from New York to San Francisco, where she arrived July 29, 1868, and—loaded with grain—an eastward run of 121 days to Queenstown "for orders." She reached Liverpool 125 days out, and Capt. P. N. Mayhew, formerly of the clipper ship *Wild Pigeon,* took command of the *Dreadnought* as she loaded in Liverpool for San Francisco. She sailed on her last voyage April 28, 1869, and made a 29-day run from Liverpool to the Atlantic equator. On July 4, when 67 days out, having experienced light winds, calms, and persistently poor sailing weather, the *Dreadnought,* carried by a strong current, drifted ashore on Cape Penas, northeast of Tierra del Fuego, when becalmed and unable to take care of herself. The famous ship soon became a total wreck—because of helplessness—but, fortunately, all of the officers and crew, numbering thirty-four, were saved.

At the time of her loss, the *Dreadnought,* then a scant sixteen years of age, was owned by John Parrott, of San Francisco. The insurance paid on the ship and cargo was reported as $83,000. Drifting ashore to destruction when becalmed in the South Atlantic was a strange ending to the career of "The Wild Boat of the Atlantic," whose record for nearly ten years of sailing on the tempestuous Western Ocean and in the Roaring Forties of the North Atlantic is not only unsurpassed but also unequaled.

The sailing performance of the *Dreadnought* during her last few years is surprisingly poor after the brilliant work she did when commanded by Captain Samuels. After Captain Lytle had met misfortune and death on his one transatlantic round voyage in her, Captain Cushing and Captain Callaghan did not accomplish much with her in the Cape Horn trade, for which many marine authorities thought the ship was peculiarly adapted. Under Captain Mayhew, the *Dreadnought,* a "wild boat" no longer, actually drifted ashore in a calm, when near the entrance to the Straits of Magellan, and left her bones on the inhospitable shores of Tierra del Fuego. When the partnership of the *Dreadnought* and Captain Samuels was dissolved, the once peerless ship seemed to lose abruptly her glory and became merely an ordinary vessel—as did the McKay clipper *Flying Cloud* when Captain Creesy relinquished his command of her. It is also evident that, whereas a good Cape Horner generally made an indifferent transatlantic packet, the best of these Western Ocean packets did not show much quality in the Cape Horn trade. With Captain Samuels' withdrawal, the *Dreadnought* was not kept up, and a more rapid deterioration was the result, which increased with change of owners and demands for economy of operation.

The *Dreadnought's* entire claim to fame is based on the nine and a half consecutive years' record as a transatlantic packet when under the command of Capt. Samuel Samuels, and her record for consistent, fast sailing during this period stands unchallenged in the complete history of sail. The *Dreadnought* was not even a real medium clipper; yet she resembled somewhat the *David Crockett* and the *Andrew Jackson,* but was more of a Western Ocean packet type of ship than either of these two Mystic-built medium clippers, which made great records and history in the California run. The *"Crockett"* was an average Atlantic packet and one of the finest Cape Horners of all time (she was built for the transatlantic trade). The *Dreadnought* was the acknowledged "queen" of the North Atlantic packets during the period 1853-1862, but in her later years she proved to be a mediocre sailer in the Cape Horn trade.

No clipper was ever built that could compete with a well-modeled and sparred Atlantic sailing packet in a westward, or "uphill," passage across the North Atlantic. The sharp-lined clippers could make remarkably fast transatlantic runs eastbound, sailing with a big spread of canvas before favorable westerly winds of gale force, but traveling westward against such winds their performance was conspicuously poor as compared with that of the packets. The *Lightning, Red Jacket, James Baines, Donald McKay,* and similar big, sharp-lined, loftily sparred clippers, with tremendous sail spread, could reel off more miles a day running before favorable gales in the North Atlantic than the substantially sparred and conservatively canvased *Dreadnought.* However, sailing against strong westerlies, "The Wild Boat of the Atlantic" would beat any and all of these extreme clippers in actual service on westward crossings, and compared with the big clippers built for the California and Australia trades, the *Dreadnought* was a little ship, which was a handicap in heavy weather.

Williams & Guion and the Black Star "Line" of Transatlantic Sailing Packets

There was built at New York in 1850 what has been termed "the first clipper packet" for the transatlantic service, and she had been ordered by Williams & Guion's New York-Liverpool Black Star "Line." This clipper, named the *Universe,* was of 1,297 tons. She had a rather full model and carried less sail spread than some of the so-called "clipper packets" that followed her, but the *Universe* was, nevertheless, built for speed. Lloyd's Register credits her to William H. Webb.

The fastest vessel of Williams & Guion's sailing packet "line" was the *Adelaide,* but this ship was a clipper packet of "medium" type both in sharpness of model and in loftiness of rig and was designed and built by A. C. Bell, New York, in 1854 with the California as well as the transatlantic trade in mind. She has been called "the clipper of Williams & Guion's fleet" and, in 1864, is credited (with Capt. Robert C. Cutting in command) not only with two fast eastbound Atlantic passages—one of them a claimed record of 12 days 8 hours from New York to Liverpool—but also with beating the Cunard Line steamer *Sidonia* on one of these passages and the Inman Line steamer *Kangaroo* on the other. One of these 1864 eastward transatlantic passages is known to have been negotiated in 18 days from New York to Liverpool, dock to dock, for the ship cleared New York June 9 in company with the S.S. *Kangaroo* and was at her unloading pier at Liverpool on June 27, 1864, arriving the same day as the steamer, which reported having been "delayed a day or two by engine trouble." Lubbock, the English marine historian, says that the American Black Star liner (and sailing packet) *Adelaide* "in 1864 ran from New York to Liverpool in 12 days 8 hours, beating the Cunard *Sidonia,* which passed her on her way down New York Bay." This evidently is a clear case of American sail beating British steam on an eastbound crossing of the Atlantic as late as 1864 (as the Civil War neared its close).

On passages westward in the Atlantic "ferry," the *Adelaide* did some good sailing in the early sixties. Under the command of Captain Cutting, she arrived at New York April 6, 1861, 22 days from Liverpool, and the four following westward passages were made in 27, 25, 30, and 25 days, respectively. This average of only 25⅘ days for five consecutive westbound transatlantic crossings, port to port (comprising passages in every season of the year), was claimed to be a record for consistent, fast sailing for that period of time over the homebound course against the westerlies; the *Dreadnought,* however, is credited with four consecutive westbound passages in a total of 98 days and an average of 24½ days per passage from port to port.

The *Adelaide* was a big three-decked ship of 1,831 tons (length 214 ft., beam 43 ft., depth 28.2 ft.) and was said to be able to carry 3,500 measurement tons of cargo, which suggests a full-modeled ship and a great deal of body above water. She was built for Thomas Wardle, of New York (launched November 22, 1854), at a cost of $128,000 ($70 per ton) and did some creditable sailing in the Cape Horn run to California before she engaged in the transatlantic trade. Under Capt. Joseph Hamilton (maiden voyage) and Capt. Edgar Wakeman, the vessel made four passages between New York and San Francisco during the period January 27, 1855-January 10, 1859, in 114, 124, 127, and 133 days, respectively. The average of these westbound runs was 124½ days, and whereas the first passage was the only noteworthy, fast one, none was in very slow time. The voyages grew longer as the ship grew older, due largely to the fact that her spars were shortened and sail spread reduced, fewer men were carried, and orders were given to reduce operating expenses and "take no risks of incurring expensive damage by hard driving." It is said that on her first voyage the *Adelaide* ran from New York to a point opposite Rio de Janeiro in 25 days and that when 104 days out she was only 500 miles from the Golden Gate, but was then held back by light airs and calms. On her second voyage, the ship reached the Atlantic equator in only 18 days and on the 28th day was "hove to, off Rio, in a heavy gale"; on this passage, she was within 500 miles of the Golden Gate on the 110th day, but required two weeks to complete the run because of adverse wind and atmospherical conditions. On the third westward run to San Francisco, the *Adelaide* was held off the California coast for a full week by light baffling airs and fog. On this passage, all of the ship's crew of twenty-six A.B.'s were Negroes, and as the vessel was docking Mate Lewis knocked one of the men overboard from the topgallant forecastle, and he was drowned. (Lewis was arrested, but cleared in court.) The following March the mate was murdered by one of the crew at Elide Island and the guilty man condemned by a court-martial of officers from the various ships then in port; he was hanged from a yardarm on the *Adelaide.*

On the fourth voyage, the *Adelaide* left New York August 30, 1858, in company with Donald McKay's mammoth clipper *Great Republic* and ran even with her until the two ships parted company off Cape St. Roque, having sailed within sight of each other for eight consecutive days and, later, for two more without either vessel gaining on the other. The *Adelaide* had bad luck rounding the Horn and in the Pacific and reached San Francisco thirteen days after the *Great Republic* had made port.

On the eastward Cape Horn passage, the *Adelaide* made a run from San Francisco to New York in 106 days to complete her maiden voyage and, being heavily laden with wheat and barley, is said to have "netted her owners nearly fifty per cent profit." It is no wonder, therefore, that instead of being placed in the transatlantic packet service the *Adelaide* "was sent out again to Frisco, sailing two days after Christmas" (1855). Returning east on her second voyage, the ship could not get a grain cargo, so she degenerated quickly in her career to a guano carrier and took such a cargo from Callao to New York in 91 days. The third and fourth (or last) eastward Cape Horn runs of the *Adelaide* were also in the guano trade, and she made passages from Elide and the Chincha Islands in 87 days to New York and (on her final run in this service) in only 65 days to Hampton Roads, arriving November 14, 1859. (On this passage, the run from Cape Horn to destination was made in only 38 days.) Capt. Edgar Wakeman, who had commanded the *Adelaide* on her last three California voyages, had "bought into the ship," but at the end of this voyage he sold his interest in the vessel and retired from sail. (The wife of Captain Wakeman was with him on his voyages and gave birth to two children aboard the *Adelaide,* one of whom was fittingly named Adelaide Seaborn Wakeman.) After a triangular Atlantic run via Mobile to Liverpool (with cotton) and back to New York, during which the ship made a good passage of 27 days from the southern to the Mersey port, the *Adelaide,* in 1860 (when approaching six years of age), was finally placed in the trade for which, primarily, she had been built. As a sailing packet ship between New York and Liverpool, she soon established a fine reputation for seaworthiness, comfort, and consistently good speed.

In 1863 the *Adelaide* was reported sold and put under the British flag. This transfer was caused by the Civil War, and it is doubtful as to whether there was any real change of ownership, for the new purchaser (Guion) was a member of the firm of Williams & Guion, the former and original owner of record. In 1874, however, the ship was registered with A. G. Linn, of Liverpool, as owner.

William H. Webb also built, during the clipper ship decade, the following sailing packet ships for Williams & Guion, of New York, and its Black Star Line, whose house flag, with its blue field, white diamond, and black star, was impressive:

Name of Ship	Type	Year Built	Tonnage	Dimensions Length	Beam	Depth
				Feet	*Feet*	*Feet*
AUSTRALIA	Clipper packet	1852	1,447	192.0	40.0	27.0
AMERICA	"Fast general trader"	1852	1,180	175.0	39.0	23.0
JOHN BRIGHT	General trader	1853	1,445	191.7	40.6	28.4
CULTIVATOR	General trader	1854	1,446	192.7	40.6	28.6
THORNTON	General trader	1854	1,422	190.0	40.6	28.6
RESOLUTE	General trader	1857	1,413	190.0	40.0	28.0

The designations for "type" as stated above are taken from the builder's personal records. The last four ships were evidently built from the same model, and in both model fullness and rig could have been classed as medium clippers, or "half clippers." As a matter of fact, the ships of this quartet were almost identical in dimensions, tonnage, and sharpness of model with the *Australia,* which Webb classified as a "clipper packet," although the later ships were less loftily sparred and more moderately canvased. Little is known of the sailing performance of the *Australia,* but she was commanded by Captain Clough (later of the clipper ship *Malay*), who described her as "a fine sea boat, a good carrier, and a fair sailer." Evidently, she was a fast general trader and, as she was a reputed clipper, has to be designated as a "medium clipper packet." The *Australia* was wrecked near Ayab in May 1864, when about twelve years old. The Guion line was founded upon and continued the Williams & Guion service on the Western Ocean, and, later, under British registry, during the days of steam and after all sailing packets had been driven from the Atlantic "ferry," it became very prominent in the operation of iron screw "greyhounds" in the transatlantic trade.

Packet Ships and Clippers Operated by Frost, Mumford, and Associates

During the 1850's, William H. Webb, New York, built three ships for William T. Frost, of New York, who had been prominent in the coastal sailing packet trade between New York and Savannah and, later, New Orleans for many years, operating part of the time as a partner in the firm of Frost & Hicks. In 1854 there was launched the *New Orleans* of 924 tons, a well-modeled packet (length 160.8 ft., beam 35.6 ft., depth 21.6 ft.) designed for the coastal trade; in 1856, two ships, one of which (the *Intrepid* of 1,173 tons, a medium clipper) was promptly sold to Bucklin & Crane and put in the California trade, while the other *(Ocean Monarch II)* achieved fame as the largest transatlantic packet ever built. The first *Ocean Monarch,* built by Donald McKay at East Boston in 1847 for Enoch Train's Boston-Liverpool White Diamond Line, was of 1,301 tons (length of keel 188 ft., beam 38 ft., depth 23 ft.—builder's measurements) and was tragically destroyed by fire at sea, with great loss of life, off Liverpool in 1848, when only a few months old. The second ship bearing this name, built in New York by W. H. Webb in 1856, was a tremendous vessel of 2,145 tons, which, with a length of 240 ft., beam of 43.8 ft., and depth of 30.3 ft., greatly exceeded all other transatlantic sailing packets in size. The next largest were the *Amazon* (1,771 tons), *Palestine* (1,751 tons), *Calhoun* (1,749 tons), and *Webster* (1,727 tons). (The first two of these large packets were built by J. A. Westervelt, New York, in 1854 for the London Black X Line and the *Calhoun* by the same builder in 1853 for Spofford & Tileston's Dramatic-Patriotic Line, with the *Webster* as a running mate, also built in 1853 at Portsmouth, N. H.) The *Ocean Monarch II* was the largest sailing ship of any type built in the United States in 1856, and she was described when under construction as "possessing greater freight-carrying capacity than any other vessel afloat." The depression was on, and interest in constructing "bigger and faster clippers" had waned. However, during the last years of the boom period (in fact, the early post-boom years), the following clippers larger in tonnage and dimension measurements than the *Ocean Monarch II,* which followed them into the water, were built:

Name of Clipper	Tonnage	Year Built	Builder
GREAT REPUBLIC	3,357	1853-1855	D. McKay, Boston
DONALD McKAY	2,594	1855	D. McKay, Boston
JAMES BAINES	2,515	1854	D. McKay, Boston
CHAMPION OF THE SEAS	2,447	1854	D. McKay, Boston

Name of Clipper	Tonnage	Year Built	Builder
SOVEREIGN OF THE SEAS	2,421	1852	D. McKay, Boston
QUEEN OF CLIPPERS	2,361	1853	R. E. Jackson, Boston
RED JACKET	2,305	1853	Geo. Thomas, Rockland, Me.
EMPRESS OF THE SEAS	2,197	1853	D. McKay, Boston

It is significant that the five largest clippers were built by Donald McKay, East Boston, three for James Baines and his Liverpool-Australia sailing packet line and two by McKay on speculation, and these big clipper ships can be said to have financially ruined both men.

The big sailing packet *Ocean Monarch II,* built for William T. Frost, New York, and commanded by Capt. J. P. Page, although having all the characteristics of the sailing packet as far as design and construction were concerned, was not operated by an established packet line on a regular schedule and should, therefore, be classed as a general trader. Like many other American sailing ships of her day, she proved to be too big and of too deep draft for European ports and harbors.

The *Intrepid* (described elsewhere as a Bucklin & Crane ship) was listed by William H. Webb as "built for William T. Frost" in 1856; she was a handsome medium clipper packet of 1,173 tons (length 180 ft., beam 37.8 ft., depth 23 ft.). She made two passages around the Horn from New York to San Francisco during 1856-1859 in 145 and 132 days, respectively (Capt. E. C. Gardner), but was wrecked and "went to pieces" on Belvidere Reef near the entrance to Gaspar Straits in 1860.

The packet ship *Washington* (1,655 tons) was launched from Jabez Williams' yard at Williamsburg in 1849 for the Frost & Hicks transatlantic (New York-Liverpool) "line." This ship was a big three-decker emigrant carrier and a fast sailer and was 205 ft. 6 in. long, 41 ft. 3 in. beam, and 28 ft. 10 in. deep, with a load draft of 22 ft. In October 1853, the *Washington* arrived at New York from Liverpool with cholera raging on board. Ninety-four emigrants had died during the crossing, and there were sixty-two cases on the ship when she reached New York. In February 1852, the *Washington,* with Captain Page in command, made a very fast eastbound crossing reported as 13 days and 14 hours.

William T. Frost owned also, with Benjamin A. Mumford, the big clipper packet *Tornado* of 1,802 tons, built in 1852 by Jabez Williams, of Williamsburg, N. Y. She was 222.2 ft. long, 41.8 ft. beam, and 28 ft. deep. The *Tornado* was put in the California Cape Horn trade under the command of Capt. Oliver R. Mumford (formerly of the packet ships *Palestine* and *Wisconsin* and also of New Orleans coastal packets). The following is a comparative record of her sailing performance for the four westbound passages made in this service. Between her second and third voyages to San Francisco, the *Tornado* was in the Atlantic packet service, making one round trip between New York and Havre and one from New York to Liverpool (16 days) and return (28 days).

Voyage No.		Departure from New York	Arrival at San Francisco	Length of Passage in Days		Remarks
For Ship	To California			Elapsed	Claimed	
1	1	Feb. 21, 1852	July 1, 1852	131	127	Very light winds throughout. Sandy Hook to Pacific equator, 86 days. From line to San Francisco, averaged only 52 miles per day (2⅙ knots per hour). Total distance logged, 17,575 miles.
2	2	Jan. 11, 1853	May 2, 1853	111	109	Sandy Hook to Atlantic equator, 22 days (3,989 miles). Off Cape Horn on 52nd day; was 22 days from Pacific equator to Golden Gate after being within 300 miles of destination for 7 days. Logged during February, 3,897 miles.
5	3	Nov. 25, 1854	Apr. 11, 1855	136	135	Very light winds and calms all the way except for 16 days off Cape Horn. For 48 days averaged only 60 miles per day. Was 500 miles due south of Farallon Islands on 123rd day. Total distance logged, 18,156 miles.
6	4	Dec. 6, 1855	Mar. 27, 1856	111	111 (also reported as 110)	Sandy Hook to Atlantic equator, 21 days; to Pacific equator, 90 days; claimed "was within 500 miles of the Golden Gate on the 99th day." Total distance logged, 16,869 miles.

Average length of all four westward passages, 122¼ days elapsed time.
Average length of all four westward passages, 120½ days as reported.

The first eastward Cape Horn passage of the *Tornado* was a noteworthy one. She left San Francisco August 7, 1852, in ballast, and was only 17 days to the line. The log of August 31 (when 24 days out) states that the ship had sailed up to that time 4,169 miles by observation and 4,301 miles by log. On September 9, the *Tornado* was in Lat. 43° 07′ S., and Captain Mumford's troubles were commencing. The following are brief extracts from the ship's log:

Sept. 9. Weather very unsettled and wind very unsteady. Was struck aback twice during the night with the wind from SE. Sea all in heaps. . . . I am compelled to keep the ship under short canvas, as our crew is the most worthless lot I ever saw on board a ship. 4 P.M. bar. [barometer] down to 28.60 [inches] 2 reefs furled jib and mainsail. Middle bar. 28.33 wind hauling northerly.

Sept. 10. Lat. 45-25 S. Long 96-33 W. 4 A.M. wind ESE. 7 A.M. wore ship to the eastward, wind hauling southerly. Sea all in heaps. Bar. 28.20. Noon bar. 28.50. Dirty looking weather.

Sept. 11. Begins with moderate breeze from the south and squalls of sleet. Bar. 28.50. 2 A.M. was struck by a whirlwind, which carried away the bowsprit 3 ft. outside the night heads and landed it inside of the larboard anchor stock on the forecastle. The foremast also went close to the deck and fell upon the midship house. The fore-topmast was broke in 3 pieces between the hounds and cap. At the time this occurred the wind was moderate and had been so before during the night. Ship had single-reefed topsails upon her, except the mizzen, which was close reefed, reefed mainsail & jib & reefed spanker as when in Lat. 46-35 S. Long 95-08 West. From the low state of the bar., though steady, I had come to the conclusion that it was blowing hard to the south of us and the storm was travelling partially to the east, and as I could not depend upon our crew in an emergency I was going along easily, not wishing to overtake the storm if my supposition was correct. . . . The foremast and bowsprit were 36 inches diameter. 4 A.M. hard gales and the sea rising very fast. 8 A.M. finding the gale increasing and the great weight upon the main stays and topmast stays was endangering the mast (main-topgallant mast carried away), I decided to cut clear from the wreck & at 10 A.M., finding the gale still increasing & the sea very heavy, cut the lanyards of the fore rigging and let the wreck go. Back the close-reefed mizzen topsail and cleared it without much apparent injury to the side of the ship. by this time it was quite cold. Wind S. 8 of our crew was suddenly taken sick (from the cold) although they had as much hot coffee as they chose to drink.

From the 11th to the 17th inst. We were hove to, sometimes heading to the northward and eastward & then again to the SE. We have got up a studding sail boom as a foremast for the present, and the only sail we are able to set upon it is a fore stgsail. I am making a foremast out of a spare lower yard.

Sept. 17. Lat 46-36 S. Long 94-51 W. Stepped our foremast 6 feet forward of the old one. took a spare topmast & fitted it for a bowsprit. Ship under easy sail.

Sept. 18. No obs. Unbent the main spencer and bent it on the foremast.

Sept. 19. Lat. 49-43 S. Long 91-71 W. Fine breeze and heavy sea. fitting rigging for yards, etc.

* * * *

Sept. 25. Lat. 55-10 S. Long. 77-42 W. Sent up fore-topsail yard & bent the sail and set it. Our fore-topmast is a fore-topgallant mast. Fore yard is a spare topsail yard. Fore-topsail yard is a spare topgallant yard with a main topgallant sail bent for a fore-topsail. Fair weather & smooth sea. Made all possible sail for the first time since the accident.

In spite of the severe experience encountered during the period September 9-25 as described above, the delay resulting therefrom, and the handicap to sailing speed inevitably associated with the use of an improvised, or jury, rig, the *Tornado* arrived at New York on November 15, 1852, after a passage, port to port, including all detentions, of only 100 days —reported as "86 sailing days." We are told: "In appreciation of Captain Mumford's successful completion of the voyage without putting into a port in distress, the underwriters presented him with a set of seven pieces of plate suitably inscribed, each piece being engraved with a view of the *Tornado,* dismasted."

In 1859 the *Tornado* fought a hurricane in the North Atlantic, and a huge roller during the height of the storm washed away the first and third mates, five seamen, and all of the ship's five boats.

The *Tornado* returned to New York on the second leg of her last three voyages in the California trade by calling at Peru and loading with guano; her first two passages from Callao to New York were made in 71 and 72 days, respectively. In 1857 the *Tornado* was put in the British-Australian trade, and she made several voyages between Liverpool and Melbourne, one of which had "an outward passage of less than 75 days." The ship arrived at Melbourne in March 1858 with mutiny aboard, the mate having shot three seamen, one of whom had died. Because of the Civil War, the *Tornado* was sold to the British in 1863 for £12,750, and the name was not changed. In 1864, it was reported that the ship was owned in the United States by Page, Richardson & Company, but Lloyd's Register of 1866 records her owners as Wilson & Chambers, of Liverpool. In 1875, with Bilbrough & Company, Liverpool, as registered owners, the *Tornado,* then nearly twenty-four years old, was burned at New Orleans when in the cotton trade. The ship and cargo at the time of the loss were valued at $100,000, and the vessel was sold by the underwriters, "as she lay," for $3,825.

Capt. Oliver R. Mumford was in command of the *Tornado* during her entire career of some eleven and a half years under the American flag. When the *Tornado* was sold to the British, Captain Mumford retired from the sea; he had been a master for twenty-eight years and was regarded not only as an able commander but also as an authority in navigation.

Benjamin A. Mumford was joint owner with James Smith and others, of New York, in the clipper packet *John Stuart,* a ship of more than ordinary interest. This vessel of 1,653 tons (length 206 ft., beam 41 ft. 8 in., depth 28 ft. 2 in.), built in 1851 by Perrine, Patterson & Stack, Williamsburg, N. Y., was heralded as "the first clipper ship built for the European trade." She was, in fact, a medium clipper of the packet type, with a model that was quite sharp below water, and was conspicuous as a "lofty and heavily sparred ship." It is said that for a big ship she was very handy, but she must have been extremely lofty in rig and carried an unusual amount of sail, for a mate that saw service on her humorously said: "Above the skysail she carried a main moonsail and above that, consecutively, a cloud-cleaner, a stargazer, a sky-scraper and an angel's foot-stool, the latter, however, being set only in dead calms, when the watch on deck were not allowed to cough or sneeze for fear of carrying it away." This was certainly not the rig for a packet ship and the North Atlantic trade, and after two years of running the vessel between New York and Liverpool—with Capt. Watson Ferris in command—where she evidently did not show the speed anticipated (two westward passages are recorded in 38 and 31 days, respectively), the owners put the ship in the California trade.

The *John Stuart* made four westbound Cape Horn passages from New York to San Francisco, of which the following is a brief and comprehensive comparative record:

No. of Westward Cape Horn Passage	Captain	Departure from New York	Arrival at San Francisco	Length of Passage in Days: Elapsed Time	Length of Passage in Days: As Reported	Length of Run in Days: From Sandy Hook to Atlantic Equator	Length of Run in Days: From Pacific Equator to Golden Gate	Length of Passage as Reported: In Northern Hemisphere	Length of Passage as Reported: In Southern Hemisphere
1	Ferris	Dec. 17, 1852 (cleared)	May 4, 1853	138	134	35	24	59	75
2	Ellery	Apr. 27, 1854	Sept. 10, 1854	136	136	37	34	71	65*
3	Chamberlin	Sept. 4, 1855	Jan. 16, 1856	134	132	35	19	54	78
4	Bernsee	Dec. 21, 1859	Apr. 23, 1860	124	124	23	31	54	70
Average for the four passages...............				133	131½	32½	27	59½	72

*On this passage, according to reports, the ship "was off Cape Horn only five days," but on the other three runs the time "off the Horn" is given as from 20 to 30 days.

Return passages to New York via West Coast South American ports were: from Guayaquil, 90 days, and two from Callao in 87 and 86 days, respectively. After trading between North Atlantic, African, and South American or Indian ports for several years, the *John Stuart* was sold at Bombay in early 1863 (during the Civil War) for 110,000 rupees and went under the British flag; soon afterwards, she changed hands again for a reported consideration of 128,000 rupees. In the late sixties and early seventies, she was registered as being owned by B. F. Camoa; hailing port, Bombay.

Benjamin A. Mumford was the leading member of a group of New Yorkers who owned the sailing packet *Wisconsin* of 925 tons (length 157 ft., beam 39 ft., depth 21 ft.), built in New York in 1847 as "a sensible fast sailer and good carrier for the China packet or any other good-paying deep-sea service." This ship, which was commanded for several years by Capt. Oliver R. Mumford (later of the clipper ship *Tornado*), was a very successful vessel and was of historic importance in both the British China tea and the California Cape Horn trades. After Britain let down the bars and permitted American ships to load in China and carry tea to England, the *Wisconsin* was one of eight United States-built and owned craft that took advantage of this new trading opportunity and sailed from a China port loaded for Britain prior to December 31, 1850. The little bark *Jennette* of 248 tons (built at Saybrook, Conn., for Charles Peterson, New Haven), with Captain Ward in command, was the first away, sailing from Whampoa (Hong Kong) on August 25, 1850. She was followed three days later by the historic *Oriental* of 1,003 tons (Capt. Theo. Palmer), which put into England the first tea carried in an American bottom. The *Wisconsin* (Captain Mumford) was the seventh United States vessel to leave China loaded for England; she sailed December 4, 1850, and was at her discharging dock in London on March 13, 1851, after a fast passage of 99 days—a run beaten only by the 97-day record of the *Oriental*. The *Wisconsin*, sailing 101 days after the first American vessel cleared for London, was the fifth craft flying the Stars and Stripes and loaded with tea to reach the Thames, and she arrived at her destination before the *Carlo Mauran* and *Mohawk*, both of which had sailed 33 days before her. Not until the *Witch of the Wave* (Captain Millet) reached London on April 5, 1852, nearly thirteen months after the *Wisconsin*, after a passage of 91 days (reported 90 days) was a faster run made between Hong Kong (Canton or Whampoa) and London or any English port than the passage of the *Wisconsin*—a ship that made no claim of being a clipper.

The *Wisconsin*, under Captain Mumford, gained sailing honors on her first westward Cape Horn passage to California. She cleared New York February 21, 1850, and entered at San Francisco June 24 after a reported passage of 121 days (123 days from clearance to entry). Of the many hundreds of "good and fast sailers" that were put over this course, leaving East Coast ports prior to April 13, 1850 (when the *Sea Witch* sailed and made a wonderful record of 97 days sea passage as reported and 102 days from clearance to entry), only two had made faster runs out, port to port, than the *Wisconsin*. These were the Baltimore clipper *Grey Eagle* (Captain Bower), which reached San Francisco on May 18, 1849, 117 days from Delaware Capes, and the fast and serviceable *Samuel Russell*, which left New York January 15 and arrived at San Francisco May 6, 1850, after a reported record passage of 109 days (111 days from clearance to entry). In the winter of 1852-1853, the *Wisconsin*, under Captain Scott, ran from Shanghai (about 900 miles up the coast from Hong Kong) to London in 125 days, port to port. This followed a second Cape Horn passage to California, which was reported as "a good run of 118 days" and was faster than any of the fifteen clipper ship passages starting from any East Coast port between January 4 and March 3, 1852. The *Wisconsin* was owned in South America in 1869, when twenty-two years old.

Benjamin A. Mumford & Company, New York, also owned the extreme clipper ship *Simoon* of 1,436 tons (length 205½ ft., beam 38⅔ ft., depth 22½ ft.), launched by Jabez Williams on December 4, 1852, from his Williamsburg yard on Long Island, N. Y. This ship made only one Cape Horn passage to California—her maiden voyage—and then engaged in general trading on the Seven Seas except during 1855-1856, when she was chartered by the French and operated as a transport during the Crimean War. On January 3, 1862, with Captain Langley in command, the *Simoon* arrived at Port Chalmers, New Zealand, after a passage of 72 days from Glasgow, Scotland. The Otago Daily News of January 4, 1862, said:

> The clipper ship *Simoon* of New York arrived at Port Chalmers early yesterday morning after an excellent passage of only 72 days from Glasgow. This is by far the quickest passage ever made to the Province and we trust, before the ship leaves, some public ovation will be paid the captain in

recognition of his having shown how much the duration of the voyage between the Mother Country and Otago can be lessened. On entering port the *Simoon* fired a salute of 21 guns.

The press of the Antipodes commented on the "extraordinary" and "unprecedented fast passage" of the *Simoon;* also on the splendid condition, upon arrival, of a shipment of some thousand "prime Leicester sheep." It was said that another record was made when the sheep were delivered with a loss of "less than five per cent" on the voyage. Leaving Port Chalmers January 26, 1852, the *Simoon* reached Valparaiso February 16 after a record passage of 21 days between the ports.

In October 1863, the *Simoon* was sold to Lamport & Holt and went under the British flag. In 1874 she was acquired by the Norwegians and renamed *Hovding,* and as late as 1912, when sixty years old, she is known to have been still operating, her masts and spars having been cut down, the yards removed from the mizzen, and the vessel re-rigged as a bark.

The Handy & Everett "Line" of Sailing Packets

The firm of Handy & Everett, of New York, was primarily interested in transatlantic sailing packet service, but owned no ships of consequence until it had built for its order in 1851 and 1853, respectively, the fine medium clipper ships, of packet type, *Governor Morton* and *David Crockett,* designed and intended exclusively for service in the Handy & Everett line operating between New York and Liverpool. The following are the comparative dimensions and particulars of these two Handy & Everett sailing packets, which gained a great reputation on trade routes other than the one for which they were built. It is surprising that, whereas the *David Crockett* did operate in the North Atlantic "ferry" early in her career for about two years, the *Governor Morton* made only one voyage in that trade—and this after she had made two Cape Horn runs to San Francisco. It was in the California service that these transatlantic clipper packets did most of their sailing, the *"Crockett"* for nearly twenty-seven years (1857-1883) and the *"Morton"* for twenty of her twenty-five years of active service.

Name of Clipper	Launched	Builder	Tonnage	Dimensions in Feet and Inches			Remarks
				Length	Beam	Depth	
GOVERNOR MORTON	Nov. 22, 1851	James M. Hood, Somerset, Mass.	1,430 (1,303 tons new)	196- 6 (also 192 ft.)	39-8 (also 39 ft.)	26	Stated capacity, 1,740 tons deadweight. Struck by lightning and burned when laden with cotton at mouth of Mississippi River on July 2, 1877, when about twenty-five and a half years old.
DAVID CROCKETT	Oct. 18, 1853	George Greenman & Co., Mystic, Conn.	1,679 (1,547 tons new)	215-10 (also 218.8 ft.)	40-6 (also 41 ft.)	27	Stated capacity, 2,800 tons weight and measurement cargo in California trade. Carried 2,200 short tons of wheat. In 1890, cut down to a towing barge (when thirty-six and a half years old).

The *Governor Morton* was a three-decked ship built to carry emigrants westward across the Atlantic. When she was ready for sea, the great demand for tonnage to California, with the high freight rates prevailing, caused Handy & Everett to divert the ship to the Cape Horn run, and she made three round voyages in this service before being taken off in 1856, during the commercial depression, to engage for several years in general business on the Seven Seas. The following is a comparative record of the sailing performance of the *Governor Morton* covering her three westward Cape Horn passages, negotiated during the clipper ship decade 1850-1860:

Voyage No.	No. of Westward Passage to California	Captain	Departure from New York	Arrival at San Francisco	Length of Passage in Days: Elapsed	Length of Passage in Days: As Reported	Remarks
1	1	Burgess	Mar. 11, 1852	July 15, 1852	126	125	Light winds throughout the passage. At Pacific equator 92 days out, and 33 days' run from line to Golden Gate. SEA SERPENT, sailing Mar. 9, made passage of 112 days, and INO, sailing Mar. 18, made run in 111 sailing days via Rio (116 days).
2	2	Burgess	Feb. 8, 1853	June 11, 1853	123	123	Lost two topmasts and jib boom in South Pacific; was 15 days getting re-rigged and 50 days thence to San Francisco in light winds; yet NORTHERN CROWN and GOLDEN STATE, sailing from New York the same day, made passages of 156 and 154 days, respectively, port to port. (GOLDEN STATE was at Rio 21 days for repairs.)
4	3	Burgess	Dec. 15, 1854	Apr. 2, 1855	108	104	The vessel's fastest all-time westward Cape Horn run. Ran from Sandy Hook to line (3,664 miles) in 20 days 11 hours; was 45 days to Horn, 12 days off Cape Horn, and 46 days from 50° S. Pacific to destination. The CHARMER, sailing from Boston the same day (Dec. 15), made a reported passage of 114 days (118 days' elapsed time).

Average of three westward Cape Horn passages, 119 days' elapsed time.
Average of three westward Cape Horn passages, 117⅓ days as reported.

The *Governor Morton,* on the return leg of her maiden voyage, experienced much heavy weather and had her bowsprit sprung, but ran from San Francisco to New York in 103 days. During her third voyage (her only complete one in the transatlantic service), the "*Morton*" ran from Liverpool to New York, with 400 passengers aboard, in 23 days. After her 1854-1855 California voyage, the ship made two British-Australian passages, running out from London to Melbourne in 91 days (1856-1857) and from London to Sydney in 107 days (1857-1858). In 1856 the *Governor Morton,* with Capt. John Charles Berry in command, set up a new sailing record between Melbourne and Callao. The ship anchored at the Peruvian port at 7:00 P.M., November 19, and Captain Berry's log reads: "Made my passage in 31½ days and think according to Lieut. Maury's sailing directions I made the quickest passage that was ever made from Australia to this port under canvas."

Following the two round voyages of the *Governor Morton* in the British-Australian trade, the ship's next passage was from New York to China, thence to Havana with coolies and back to New York. In 1861 the *Governor Morton* was returned to the California trade, making ten more voyages in that service. On two of her thirteen all-time westward Cape Horn passages, the ship was obliged to put into ports en route for repairs, and on two other runs she was unlucky in encountering continuous adverse conditions of wind and sea, making a normal passage impossible. Of the other nine voyages as reported, the shortest (already mentioned) was 104 days in 1854-1855, the longest 133 days in 1873, and the average 121⅔ days. In 1862 the *"Morton"* developed a bad leak when in the vicinity of the Falkland Islands and put back to Montevideo, where her cargo was discharged and the ship detained about three months for repairs. Resuming this passage, the *"Morton"* had a wretched time off the Horn. All head sails were carried away, the bow badly damaged, and two men lost overboard; she finally reached San Francisco 279 days from New York and 104 days from Montevideo, and necessary repairs were made at a reported cost of $27,500. In 1868 the *Governor Morton,* on a run to San Francisco, was again severely damaged by the elements and put back to Rio de Janeiro for repairs, which occupied 28 days and cost $7,000. It is said that sometime during the sixties "the *Governor Morton* was rebuilt at New Bedford at a cost of $30,000." It is apparent that the *"Morton"* was an unfortunate vessel in encountering severe conditions of wind and sea or her Somerset, Mass., builder was at fault in her construction. However, it was said of her, "She is a fast sailer, but unlucky in getting into mishaps and running into bad weather." In 1859 she was ashore on a reef when running from Havana to New York, and on March 16, 1861, while bound from London to New York, she collided with an unknown vessel off the British Isles and sustained considerable damage just after having lost her crossjack yard and some sails.

In 1875 the *Governor Morton* made her thirteenth and last westward Cape Horn passage to California, and it was certainly an unlucky one as well as her longest at sea in this service. Whereas she suffered no major injuries, was at no time in distress, and did not have to make any port en route for repairs, the passage occupied 175 days. The ship experienced either light winds or gales in the Atlantic, was in heavy weather and southwesterly (head) gales all the time when rounding the Horn, and after passing Lat. 45° S. in the Pacific she had nothing but light winds, baffling airs and calms all the way to the Golden Gate. It was said, "For 51 days we did not take in a single sail."

In 1867 the *Governor Morton* "raced" from New York to San Francisco with the medium clipper *Prima Donna* of 1,529 tons, built by Greenman & Company, Mystic, Conn., in 1858 for John A. McGaw, New York. The ships were towed out from New York on February 14 in company; both made sail simultaneously, crossed the Atlantic equator the same day, passed through the Straits of Le Maire and were off the Horn at the same time. They arrived at the Golden Gate on the same day (June 17, 1867), 123 days out from New York, the *Governor Morton* entering San Francisco Bay three hours ahead of the *Prima Donna*—an insignificant difference in sailing time (about one-tenth of one per cent) over a course of more than sixteen thousand miles requiring over four months, or some 2,960 hours, to negotiate.

In 1870 the *"Morton"* ran up the Pacific from 50° S. to the Golden Gate in 42 days and on her next passage, over the identical course, required 72 days to cover the distance, the difference being due entirely to the trade winds or lack of them. In 1874 the ship made splendid time in the Northern Hemisphere (i.e., 42 days—22 days from Sandy Hook to the Atlantic equator and 20 days from the line in the Pacific to the Golden Gate), but required 76 days in the Southern Hemisphere, mostly in light winds and calms.

Including the return passage of her maiden voyage, the *Governor Morton* made four passages eastward around Cape Horn to New York in 103, 115, 107, and 105 days, respectively (an average of 107½ days), and four to Britain in 130, 136, 117, and 117 days, respectively (an average of 125 days). Two were made east via Callao and one via Honolulu and Phoenix Island (these three being guano passages on the last leg), and two continued westward around the world by way of Calcutta, one ending at London.

In June 1872, when the *Governor Morton* was 61 days out from San Francisco on a passage to Liverpool, Capt. John A. Burgess, of Somerset, Mass. (under whose supervision the *Gov-*

ernor Morton had been built by Hood in the local shipyard), was lost overboard in a severe squall. This was another illustration of the bad luck that seemed to follow the vessel and at times catch up with her, for Captain Burgess had made his plans to give up the sea and retire at the end of the voyage. About five years later (July 2, 1877), the last stroke of ill-fortune literally hit the ship, and this was in the form of a bolt of lightning, which struck the cotton-laden vessel when she was anchored at the South West Pass, Mississippi, at the commencement of a voyage to Grimsby, England. The ship was scuttled and burned to the water's edge. She was abandoned to the underwriters and sold as she lay for $2,500; the vessel and her cargo of cotton and staves were valued at $250,000. When lost, the *Governor Morton* was twenty-five years seven months old, Captain Davis was in command, and her owners of record were Burling & Davis, of New York.

The historic medium clipper packet *David Crockett,* built at Mystic, Conn., in 1853 for Handy & Everett (also reported as Everett and Brown), North Atlantic shipping operators, had a career so intimately connected, in a competitive sense, with that of the clipper ship *Young America* during some three decades in the California Cape Horn run that the "*Crockett*" and her sailing performances are described elsewhere and set forth in connection with and in relation to the outstanding exploits of "Webb's masterpiece" and "New York's finest clipper and greatest sailing vessel." The *David Crockett* was launched at Mystic, Conn., twelve days after the famous transatlantic "clipper packet" *Dreadnought* was put in the water from the yard of Currier & Townsend at Newburyport, Mass., and the two ships, it has been authoritatively said, "were of similar type," which is true to a degree, but the "*Crockett*" was more of a clipper and less of a packet than the *Dreadnought* and more suitable for the California than the Atlantic trade. Howe and Matthews say: "The model of the *Crockett* proved to be one of the most successful combinations of speed and cargo capacity, and in this respect connoisseurs of marine matters regarded her as almost perfect." The vessel was over three years old before she was transferred from the transatlantic to the California trade "where she rightly belonged," but prior to her loading at New York in March 1857 for San Francisco, the "*Crockett*" had not been steadily used as a Western Ocean packet or regular trader, for in 1855 she made a round voyage in the Liverpool-Aden-Bombay-Liverpool service. While engaged in the Atlantic trade, the *David Crockett* sailed well but not spectacularly, her fastest voyage being 19 days from New York to Liverpool and 25 days back to New York, both crossings being made in far from record time, but the total number of days at sea during one complete voyage (44) was excellent and compares favorably with the best performances of the *Dreadnought.* After the *David Crockett's* magnificent record as a Cape Horner and as a worthy competitor of the *Young America* in the California trade for some twenty-seven years (1857-1883), she was again operated in the Atlantic trade, latterly rigged as a bark, but in May 1890, when thirty-six and a half years old, was sold for conversion into a barge. The *David Crockett* operated about nine years in all in the transatlantic trade under canvas and ended her days carrying coal between United States Atlantic ports behind a steam tug.

Thomas J. Handy, of New York, also owned for a few years (until 1855) the two following small, yacht-like clippers built by R. & E. Bell, Baltimore:

Name of Clipper	Year Built	Tonnage	Dimensions in Feet and Inches: Length	Beam	Depth	Remarks
SEAMAN	1850 (launched Sept. 7)	546	136	23-10	15	On Feb. 6, 1855, on passage New Orleans to Marseilles, in Lat. 36° N., Long. 63° W., struck by lightning and burned to water's edge. Officers and crew rescued by brig MARION.
SEAMAN'S BRIDE	1851 (launched June 25)	668	152	31	19	On Mar. 13, 1855, sailed from New York to Hamburg (26-day passage); sold to Germans and renamed CARL STAEGOMAN.

These little ships were the antithesis of sturdy, seaworthy, and somewhat burdensome, strongly sparred and moderately canvased transatlantic sailing packets. The *Seaman's Bride* was conspicuous in her rig, for she carried three moon sails. Both were looked upon as very fast sailers, well suited for illegitimate Chinese and tropical trade, but too fragile for the Cape Horn or Australian run and without sufficient freight-carrying capacity—both in deadweight and volume—to permit them "to pay their way" in any normal deep-sea trade. The *Seaman's Bride,* on her maiden voyage, had her foremast carried away off the Horn, when 70 days out from Sandy Hook, and she had to put into Valparaiso for repairs, which occupied 33 days.

Packets and Clippers Owned by R. L. Taylor and Associates

Taylor & Rich ran a New York-Liverpool so-called line of packets for several years, and the *Jacob A. Westervelt* of 1,400 tons was put in this service in 1849. In May of 1852, this ship made a fast eastbound crossing reported as 14 days and 12 hours. Around mid-century, William H. Webb, of New York, built the following ships for R. L. Taylor and Taylor & Merrill, operators in the North Atlantic trade:

Name of Ship	Registered Owner	Type	Year Built	Tonnage	Dimensions		
					Length	Beam	Depth
					Feet	*Feet*	*Feet*
MARMION	R. L. Taylor	General trader	1846	903	165	39	22
GUY MANNERING	R. L. Taylor	General trader	1849	1,418	190	39.7	28.9
GAZELLE	Taylor & Merrill	Clipper packet	1851	1,244	182	38.2	21

The *Guy Mannering* (1,418 tons) was built by W. H. Webb for Taylor at the same time as he constructed the Blue Swallowtail New York-Liverpool liner *Albert Gallatin* (1,435 tons) for Grinnell; both were transatlantic packet ships launched in 1849, and it was said that although the dimensions and appearance of the ships were slightly different, their underwater bodies, or models, were identical. The *Guy Mannering* was claimed by her builder and owners to be "the first full three-decked merchant vessel built in the United States." She was a Western Ocean packet type of ship in every sense of the word, but because of the way she was operated, can be technically described as only a transatlantic general trader. The ship had the reputation of being a good carrier and at times showed surprising speed; two eastbound crossings from land to land of under ten days were claimed by her command.

Taylor and Merrill were sailing packet shipowners and operators. The *Gazelle,* however, was no sailing packet of the transatlantic type but an extreme and yacht-like-modeled ship of great deadrise. She was built with a weak midship section at the insistence of Robert L. Taylor, one of her owners, over the protests of her builder, William H. Webb. The model of the *Gazelle,* not adapted for North Atlantic service, was more suitable for the China than the California trade, for she had lines to make a fast ship in the tropics and was ideal for "ghosting along" in the doldrums and mid-globe calm belts. For such trade, she was big, being of 1,244 tons register, and although practically the same size as the *Surprise* (1,261 tons) and of substantially the same dimensions, she could not be compared in sailing ability on any trade route with that splendid Pook-designed clipper (with a moderate 30-inch deadrise), which was launched at Boston for New York owners (A. A. Low & Bro.) on October 5, 1850, or 108 days before the *Gazelle* (launched January 21, 1851), and was the first clipper ship designed by Samuel H. Pook and the first real clipper ship built in New England.

The *Gazelle* made four westward passages from New York to San Francisco during the period March 4, 1851-September 27, 1854, in 135, 136, 119, and 114 days, respectively; the average length of the runs was 126 days. In the Pacific, Indian Ocean, and on the Cape of Good Hope run home, the *Gazelle* did better. She ran from San Francisco to Hong Kong in 44, 39, and 43 days, respectively, and was dismasted in a typhoon on her fourth run when 35 days out and 1,500 miles from destination. Her three passages from Hong Kong to New York made with the favorable monsoon in the China Seas were reported as 98, 99, and 91 days, respectively, an average of 96 days for three consecutive passages, which was excellent sailing. On her last passage under the American flag, the *Gazelle* left San Francisco October 14, 1854. On November 19, in Lat. 21° N., Long. 141° E., she was struck by a typhoon and thrown on her beam ends; the mainmast broke off near the deck, and the mizzenmast went overboard, later followed by the foremast and the bowsprit. The ship righted slowly, with ten feet of water in the hold, and 16 out of 189 Chinese passengers carried in the 'tween decks were drowned. The *Gazelle* reached Hong Kong in tow on December 4, 1854 (51 days out from San Francisco), and was described as "a complete wreck," but the pumps had evidently cleared the ship of water. She was turned over to the underwriters, condemned and sold for $13,500, and then repaired and renamed *Cora.* In 1857-1858, the ship was owned by the Peruvians and was in the Chinese coolie trade. In the early sixties, she was a British ship named *Harry Puddemsey,* owned by E. Bates & Company, Liverpool.

In addition to the *Gazelle,* Robert L. Taylor et al., New York, had the following two clipper ships built to their order:

Name of Ship	Designated Type	Built	Builder	Tonnage	Dimensions in Feet and Inches: Length	Beam	Depth	Remarks
RED ROVER	Clipper	1852 (launched Nov.)	Fernald & Pettigrew, Portsmouth, N. H.	1,021	172	36	23	In 1861 sold to James Baines & Co., Liverpool, for Australian trade. Wrecked near Brisbane May 31, 1872.
GOOD HOPE	Medium, or half, clipper	1855	J. O. Curtis, Medford, Mass.	1,295	187	38	23	Sold to Geo. F. Burritt and, later, to E. E. Morgan's Sons. Condemned at Bahia June 1873. Went under Swedish flag. Lost near Quebec 1881.

The *Red Rover* was evidently built by Taylor for the California trade, although he announced that the ship was "a clipper packet suitable for the Atlantic, Cape Horn, Australian, India, or China trades." From December 18, 1852, the date of the sailing of the ship from New York on her maiden voyage, to her arrival at London on February 4, 1858, from San Francisco via Iquique, she made five consecutive complete Cape Horn voyages, with westward passages averaging 116 days as reported (best, 108 days; slowest, 123 days). The following is a comparative record of the five Cape Horn passages of the *Red Rover* between New York and San Francisco during the period December 18, 1852-July 4, 1857:

Outbound Passage of Voyage No.	Captain	Departure from New York	Arrival at San Francisco	Length of Passage in Days		Remarks
				Elapsed Time	As Reported	
1	Putnam	Dec. 18, 1852	Apr. 19, 1853	122	117	Partially dismasted 36 days out. Put into Juan Fernandez for 2 days (reported for water). Off the Horn 19 days. Ran from Pacific equator to San Francisco in 19 days and was off Golden Gate for 3 days in heavy gales.
2	Putnam	Jan. 22, 1854	May 24, 1854	122	120	Ran from Sandy Hook to Atlantic equator in 22 days. Off the Horn 19 days. Was 98 days to Pacific equator and ran to destination in 24 days, experiencing heavy gales off the California coast.
3	Logan	Feb. 24, 1855	June 13, 1855	109	108	Ran from Sandy Hook to Atlantic equator in 20 days. Was 48 days to 50° S. Atlantic, 8 days rounding Cape Horn (50° S. Atlantic-50° S. Pacific). Was 80 days to Pacific equator and on 92nd day was 900 miles from the Golden Gate, when the ship ran into light airs and calms.
4	Logan	Dec. 17, 1855	Apr. 7, 1856	112	112	When 3 days out, thrown on beam ends in heavy gale. Ran from Sandy Hook to Atlantic equator in 27 days. Was 50 days to 50° S. Atlantic, 13 days rounding the Horn; was 89 days to Pacific equator and 23 days from the line to San Francisco.
5	Logan	Feb. 28, 1857	July 4, 1857	126	123	Was at 50° S. Pacific when 60 days out. Crossed Pacific equator on 98th day, being 38 days running 50° Lat. in S. Pacific. Was becalmed for 7 days off the California coast.

Average length of five westward Cape Horn passages as reported—116 days.
Average length of five westward Cape Horn passages—elapsed time—118⅕ days.

While at the dock in New York and preparing to load for a second voyage to California, the *Red Rover* was damaged to some extent by the fire that started about midnight on December 26, 1853, at the Novelty Baking Company (242 Front Street) and virtually destroyed Donald McKay's 4,555-ton leviathan *Great Republic* before she had been given a chance to move under her own canvas. The following is a synopsis of the return, or eastward, passages of the *Red Rover's* five California voyages:

Voyage No.	Course	Length of Passage between Ports
1	San Francisco to New York via Callao, Peru	San Francisco to Callao, 43 days; Callao to New York, 70 days; arriving at New York November 17, 1853.
2	San Francisco to New York via Callao and Hampton Roads	San Francisco to Callao, 44 days; Callao to New York, 84 days via Hampton Roads (where she called for orders), arriving at New York December 9, 1854.
3	San Francisco to New York	A direct eastward Cape Horn passage from San Francisco to New York, 98 days, arriving at New York October 21, 1855.
4	San Francisco to Havre, France, via Callao	A guano passage, same as Voyages 1 and 2, but this time delivering cargo to Havre and crossing Atlantic to New York in ballast.
5	San Francisco to London, England, via Valparaiso and Iquique, Chile	San Francisco to Valparaiso, 52 days; Iquique to London, 65 days. Got adrift and stranded off entrance to East India dock and was run into by a German steamer, necessitating going into Victoria dry dock for repairs.

The sixth voyage of the *Red Rover* began with a passage from London to Victoria, B. C. (her sixth westward rounding of Cape Horn), thence to Hong Kong with Canadian lumber, followed by a round trip between Hong Kong and Melbourne, during the return portion of which she transported returning Chinese coolies and made a fast run of 40 days; the ship then loaded for Victoria, B. C., and proceeded from there to San Francisco in ballast, arriving at that port on May 27, 1860. Continuing, the *Red Rover* went to Baker's Island, loaded 950 tons of guano, and reached Hampton Roads December 5, 1860, after a slow passage of 99 days. After being overhauled and fitted with new masts at New York, the vessel was sold to James Baines & Company and the Liverpool-Australia Black Ball Line for $25,000 and renamed *Young Australia.* She was wrecked on Moreton Island May 31, 1872, four and a half hours after leaving her anchorage at Brisbane, homeward bound. All the passengers and crew were got off safely, but in a week's time the hull of the vessel had broken in two.

The reputed clipper ship *Good Hope,* built in 1855 at Medford, Mass., for R. L. Taylor and associates, New York, was a relatively full-bodied vessel, moderately sparred and canvased and more of the packet than the clipper type. She was sold to George F. Burritt, of New York, and resold by him to E. E. Morgan's Sons, of New York. In June 1873, she was turned over to the underwriters at Bahia, condemned and ordered sold. After repairs, she appeared as the Swedish ship *Solide* and at one time was named *Frederick Hasselman.* It is said that the career of the ship came to an end in 1881, when she was lost on the St. Lawrence River near Quebec at the age of twenty-six years.

Robert L. Taylor was reported as being a part owner with Daniel C. Bacon, of Boston, in the clipper ship *Game Cock* of 1,392 tons, launched by Samuel Hall, East Boston, December 21, 1850. Whether or not Taylor held an interest in the *Game Cock* during that ship's early years, it is evident that Robert L. Taylor et al., New York, were the registered owners of the vessel in the seventies, and in the sixties Taylor and his New York associates purchased the historic Cape Horner *Young America* from "Abram Bell's Sons" (original owner of the ship was George B. Daniels, New York). Howe and Matthews state that the *Game Cock* "was sold to Robert L. Taylor and others, of New York, who were at that time owners of the celebrated clipper *Young America.*" The *Game Cock* was condemned at the Cape of Good Hope in February 1880; whereas the *Young America,* during most of the seventies, was owned by George Howes & Company, of New York and San Francisco.

Augustus Zerega's Transatlantic Fleet

Augustus Zerega, or Zerega & Company, of New York, specializing in immigrant business, ran a pseudo-line of sailing packets between New York and Liverpool around mid-century, and Donald McKay, of Boston, built the following "fast general traders" and so-called "medium clipper packets" for this transatlantic service:

Name of Ship	Year Built	Registered Tonnage	Dimensions in Feet: Length on Deck	Beam	Depth
A Z	1847	700	144	33½	20½
L Z	1848	897	163	35	21
ANTARCTIC	1850	1,115	180	38	23½
BALTIC	1856	1,327	196	39	23
ADRIATIC	1856	1,372	200	39	23

The first three ships were described by the builder and owners as "packets," the last two as "medium clipper packets."

During the clipper shipbuilding boom, Seccomb & Taylor, of Boston, entered into contracts with builders for the construction of ships that, evidently, it was not the intention of this firm to operate. One of these vessels was the *Queen of Clippers,* a large ship of 2,361 tons register (245 ft. length on deck, 44½ ft. beam, and 24½ ft. depth), built by Robert E. Jackson, East Boston, Mass., which was sold after she was launched (March 26, 1853) to Zerega & Company and D. Fowler, New York, for $135,000, or somewhat over $57 per ton. Capt. John Augustus Zerega, formerly of the packet ship *Arctic,* took command, and after one unprofitable voyage in the California trade, the *Queen of Clippers* entered the Atlantic service. She was chartered by the French Government and used as a transport in the Mediterranean during the Crimean War and in 1856 was sold to the French for the reported low price of 150,000 francs. The ship was renamed *Reina des Clippers,* with Marseilles the hailing port, and Aquarora & Company the owners of record.

During the fifties, or when the old established and regular packet lines were reduced to the carrying of immigrants and heavy freight, there was perhaps not a great deal of difference between their operation and that of the Williams & Guion, Taylor & Rich, Taylor & Merrill, Frost & Hicks, and Zerega New York "lines" of general traders, whose sailings were more dependent on "pay load" than on the calendar.

Whitlock's Clipper Packets

William Whitlock, Jr., of New York, was interested in sailing packet lines from the early twenties and made the first sailing of the *Cadmus* (306 tons) in the New York-Havre Whitlock Line in 1823. He was also one of the pioneers in the New York-Savannah packet line, which commenced weekly sailings between the ports in early 1824. Whitlock, who was unique in being the sole owner and operator of several packet ships, came from a New Jersey family and was the son of a sea captain. Joseph A. Scoville says that the first business ventures of Whitlock soured him against partnerships and that he played a lone hand. "Even in ship-owning he preferred to hold an undivided interest if he could. If there was a loss, he could stand it, and if a profit, he did not wish to divide it with anybody." In his early life, Whitlock spent some time in Georgia as a cotton factor, and this experience really got him interested in ships for transporting cotton from Georgia to New York and to markets in continental Europe. In the thirties, Whitlock owned a few Havre packets outright, operated them in his own name, but ran them for some time in conjunction with James J. Boyd's Havre Second Line and later with the "Fox & Livingston line." Samuel M. Fox and Mortimer Livingston, sons-in-law of Francis Depau, took over the Havre Old Line, which had been founded by Depau in 1822, upon the latter's death early in 1830. Later, the Havre Old Line and the Whitlock Line were joined and operated as the Havre Union Line. Scoville has also written:

> Mr. Whitlock made a mint of money in his share of the line. He did not confine his ship-owning to this line. Whenever he could buy a ship, he did so and placed her in the general freighting business. This was also profitable to him, and he coined money in it, when others would have lost. . . . Mr. Whitlock was one of the independent shipowners who, when freights were dull, had capital to invest in cargoes, so as to load ships quickly. He was always fortunate in such purchases and not only made good freights for his ships but also a good percentage on the investments.

William Whitlock, Jr., aside from his ownership of transatlantic and coastwise packets, owned one extreme clipper and one more full-bodied, or medium, clipper during the clipper ship era. Both were constructed by George ("Deacon") Thomas, the first at Rockland, Maine, in 1852 (launched October 15) and the second, and last (a medium clipper packet), at Quincy, Mass., in 1855. The following are the dimensions and particulars of the two Whitlock-owned clippers:

Name of Ship	Type	Year Built	Tonnage	Dimensions in Feet and Inches: Length	Beam	Depth	Remarks
RATTLER	Extreme clipper	1852	1,121	192	35-1	21	Bought after launching by Wm. Whitlock, Jr., for $66,000. Sold in 1873. Broken up in 1890 when thirty-eight years old.
LOGAN	Medium, or half, clipper	1855	1,541½	207	40	26-7	A medium clipper packet ship for emigrant trade in North Atlantic, etc.

There was surprise in shipping circles when the conservative William Whitlock, Jr., bought the newly launched extreme clipper ship *Rattler,* which was described as "sharp as a razor." The ship was very well built, and Whitlock, buying "on spec" when the demand for speedy floating tonnage was great, paid a scant $60 per ton for "a sharp-lined ship built to carry passengers and suitable for any trade." Within a year, he had several chances to sell her and make about $10,000 net profit on the transaction (on the ship alone and excluding profits from operations), but he refused to do so. Whitlock sent the *Rattler* out to California from New York January 8, 1853, on her maiden voyage, and she made a passage of 121 days, being off the Cape for 20 days in heavy gales and delayed by light winds over the balance of the course. Returning, she sailed from San Francisco to Valparaiso and thence to Boston in 72 days, arriving February 20, 1854; she experienced nothing but light winds and was actually becalmed for two days near Cape Horn. The *Rattler* was then put on the New York-Havre run as a regular packet of the Union Line. She sailed from New York in this service March 27, 1854, and from then until August 14, 1855, completed four round voyages, of which the fastest eastward was reported as 18 days and the fastest westward as 26 days. In the fall of 1855, the ship, while at Havre, was chartered by the French Government as a transport to take troops from Marseilles to the Crimea. The *Rattler* was back in New York April 16, 1856 (32 days from Havre), and resumed service as a regular Havre packet until early in 1858, when she was again put up for California. She sailed on her second westward passage on March 9, 1858. The following is a comparative record of the three Cape Horn runs from New York to San Francisco made by the *Rattler* during the clipper ship decade:

No. of Westward Passage to California	Captain	Departure from New York	Arrival at San Francisco	Length of Passage in Days: Elapsed	As Reported	Remarks
1	Brown	Jan. 8, 1853	May 9, 1853	121	121	Off Cape Horn 20 days in heavy gales. Unfavorable sailing conditions elsewhere.
2	Almy	Mar. 9, 1858	July 3, 1858	116	115	Generally light winds; 59 days to Cape Horn. Only 7 days from 50° S. Atlantic to 50° S. Pacific—a record at the time and beaten only once (YOUNG AMERICA, 6 days).
3	Almy	Mar. 21, 1859	Aug. 30, 1859	162	160	Adverse weather conditions all the way. Sandy Hook to Atlantic equator, 30 days. Did not clear Cape Horn until 96th day.

On the second of these Cape Horn voyages, the *Rattler* returned from San Francisco to New York in 112 days. The return passage of the third voyage was to New York via the West Coast of Mexico, where she loaded dyewoods at Ypala; she reached New York June 4, 1860.

The *Rattler* again entered the transatlantic trade as a packet and, after a voyage from New York to Liverpool and return, became regularly employed once more as a Havre packet. On May 17, 1862, she sailed from New York for California and the Orient; she made a slow passage of 138 days to San Francisco, experiencing very bad weather, crossed the Pacific to Hong Kong in 49 sailing days, proceeded to Manila, and thence made a good passage of 100 days to Boston. On the next voyage, the vessel was 119 days from Boston to San Francisco and returned to New York via Manila. Following this, there were two around-the-world passages to the westward via California, Hong Kong, and around the Cape of Good Hope. On the first of these, the *Rattler* was 500 miles from the Golden Gate in 113 days, but light and baffling airs lengthened the passage to 130 days. On the second, she ran out in 114 days and, after loading and putting $800,000 treasure aboard, sailed for Hong Kong; she went ashore in a typhoon near her destination, but was refloated with but little damage. After returning to New York and following needed repairs, the *Rattler* loaded railroad iron and ran out to San Francisco on her last Cape Horn passage in 133 days. She arrived at the California port on January 11, 1869, in company with the clipper ship *Fearless* (1,184 tons), which was 161 days from New York. Continuing, the *Rattler* went from San Francisco to Manila in 51 days and operated for some time between China, Manila, and Australia. On January 27, 1872, she arrived at Melbourne after a good run of 83 days from New York—one of the fastest passages made in this trade for several years. The *Rattler* was sold in 1873 and henceforth was operated entirely in the Pacific. In 1874 she was the *Terecina Ferreira* of Nicaragua and later the Costa Rican ship *Martha*. In 1878, when twenty-six years old and under the Costa Rican flag, she made the all-time record run, when deep-laden with sugar, of only 28 days from Callao to the Golden Gate, beating by over two days the next fastest time made over this course and that by a ship in ballast. In November 1889, when the vessel put into San Francisco in distress (while bound to Australia with lumber from Puget Sound), she was the British bark *Martha,* hailing from Shanghai. The ship was over thirty-seven years old when she was condemned at San Francisco and sold to the Johnson Wrecking Company.

Whereas the *Rattler* made an occasional fast run and proved that she was a good sailer, she was remarkably unfortunate in regard to weather and consistently encountered unfavorable sailing conditions. The average length of her eight westward Cape Horn passages was 128¾ days, and her transatlantic passages in the packet service were not outstanding, although it can be said that she did make better than average voyages. Her owners claimed for her an unusual freedom from accidents and their accompanying delays and expense bills, and she was operated steadily—and it was said profitably—until her end.

Boyd & Hincken, another firm of New York-Havre packet ship operators, ventured mildly into the clipper ship field and built the medium clipper packet *Mercury* at Westervelt & Mackey's New York yard in 1851. This ship of 1,351 tons was 193 ft. 6 in. long, 38 ft. 10 in. beam, and 22 ft. 2 in. deep and was designed and constructed for the Boyd & Hincken line of Havre packets (the Second Line). Special consideration was given to the carrying of emigrants on the westbound voyage, as Havre was the prime port of embarkation for emigrants crossing to the United States from most of the countries of continental Europe. The record of the *Mercury* in the transatlantic trade is given elsewhere. Fastest and largest of the Second Line packets, she ran in the Havre service until 1869. Available records do not show that she ever made a passage in the California Cape Horn trade. In the recorded list of the *Mercury's* "fractional" owners are included John J. Boyd, Edward Hincken, Jacob A. Westervelt, Robert Carnley, and Capt. Richard D. Conn.

Another medium clipper ship that was first operated as a packet in the New York-Havre service was the *Electric* of 1,046 tons, built by Irons & Grinnell, Mystic, Conn., in 1853 (launched September 5). She was owned first by G. Adams and later by the Gerry family of New York. Outside of one Cape Horn passage to California (1854-1855), which continued as a voyage around the world via San Francisco and Hong Kong, the *Electric* was in the American transatlantic packet service until, in 1860, she was sold to the Germans, who for many years operated her as a packet between Hamburg and New York. American Lloyd's Register of 1860 records her owner as R. M. Sloman; hailing port, Hamburg; tonnage, 1,274 tons.

On the voyage around the world, the *Electric* performed creditably. The passage from New York to San Francisco was made in 107 days to pilot off the Farallones and 109 days, port to port, notwithstanding a slow run of 34½ days to the Atlantic equator. (This Cape Horn run is also recorded as a passage of 116 days from date of clearance.) The *Electric* ran from New York to the Cape in 57½ days, from the Cape to the Farallones in 49 days, and from the line in the Atlantic to the line in the Pacific in 56 days. Other clipper ship sailings from an East Coast United States port to San Francisco about this time were made by the *Flyaway* (1,274 tons) in 109 days, the *Cleopatra* (1,562 tons) in 110 days, the *Phantom* (1,174 tons) in 120 days, and the *Morning Light II* (938 tons) in 121 days. Leaving San Francisco on March 24, 1855, the *Electric* crossed the Pacific to Hong Kong in 48 days. She sailed from Shanghai to New York, on the last lap of the voyage, in 106 days. In 1868, the *Electric* left Hamburg for New York on November 2 with 350 passengers and a good general cargo aboard and went ashore at Great Egg Harbor, New Jersey. There was no loss of life. The cargo was lightered and the ship floated and towed to New York for necessary repairs. On November 7, 1872, when nineteen years old, the ship was abandoned in the North Atlantic when about to founder during a passage from Hamburg to New York, and all who were on board were landed at Queenstown by the *Helmesbrand*.

The Tapscott Transatlantic Operators Acquire Clipper Packets

The W. & J. T. Tapscott line of Liverpool and New York packets was the owner of the fast medium clipper sailing packet *Emerald Isle,* built by Trufant & Drummond, Bath, Maine, in 1853. This ship, a three-decker and drawing 22 ft. of water loaded, especially constructed for the transatlantic emigrant trade, was of 1,736 tons (length 215 ft., beam 41 ft. 8 in.), and her builders designated her as "a half clipper in model and a packet-clipper in rig." William Tapscott & Company, Liverpool, also acquired in 1863, through an auction sale in New York, the medium clipper ship *Atmosphere* of 1,485½ tons (length 190 ft., beam 41 ft., depth 22 ft. 8 in.), built by George Greenman at Mystic, Conn., in 1856 for John A. McGaw, of New York. The *Atmosphere* was not a lucky ship. She was partially dismasted and forced to return to port in January 1858, went ashore near Calcutta in November 1860, and was in collision with an iron vessel at Bombay in June 1861; she was badly battered by a hurricane in the North Atlantic in 1864 and had to put back to Liverpool, discharge her cargo, and go into dry dock for repairs. She was forced to put into Queenstown in June 1869, short of provisions and with most of her crew sick, and was finally lost off Pernambuco in 1882 (when twenty-six years old), while on a voyage from Liverpool bound for Valparaiso, by collision with the British ship *Thyatira.*

Transatlantic Distances and Passages under Sail Eastbound and Westbound

The mileage of a transatlantic crossing can be considered as fairly standard for a modern steam or motor liner according to the season of the year, for there are well-defined steamer lanes for both the eastward and the westward passages and these lanes vary with the calendar, changes being made based, primarily, on the prevalence of ice and fog. The mileage traveled in a transatlantic run of a sailing vessel is a very different matter, and although the theoretical distance between ports is fixed, the mileage of ocean bottom covered and the distance logged vary greatly. In this respect, there is naturally a great difference between the mileage (1) eastbound going "downhill" or with a prevailing west wind and (2) westbound going "uphill" and against a prevailing west wind.

The shortest sea lanes between the ports used by the New York transatlantic sailing packets in their heyday, stated in nautical miles, are as follows:

New York to Liverpool, England	3,073 miles
New York to Portsmouth, England (the port for London)	3,134 miles
New York to Havre, France	3,163 miles
Average of the three routes	3,123 miles

The Liverpool run shows 50 miles, or 1.6 per cent, less than the average mileage; the Portsmouth run is 11 miles, or 0.3 per cent, more, and the Havre run is 40 miles, or 1.3 per cent, more than the average mileage of the three routes.

Lieut. Matthew Fontaine Maury (1806-1873), "The Pathfinder of the Seas," did much to assist the commands of sailing vessels in making faster passages based on the accumulated, organized and graphically portrayed experiences of others. Maury demonstrated that the average length of thousands of transatlantic crossings negotiated by square-rigged sailing vessels during the sailing packet era and made during the first nine months of the year was 3,086 nautical miles on the eastbound run from Sandy Hook to Fastnet Rock and 3,483 miles on the westbound run from Fastnet to Sandy Hook. This stated difference of the mileage covered westbound over that eastbound is 397 nautical miles, or about 13 per cent. Fastnet Rock is, moreover, far from a port of destination, it being in about Long. 9° 35′ West of Greenwich and Lat. 51° 23′ North off the southwestern coast of Ireland and some 65 nautical miles oceanward from Queenstown. Lieutenant Maury estimated (for the best nine months of the year) a wastage of mileage of an average sailing vessel between Long Island and the southwestern coast of Ireland of about 328 miles eastbound and about 725 miles westbound—a difference in the two directions of some four hundred miles from land to nearest land and not from the port of departure to the port of destination. The westbound transatlantic sailing packet run from an English port to New York was generally deemed about five hundred miles longer than the passage eastbound. The prevailing wind on the North Atlantic blows from the west, and it was generally believed that about four hundred miles on an average represented the extra mileage due to tacking as a ship tried to beat her way "uphill" against the west wind, with an additional hundred miles or so added to avoid the Gulf Stream. But Dame Luck is always a potent factor to be reckoned with in the performance of a vessel propelled by wind, and whereas the theoretical ship's lane between Sandy Hook and Fastnet Rock is 2,764 nautical miles and Maury averaged a sailing ship's run west at 3,483 miles (which is 719 miles, or 26 per cent, excess of mileage), no skipper commencing a westbound crossing ever knew whether he would cover 10, 25, or 50 per cent or even more in excess mileage before he would bring his vessel safely to the port of destination.

Maury's investigations suggested that there was not a great deal of difference in the length of either the eastward or the westward passage of sailing packets, between Sandy Hook and Fastnet, for the various months of the year. Of the period covered by his surveys, he suggested February as the month of the shortest runs eastbound (2,996 nautical miles) and May as the month of the longest runs eastbound (3,148 miles), this longer distance of 152 miles, or about 5 per cent, being due, primarily, not to winds but to ice fields. On the westbound passage, Maury gave an average distance traveled for January of 3,540 nautical miles, and the worst month he reported as June with 3,723 miles, this longer distance of 183 miles, or a little over 5 per cent, being attributed to "ice fields, fogs, and calm." Maury wrote, "The month of June is a tedious time of the year to be homeward bound" (to the U.S.A.).

The ocean is inconsistent everywhere—even on the North Atlantic. The sailing packet *Erie* (451 tons), bound from Havre to New York, required on one occasion (1837) 82 days to make a winter crossing. When she arrived at Sandy Hook and the owners and interested public expected to hear a story of fierce head gales and turbulent seas, her command, Captain Funk, reported, "For forty days we lay becalmed on the Newfoundland banks." He complained not of gales or damage to spars and sails but "of the too great quiet of the elements." This lengthy crossing of the *Erie* probably alarmed many people on both sides of the Atlantic more than any other of the record long packet runs. LLOYD'S LIST, a believedly conservative British chronicle of the movement and casualties of ships, reported in early January 1838: "The *Erie*, Funk, Havre for New York (packet of 24th Dec.), was totally lost near the former port on the 1st inst. and all on board drowned." French marine authorities questioned the accuracy of this report, but over eleven weeks elapsed after the sailing date before any news was heard of the Havre Second Line packet.

Usually, the Havre sailing packets made slower time than the ships in either the Liverpool or the Portsmouth (for London) run. This is to a great degree attributed to the fact that the Havre packets generally sailed a more southerly course across the ocean and escaped some hard blows, but—in addition to experiencing less wind—had to combat a stronger Gulf Stream and were said to be subject to more fog associated to a degree with a warmer crossing. There is a record of one Havre sailing packet that traveled substantially over 6,000 nautical miles at a low rate of speed before she reached New York. The slowest westbound sailing packet transatlantic passage of record, out of 4,160 recorded by Albion, was the 89-day crossing of the Swallowtail liner *Ashburton* in 1856, which passage commenced on January 9 and was not completed until April 7. This vessel encountered terrific seas and head gales —the sort of weather generally expected in the winter months of the year on the North Atlantic, but to an extreme degree. From November to April, this ocean can be violent, both wind and sea, and yet again a modern steamship very occasionally makes a delightful, placid crossing in any of the five winter months of from mid-November to mid-April. As a general rule, however, December, January, and February are apt to be severe months as far as weather is concerned, with a bad crossing possible in any month.

The time of an Atlantic crossing of interest to passengers and shippers of freight is not from land to land but from port to port. The distance traveled and the associated average speed per hour are not the distance and speed as logged, but the average speed per hour between ports measured over the theoretical distance. A patron, whether a passenger or a shipper of cargo, is not interested in a high average logged speed per hour nor in the time of a vessel from Sandy Hook to Fastnet; he is interested only in the time from port to port, and a long mileage traveled and a high rate of speed logged somewhere between Iceland

and the Azores are not appealing in the least. The important thing is to move forward as direct as possible to the port of destination and get there quickly.

Extreme and record-making voyages for sailing vessels, particularly on the North Atlantic westward run, were largely a matter of luck, and any good packet ably commanded would make excellent time if given the proper kind and force of wind and favorable sailing conditions. The *Charlemagne* (442 tons), built in 1828 by Bergh, of New York, in her ten years of service in the Havre Second and Old lines (1832-1838), averaged 41 days for all her westward crossings, but leaving Havre on March 22, 1830, she ambled along for a week until the winds that favored the *Columbia* and *Caledonia* (which made passages to Sandy Hook of 15 days 18 hours and 15 days 22 hours, respectively) in their crossings from Liverpool to New York caught her off the English southwest coast and drove her also across the Atlantic in about 16 days, permitting her to make her record 23-day westward crossing, which included the time spent in virtual loafing during the first seven or eight days of the passage. When the *Columbia, Caledonia,* and *Charlemagne* made their fast westbound transatlantic crossings in early April 1830 from the Irish Channel and southwestern coast of Britain, they were favored by strong east winds instead of the usual troublesome westerlies. All passages westward at the time were benefited, but eastbound passages were lengthened just as the westbound crossings were shortened, and American coasting packets made abnormally long voyages, having to tack against northeasters. The sailing packet *President* (243 tons) required 15 days for her run at that time from Charleston to New York, a passage which she had made under favorable conditions in 3 days and for which her average time on the northbound run for a period of nine years (1822-1831) was only 5.9 days.

To illustrate the element of luck in sailing, Lieutenant Maury writes:

> I have the records of two vessels which were together in this part of the ocean on their way to Europe; they had kept together so far on their way; they sailed alike; when they arrived here, the wind came out ahead—one went off on the larboard and the other on the starboard tack; the latter arrived in port ten days before the other.

A skipper's judgment and the intelligent capitalizing of his experiences helped much, but with it all Dame Luck is extremely powerful in the making of quick runs and the establishing of records under sail.

The monthly averages (based upon the month of sailing) of the length of both eastbound and westbound passages, port to port, of the Black Ball liners during their first ten years of service (1818-1827 inclusive) were given publicity in 1828, and the comparative figures are as follows:

	—Passages in Days—			—Passages in Days—			—Passages in Days—	
Month	Eastbound	Westbound	Month	Eastbound	Westbound	Month	Eastbound	Westbound
January	24	42	May	24	35	September	25	33
February	24	40	June	25	38	October	24	37
March	23	36	July	24	40	November	22	38
April	24	34	August	23	36	December	24	48

The uniformity of the average length of passages per month eastbound is amazing, for although individual passages ranged from 16 to 37 days in length and were reported as averaging 24 days, with 67 out of 188 recorded passages being made in 21 days or better and 13 of them in 18 days or less and 37 eastbound passages requiring 27 days or more to complete and 18 of them 30 days or longer, the monthly average of all outbound passages varied only from 22 days in November to 25 days in June and September—a difference between the best and worst months of only three days, or some 12 per cent, in time. The spread between the average length of westbound passages for the various months was, of course, much greater than on the eastbound run, but some of the figures are surprising. The December passages show fifteen days (45 per cent) longer on an average than those of September, and December is ten days (26 per cent) above the all-time average; but March shows only 36 days and July 40 days (the same as February), whereas both June and November are average months, i.e., 38 days. It is difficult to believe that over a period of ten years the average length of March packet passages westbound was two days less than the yearly average, less than the average length of the June, July, October, and November crossings, and equal to the passages made in August. The four believedly bad months (December-March inclusive) averaged westbound passages of 41½ days, while the three summer months of June, July, and August averaged 38 days (the average for the whole year), and the five believedly good months (May-September inclusive) averaged 36½ days.

Albion tells us that up to 1848 the worst period for westward transatlantic crossings was during the winter of 1833-1834, and the nineteen packets that sailed for New York from Liverpool or Channel ports between November 13, 1833, and January 9, 1834, averaged 57 days on their passages. The fastest crossing during this period was 44 days, and the slowest —not only for this time but also for the whole first thirty years of transatlantic packet service —was made by the *Hannibal* (440 tons) of the London Red Swallowtail Line, which left Portsmouth (the port for London) on December 3, 1833, and did not arrive at New York until February 24, 1834, after a passage of 83 days. Some writers, primarily because of this one bad passage, have classed the *Hannibal* with the *Erie* as "the slowest of Western Ocean packets," a distinction that is most unjust, for at least three transatlantic packets made longer westbound passages during the years 1818-1858 (even if we ignore the claimed but unverified —and it is believed falsely stated—110-day crossing of the *Switzerland* of 567 tons operating in the London Red Swallowtail service during the nine years 1841-1850). The *Hannibal*, with an average of only 35 days for her westward passages during her seven years of service as a Western Ocean packet, shows up well as far as speed is concerned with other transatlantic liners, for there were twelve packets that showed an average of a week to two weeks longer than the *Hannibal* on their westward crossings. The *Hannibal*, which has been described as "an exceedingly slow part-time packet and part-time tramp," was in fact a successful vessel with a good record. Built in 1822 by Fickett & Crockett, experienced coastal packet builders, of New York, she had a good record as a regular trader and transient for seven years (1822-1829), followed by seven years as a Western Ocean liner (1829-1836) during which she equaled the average sailing record of the fastest packet that ran between New York and London in the line with her (the *Ontario I* of 489 tons) and made one westward crossing of 25 days. For the next seven years (1836-1843), the *Hannibal* was again a general trader or transient, but from 1843 to 1861 (eighteen years) she was a whaler out of New London and in 1855 was the first American vessel to sail to the Spitzbergen Sea. Writing of the slow westbound transatlantic packet crossings in the winter of 1833-1834, Albion says:

> Yet the winter winds could play strange tricks. The following winter there were likewise nineteen sailings between early November and early January, but this time the average run was only thirty-one days [as against 57 days the previous year]. The fastest was twenty days and the slowest forty-two days better time than the speediest of the group the winter before. Yet pretty much the same vessels were performing in both cases.

The following records the names and particulars of the New York transatlantic packets that made the fastest and the slowest westbound passages, port to port, during the forty-year Western Ocean packet era 1818-1858:

Best Performances					Poorest Performances				
Name of Packet	Line	Best Westbound Passage in Days	Tonnage	Year Built	Name of Packet	Line	Slowest Westbound Passage in Days	Tonnage	Year Built
YORKSHIRE	Black Ball, Liverpool	16	996	1843	ASHBURTON	Blue Swallowtail, Liverpool	89	1,015	1842
HARVEST QUEEN	Black Ball, Liverpool	16	1,383	1854	LONDON	Red Swallowtail, London	85	1,145	1848
COLUMBIA I	Red Swallowtail, London	17	492	1821	VICTORIA	Black X, London	84	860	1843
CALEDONIA	Black Ball, Liverpool	17	647	1828	HANNIBAL	Red Swallowtail, London	83	440	1822
NORTHUMBERLAND	Black X, London	17	817	1844	ERIE	Second Line, Havre	82	451	1829
BAYARD	Second Line, Havre	18	339	1819	SWITZERLAND	Red Swallowtail, London	82	567	1836
GARRICK	Dramatic, Liverpool	18	895	1836	FRANCIS DEPAU	Old Line, Havre	79	595	1833
CONSTITUTION	New Line, Liverpool	18	1,327	1846	BALTIMORE	Second Line, Havre	78	658	1837
NEW WORLD	Blue Swallowtail, Liverpool	18	1,404	1846	AMERICAN CONGRESS	Red Swallowtail, London	77	863	1849
WEST POINT	Red Star, Liverpool	18	1,046	1847	NEW YORK II	Black Ball, Liverpool	73	862	1839
PRESIDENT	Black X, London	19	468	1831	SPLENDID	Whitlock (Union), Havre	73	642	1846
WELLINGTON	Red Swallowtail, London	19	726	1837	PACIFIC II	Black Ball, Liverpool	72	586	1824
DEVONSHIRE	Black X, London	19	1,149	1848	CHRISTIANA	Red Swallowtail, London	70	666	1846
SOUTHAMPTON	Black X, London	19	1,299	1849	SOUTH AMERICA	Black Ball, Liverpool	69	605	1832
ISAAC BELL	Old Line, Havre	19	1,072	1851	FLORIDA	Black Ball, Liverpool	68	522	1822

The *Erie,* generally designated as "the slowest of all Western Ocean packets," earned that dubious honor because she made three westward passages each occupying 70 days or over and was the only transatlantic liner with this distinction. Whether she was or was not the slowest of the packets is decidedly questionable, but she certainly was very unlucky as to weather—wind or lack of it and seas—encountered. Moreover, the *Erie* made a westward passage in 24 days, and only 3.3 per cent of the packet crossings made during the years 1818-1857 inclusive was better than this; the crack record holder *Amazon* of 1,771 tons, the largest and fastest of all Western Ocean packets, never made a passage westbound in better time than the little *Erie* of 451 tons, built a quarter of a century before her. The Havre Second Line packet *Erie* averaged 42 days on her westward crossings during a period of eleven years (1829-1840), but there were twelve other regular New York transatlantic packets with averages for westward passages of 42 days or over, as the following record shows:

Name of Packet	Tonnage	Years of Service	Westward Crossings in Days: Average	Westward Crossings in Days: Best
PACIFIC I	384	1818-1819	49	45
ORBIT	384	1822-1824	46	42
MANCHESTER	561	1825-1834	45	28
HENRY	257	1823-1826	44	38
ROBERT FULTON	340	1822-1824	44	37
CHRISTIANA	666	1853-1861	43	30
WILLIAM NELSON	1,039	1856-1863	42	38
ROBERT EDWARDS	355	1827-1830	42	36
FRANCE	411	1827-1837	42	31
MANHATTAN	390	1822-1826	42	31
NESTOR	481	1820-1824	42	27
EDWARD QUESNEL	388	1824-1831	42	27

Any transatlantic sailing vessel (packet, clipper, regular trader, or transient), big or small and normally fast or slow, was at any time on a winter westbound crossing apt to encounter adverse sailing conditions—wind and seas—that would make anything better than a very long crossing of the Western Ocean impossible. Among the first fifteen recorded westbound passages of certain leading packets, the crack sailing packet *Yorkshire* made a record crossing in 16 days and another fast one in 21 days, but one passage occupied 40 days and another 51 days; the speedy *Garrick* and *New World* each made splendid 18-day crossings, but the *Garrick* took 46 days to complete one passage and the *New World* 42 days (later the *Garrick* required 54 days to make a westbound crossing); the fast *South America* made two homeward runs each in 24 days, but one of her first recorded fifteen crossings required 69 days, and the favorite and reliable good sailer *Independence,* which made three crossings in 21, 22, and 24 days, respectively, also made two passages of 44 days each (and later two of 48 and 49 days, respectively). It is of interest to note that "the best and fastest of all the Western Ocean packets"—the Black Ball Liverpool liner *Yorkshire*—made a very slow crossing of 58 days westbound that, together with two other slow lifetime passages, detrimentally affected her wonderful sailing performance record. Dame Luck was and continues conspicuously in evidence at sea, and it would seem that no vessel can escape her. A fine ship and extremely capable command are not enough for speed records; a ship must be lucky as well as great, and sometimes a very ordinary sailing vessel made better speed due to more favorable conditions encountered than a much better and faster vessel in the same service.

When the weather was heavy, the winds unfavorable and of gale force, and the seas high and turbulent, a northern transatlantic crossing took a lot of time, but all long passages were not made in heavy weather; occasionally a lack of wind, coupled with the adverse current of the Gulf Stream and sometimes the influence of fog and ice, would cause a tedious long-time crossing. A marine writer has said that most of the historical records of the Western Ocean "Driving Packet Days" are of fast crossings and of pleasant and favorable conditions and achievements, but he states, "There was another side to the picture—of the small wooden vessels bucking heavy gales and mountainous seas." He continues:

Much has been written of the *Plymouth Rock* that in the seventies took 42 days to make the westbound crossing from Gravesend to Sandy Hook because of "a poor lot of fo'c's'le hands." But this was a fast crossing compared with many made by the speedster clippers in their prime. For instance, take the winter of 1852-1853 and we find the following poor passages associated in some cases with not only appalling but disastrous experiences: *Roscius*, 51 days; *Mary Annah* (from Havre), 88 days; *Lady Franklin*, 65 days and the loss of three of the crew; *Celestial Empire*, 60 days, with the loss of one seaman and ten passengers, due to heavy seas; *Splendid* (from Havre), lost seven passengers; *Patrick Henry* (from London), lost two of her crew; *Antarctic*, put into Hampton Roads after a very severe passage from Liverpool with many injuries aboard from heavy seas and with the added horror of sixty deaths from smallpox.

There was a choice during the winter months between running north over the shorter route, which was not only cold but also generally apt to be severe, or over a southern more circuitous and warmer as well as longer route, where the wind and seas were more kindly. One Havre packet on the southern route reported when in the center of the Gulf Stream, in mid-Atlantic, a temperature of more than 90° for Christmas Day, while, it was said, "the poor devils on the Liverpool packet were probably freezing aloft in trying to make time on the northern [and shorter as well as more boisterous] passage." The log of the packet *Roscius* (1,030 tons) of the Dramatic Liverpool Line on February 11, 1846, during a 54-day westward passage to New York, refers in detail and with vigor to winds of hurricane force, with sleet, snow, and ice. The foresail and fore-topsail could not be furled when desired "owing to the excessive cold weather and the sails and rigging being full of ice and many of the crew having their hands frozen." On the following day, with a violent gale still blowing furiously, the log reads, "Weather extremely cold and the sea running very high during which we carried away all three topgallant masts. Stove in the starboard bulwarks. . . . Everything below and aloft being encumbered with ice rendered it impossible for the men to work the ship." In the spring when the ice broke, the far northern and shortest theoretical route was hazardous, and the ships sailed farther south. One packet skipper reported sailing "eighty miles along an unbroken bank of ice exactly in appearance like low land covered with snow." The ice is known to have sunk one packet *(Liverpool I)*, and another "went missing" after she was last seen heading into ice fields.

An illustration of the bad weather that was apt to be experienced on a North Atlantic winter crossing is the account in the New York press of the 60-day passage of the packet *St. Nicholas* (797 tons) of the Havre Second Line, which reached New York January 21, 1849, having sailed from the French port on November 22, 1848:

The *St. Nicholas* has experienced heavy weather during the passage, hurricanes and strong westerly gales; has been stripped of her canvas three times, blowing the sails from the yards. On 24th Dec. Nathaniel Hastings, seaman, while furling the fore-topsail fell from the yard overboard and was drowned. Three others were also thrown off but saved. On 29th carried away fore yard; was seven days without head sails, the sea being so bad could not replace it; had few sails left to set in consequence of which was driven into the Gulf Stream with heavy N.W. gales; remained there 26 days without being able to get out.

The Gulf Stream flowing east helped vessels on the run to Europe, but was against any vessel making a westward passage. The strength of the current was apt to have a pronounced effect on the length of passage of a sailing vessel that got in and did not get out for some time, although while in the Stream the temperature was warm and pleasing even in midwinter. The smaller the packet the more the western gales and high seas affected and handicapped her in making an "uphill" homebound crossing, but all vessels under sail, no matter what their size, were seriously affected in their sailing performances and in combating the elements when they were called upon to buck a succession of heavy gales and mountainous seas on an icy winter crossing to the westward of the turbulent North Atlantic. The fast packet *Roscius* (1,030 tons) of the New York-Liverpool Dramatic Line, which was the first Atlantic liner built to measure over 1,000 tons, reached New York March 8, 1846, after taking 54 days to cross from Liverpool. The New York press printed the following news of the passage taken from the ship's log:

Feb. 11th—Wind hauld suddenly to NW and blew a hurricane with great violence, accompanied with sleet and snow, stove in the cabin windows, filling the cabin floor with water; hauled up foresail and fore-top sail and made every exertion to furl them, but could not, owing to the excessive cold weather, and the sails and rigging being full of ice, and many of the crew having their hands frozen.

Feb. 12th—Experienced another violent gale blowing furiously, weather extremely cold and the sea running very high, during which we carried away all three top-gallant-masts, stove in the starboard bulwarks in the gangway, letting in the sea constantly on deck. Everything below and aloft being encumbered with ice, rendered it impossible for the men to work the ship. The three top-gallant-masts thumping to and fro, cutting and chafing the spars and rigging, and all the sails blowing from gaskets to atoms, making upon the whole a dismal scene.

The members of the marine fraternity in New York in the spring of 1846 were amazed that "a big ship" such as the *Roscius* (two and a third times the size of the *Hannibal* or the *Erie*) "would take 54 days to make a westbound passage of the Atlantic no matter how severe the wintry gales, seas and weather encountered might be," but later in her career the *Roscius* made a still longer crossing of 59 days. The big packet *Calhoun* (1,749 tons), built in 1853, which was 719 tons, or 70 per cent, larger than the older *Roscius* (built in 1838, or fifteen years earlier) and four times the size of such packets as the *Hannibal,* made a westbound Atlantic crossing in 58 days. The popular Red Star liner *Constellation* of 1,560 tons, built in 1849, took 59 days for one of her passages and the Black Ball liner *Isaac Webb* of 1,359 tons, built in 1850, 60 days. The Blue Swallowtail liners *Ontario II* of 1,501 tons (built in 1854) and *Constitution* of 1,327 tons (built in 1846) each required 56 days to complete a passage from Liverpool to New York.

The three transatlantic packets that have the distinction of having made the longest westbound passages were all some two or two and a half times as big in measured and registered tonnage as the much publicized packets *Hannibal* (83 days) and *Erie* (82 days), which registered 440 and 451 tons, respectively. The *Ashburton,* which made an 89-day crossing, registered 1,015 tons; the *London,* which required 85 days to complete a passage from Portsmouth to New York, was of 1,145 tons (or 115 tons larger than the *Roscius*); and the *Victoria,* which took 84 days on one of her westbound crossings, was of 860 tons.

Large ships were at times greatly affected by head gales and seas and continued adverse sailing conditions, and later, on the California run, big burdensome windjammers of some three thousand tons or more made records for the long time required in rounding Cape Horn against westerly gales and high seas which have been described as "a bit of the turbulent North Atlantic transplanted in the southern hemisphere off the tip of the South American continent." The *Young America* skirted the Horn ("Cape Stiff") and ran from 50° S. Atlantic to 50° S. Pacific in 6 days. Many ships have covered this distance and rounded the Cape in somewhat less or slightly more than 7 days—all with most unusually favorable winds and sea; but other good ships have required weeks and even months to make this run, and some turned back, beaten by the elements, and actually completed the voyage from a North Atlantic port to California via the Cape of Good Hope. The fast seaworthy clipper *Golden Eagle* once took 90 days to round Cape Horn, and in the spring of 1914, the big 3,206-ton steel four-masted shipentine *Edward Sewall* (built in 1889) took from March 7 to May 13, or 67 days, to travel from 50° S. Atlantic to 50° S. Pacific, a section of the course to California that the *Young America* had traversed in 6 days (or one-eleventh of the time) and that a host of small wood ships had covered in under two weeks' time when experiencing what were considered as normal or about average sailing conditions.

There are two sets of records for sailing packets that had long westbound passages. One is based on single and the other on average length of crossings, and the latter is by far the more important. A comparison of the packets that, according to the records, made the longest westbound passages with those that showed the longest average length of homeward crossing while they were in the transatlantic service is of interest:

Longest Single Westbound Passages					
Name of Packet	Tonnage	Year Built	Length of Passage in Days: Longest	Length of Passage in Days: Average	Years in Service
ASHBURTON	1,015	1842	89	39	21
LONDON	1,145	1848	85	38	15
VICTORIA	860	1843	84	38	21
HANNIBAL	440	1822	83	35	7
SWITZERLAND	567	1836	82	36	9
ERIE	451	1829	82	42	11
FRANCIS DEPAU	595	1833	79	41	3
BALTIMORE	658	1837	78	39	14
AMERICAN CONGRESS	863	1849	77	36	30
NEW YORK II	862	1839	73	37	15
SPLENDID	642	1846	73	41	6
PACIFIC II	586	1824	72	36	10
CHRISTIANA	666	1846	70	43	8

Longest Average Westbound Passages					
Name of Packet	Tonnage	Year Built	Length of Passage in Days: Average	Length of Passage in Days: Longest	Years in Service
PACIFIC I	384	1807	49	61	2
ORBIT	384	1821	46	52	2
MANCHESTER	561	1825	44	59	9
ROBERT FULTON	340	1818	44	60	3
HENRY	257	1822	44	53	4
CHRISTIANA	666	1846	43	70	8
WILLIAM NELSON	1,039	1850	42	50	7
NESTOR	481	1815	42	57	4
ERIE	451	1829	42	82	11
FRANCE	411	1827	42	55	10
MANHATTAN	390	1818	42	67	4
EDWARD QUESNEL	388	1824	42	61	7
ROBERT EDWARDS	355	1817	42	57	3

Of the thirteen packets that made westbound passages of 70 days and over and of the same number of packets that averaged 42 days or over for all their westbound crossings, only two, the *Erie* and the *Christiana,* appear in both lists; the *Erie* stands sixth in one category and ninth in the other, while the *Christiana* is placed thirteenth and sixth. If the number of years spent in the service is considered, the records suggest that the longer the service of small and medium-sized packets the greater the likelihood of their having a very long passage, while the packets with the longest average length of crossings were apt to be the earlier ones and those that did not stay long in the service—which is natural because of competition and a constantly increasing demand for both speed and size, or capacity.

Of the transatlantic sailing packets operating in ten lines on regular schedules between New York and Liverpool, London (Portsmouth), and Havre, twenty-nine had an average length of their all-time westbound passages, port to port, of 40 days and over. It is significant that if we eliminate the following four of them (all of which were in the Havre service), the remaining twenty-five packets averaged only 4.6 years in the Western Ocean packet service:

Utica, 525 tons, averaged 40 days for fifteen years (1833-1848).
Charles Carroll, 411 tons, averaged 41 days for twelve years (1828-1840).
Erie, 451 tons, averaged 42 days for eleven years (1829-1840).
France, 411 tons, averaged 42 days for ten years (1827-1837).

There were eighteen packets in this trade that entered the service during the same period, 1818-1858, and averaged all-time westbound passages of 32 days and over. If we eliminate the *Phoenix* (1,487 tons), which ran only two years (1856-1858), and the *John R. Skiddy* (980 tons), which ran five years (1845-1850), the balance of these high-speed sailing packets (sixteen of them) operated in the Atlantic "ferry" for an average of 16.3 years, or some three and a half times as long as the packets with maintained slow sailing records. There were nine transatlantic sailing packets operating on regular schedules in established lines that averaged 28 to 31 days on their westbound passages, and these ships averaged 1,396 tons register. Only one of them, the *Yorkshire,* was below 1,000 tons, and her relatively small size adds to the glory of her sailing performance, for the only ship with a better average speed record was the *Amazon* of 1,771 tons (775 tons, or 78 per cent, larger than the *York-*

shire and built eleven years after "the Queen," whose best passage beat the *Amazon's* fastest crossing by eight days). The nine packets with averages of 32 days for their westbound crossings averaged 917 tons register, and the twenty liners that held average passage records of 33 days westbound had an average registered tonnage of 940 tons. Of the transatlantic sailing packets operating on schedule in the same New York lines, six had the average time of 43 days or over (i.e., 43-49 days inclusive) on their westbound passages, and the average tonnage of these—the slowest of all the packets—was only 432 tons, or about thirty per cent of the average tonnage of the nine fastest packets. The seven packets that averaged 42 days westbound had an average of 502 tons and the nine packets with lifetime average records for this crossing of 41 days, 562 tons. Of the twenty-two slowest regular New York transatlantic sailing packets operating on schedule, only two were sizable (the *Ontario II* of 1,501 tons, which averaged 41 days for four years, 1854-1858, and the *William Nelson* of 1,039 tons, which averaged 42 days for seven years, 1856-1863), and they were sailed indifferently, with small crews and under orders to take no risks and cut down operating costs "to the bone" as the sailing packet era reached its close. Eliminating these two slow sizable ships, the average registered tonnage of the other twenty packets with the slowest average westbound passages (41-49 days) was only 431 tons.

True comparison as to speed, seaworthiness, etc., between sailing packets in the North Atlantic trade should generally ignore extremes, which, while more interesting than mediocrity, are permeated with luck—either bad or good fortune; it is the average record of packet passages for years that has significance, rather than individual crossings or an occasional short or long passage. However, a great measure of uniformity within relatively fast time range is an unquestioned endorsement and proof of sailing qualities; but one is inclined to the opinion that, considering all the varying elements involved, the all-time average records of packets in the Atlantic "shuttle," to be comparative, should deal with ships that have had five and preferably ten or more years of service in the trade and that have been sailed under the same type of command actuated by the same desire. For some time the Havre boats were operated with the idea of sea comfort (plus possibly safety) rather than speed, and this at the time when the Liverpool packets were being driven with speed pre-eminently in mind.

Fast crossings westbound of 16 to 20 days, port to port (which generally meant 15 to 19 days as usually recorded by clippers, general traders, and non-packets), caught the popular imagination and were good advertising; but the packet lines learned by experience that the traveling public and the shippers of freight were far more interested in a ship's average length of passage than in record runs, in which Dame Luck figured prominently, and that an occasional very long passage was more harmful to a packet ship's reputation than an occasional very fast passage was beneficial. Of the nine fastest transatlantic packets (based on the average time required for the western passages), three never made a crossing better than in 21 days and five never made a passage westbound faster than in 24 days, port to port. Again, not one of the four packets that made the longest recorded westward passages is among the list of slow packets so designated because of average sailing performances while in the service, for each of the packets that made a westward crossing in 83 days or over had lifetime packet sailing averages over the course of 39 days or better, and there were twenty-nine regular packets with westbound passage averages of 40 days and over. Of the thirteen packets that made long crossings westbound of 70 days or more, only four had lifetime average records over the course while in packet service of 40 days or more; one had a 35-day average, three averaged 36 days, one 37 days, and two 38 days.

Of a recorded fleet of sailing packets operating regularly on schedule in the New York transatlantic service, 11.3 per cent made a slow westbound passage of 65 days and over, and 11.3 per cent had slow crossings of 60 days but under 65 days; therefore, a number of packets equivalent to 22.6 per cent of the entire regular fleet of Western Ocean liners had slow westbound passages of 60 days or more to their credit or discredit.

The following is a record of the length of passages westward—or "uphill" against the King of the West Wind—of the transatlantic square-rigged sailing packets engaged in the New York service to and from Liverpool, Portsmouth (London), and Havre during the sailing packet ship era. Whereas eastward voyages were much faster than the westward runs because of more favorable prevailing wind and associated sea conditions, records of the actual length of such passages are not available, and only New York (and U.S.A.) records of arrival and of the time of foreign port departure are complete and worthy of being considered generally accurate and comparative.

WESTBOUND TRANSATLANTIC PASSAGES from New York to Liverpool, Portsmouth, or Havre

Length of Voyages in Days	Number of Passages Made in Time Stated: 1818 to 1832	1833 to 1847	1848 to 1857	Total 1818 to 1857
16	0	1	1	2
17	2	0	1	3
18	0	1	3	4
19	0	1	5	6
20	2	4	12	18
21	2	14	11	27
22	2	9	19	30
23	6	21	20	47
24	6	37	26	69
25	9	32	25	66
26	15	34	25	74
27	19	60	49	128
28	24	69	63	156
29	24	65	54	143
30	36	108	80	224
31-35	206	552	357	1,115
36-40	231	482	290	1,003
41-45	175	241	148	564
46-50	84	117	61	262
51-55	32	46	36	114
56-60	22	17	19	58
61-65	9	9	2	20
66-70	6	4	4	14
71-75	1	2	1	4
76-90	0	5	3	8

These statistics for length of westbound transatlantic sailing packet passages in the New York service are from compilations by Robert G. Albion (SQUARE-RIGGERS ON SCHEDULE, Princeton University Press) and are based upon the records of individual passages as given in the marine news of New York newspapers. They are "port-to-port" figures and are determined by subtracting the stated date of departure from the date of arrival. "Land-to-land" or "point-to-point" figures would naturally give shorter length of passages. The record of occasional voyages is evidently lacking, and the figures cannot be taken as absolute, but they are relatively complete.

General Averages

LENGTH OF WESTBOUND OCEAN PASSAGES IN DAYS—Port to Port

From European Port	Number of Passages	PERIOD: 1818-1832	1833-1847	1848-1857	Total 1818-1857 Inclusive
Liverpool	1,993	37.9	34.3	34.6	35.3
Havre	1,239	40.0	37.7	36.7	37.7
London (Portsmouth)	928	37.7	36.3	35.1	36.1
TOTAL	4,160	38.5	35.8	35.3	36.2

The packets in the Havre run generally traveled a more southerly course than the vessels in the British service, and while avoiding ice in the spring and summer they had to combat the Gulf Stream.

The following is a record of the five fastest square-rigged sailing packets in the New York transatlantic service (1818-1858) based on (1) the record of the westbound passages only and (2) a restriction of the record to the first fifteen voyages negotiated by each vessel (it also being understood that a vessel that failed to make fifteen voyages is not eligible for consideration as a proven, reliable, and successful fast packet):

No. of Days	YORKSHIRE	SOUTH AMERICA	INDEPENDENCE	GARRICK	NEW WORLD	Total Passages of the Five Ships
16	1	—	—	—	—	1
18	—	—	—	1	1	2
21	1	—	1	—	1	3
22	—	—	1	1	—	2
24	1	2	1	—	1	5
25	1	—	2	1	—	4
26	—	1	—	—	—	1
27	3	—	—	1	2	6
28	2	—	2	—	1	5
29	—	—	—	1	2	3
30	2	2	—	3	1	8
31	1	3	1	—	1	6
32	1	—	1	2	2	6
33	—	1	1	1	1	4
34	—	—	—	1	—	1
35	—	1	1	—	1	3
36	—	2	1	—	—	3
37	—	2	1	1	—	4
40	1	—	—	1	—	2
42	—	—	—	—	1	1
44	—	—	2	—	—	2
46	—	—	—	1	—	1
51	1	—	—	—	—	1
69	—	1	—	—	—	1
Average of 15 first passages in days	29.1*	34.0†	31.0	31.0	29.9	31.0‡ for 75 passages

*Except for the 51-day passage, the YORKSHIRE averaged 27.5 days.
†Except for the 69-day passage, the SOUTH AMERICA averaged 31.5 days.
‡Except for 3 voyages (of the 75) of 44 days or over, the average was 30 days.

During the same period, the five slowest ships on their first voyages in this trade, each of which completed fifteen westbound ocean passages (i.e., the *Manchester, John Jay, Erie, Charles Carroll,* and *France*), averaged 41.8 days for the crossing. The average of these vessels covering their first fifteen westbound passages ranged from 40.5 days for the *John Jay* and 40.6 days for the *Erie* to 41.3 days for the *Manchester,* 42.1 days for the *Charles Carroll,* and 44.3 days for the *France.* The only passage of this group of five vessels negotiated under 28 days was a 24-day crossing for the *John Jay,* and only eight of the seventy-five crossings of these vessels were under 32 days. Of the eighteen very slow passages (over 45 days), four occupied 47 days, three were of 48 days, two of 49 days, two of 52 days, one of 55 days, one of 57 days, one of 58 days, two of 59 days, one of 66 days, and one of 70 days. There were eight crossings of this slow group of five vessels in 30 days or better, nine crossings of 31 to 35 days, nineteen of from 36 to 40 days, twenty-one of from 41 to 45 days, nine of from 46 to 50 days, three of from 51 to 55 days, four of from 56 to 60 days, and two of from 66 to 70 days.

The particulars and record of each of the selected five fast and the five slow transatlantic sailing packets in the New York service, throughout the period that they were engaged in that run, are recorded herewith:

Name of Packet	Tonnage	Line	Builder	In Service	Time of Westbound Crossings		
					Shortest	Longest	Average
					Days	*Days*	*Days*
YORKSHIRE	996	Black Ball, Liverpool	W. H. Webb, New York	1844-1862 (18 yrs.)	16	58	29
SOUTH AMERICA	605	Black Ball, Liverpool	Brown & Bell, New York	1832-1843 (11 yrs.)	23	69	32
INDEPENDENCE	732	Blue Swallowtail, Liverpool	S. Smith, New York	1834-1847 (18 yrs.)	21	48	32
GARRICK	895	Dramatic, Liverpool	Brown & Bell, New York	1837-1853 (19 yrs.)	18	54	32
NEW WORLD	1,404	Blue Swallowtail, Liverpool	McKay, East Boston	1846-1880 (34 yrs.)	18	42	31
MANCHESTER	561	Black Ball, Liverpool	Brown & Porter, New York	1825-1832 (9 yrs.)	28	59	45
JOHN JAY	502	Red Star, Liverpool	Brown & Bell, New York	1827-1834 (7 yrs.)	24	59	41
ERIE	451	Havre	Bergh & Co., New York	1829-1840 (11 yrs.)	24	82	42
CHARLES CARROLL	411	Havre	Bergh & Co., New York	1828-1840 (12 yrs.)	30	66	41
FRANCE	411	Havre	Bergh & Co., New York	1827-1837 (10 yrs.)	31	55	42

The above five fastest and five slowest transatlantic sailing packets during the years 1818-1858 are selected, as before stated, based on the sailing performances of their first fifteen westbound passages. If the complete history of each sailing packet is considered, with due regard being given to length of regular service and some cognizance to size, year built, and outstanding runs, etc., then the following could probably be considered as the all-time six fastest and six slowest regular sailing packets in the established lines engaged in the New York transatlantic trade:

A. *Fast Packets*

Name of Packet	Tonnage	Line	Builder	In Service	Westbound Passages		
					Fastest	Average	Slowest
					Days	*Days*	*Days*
YORKSHIRE	996	Black Ball, Liverpool	Webb, New York	1844-1862 (18 yrs.)	16	29	58
AMAZON	1,771	Black X, London	Westervelt, New York	1854-1868 (14 yrs.)	24	28	36
DEVONSHIRE	1,149	Black X, London	Westervelt, New York	1848-1861 (13 yrs.)	19	30	41
NEW WORLD	1,404	Blue Swallowtail, Liverpool	McKay, Boston	1846-1880 (34 yrs.)	18	31	42
GREAT WESTERN	1,443	Black Ball, Liverpool	Webb, New York	1851-1878 (27 yrs.)	24	31	43
NEPTUNE	1,406	Black Ball, Liverpool	Webb, New York	1855-1877 (22 yrs.)	26	31	36
B. *Slow Packets*							
MANCHESTER	561	Black Ball, Liverpool	Brown & Porter, New York	1825-1834 (9 yrs.)	28	44	59
CHRISTIANA	666	Red Swallowtail, London	New York	1853-1861 (8 yrs.)	30	43	70
WILLIAM NELSON	1,039	Havre	Somerset, Mass.	1856-1863 (7 yrs.)	38	42	50
ERIE	451	Havre	Bergh, New York	1829-1840 (11 yrs.)	24	42	82
FRANCE	411	Havre	Bergh, New York	1827-1837 (10 yrs.)	31	42	55
CHARLES CARROLL	411	Havre	Bergh, New York	1828-1840 (12 yrs.)	30	41	66

The *Yorkshire,* except for a 58-day and a 51-day passage when Dame Luck worked outrageously against her, averaged 27½ days for the westward run for years and had an all-time average of around 28 days. She also showed her class and speed by the frequency of her smart crossings eastbound. Other outstanding fast packets—all things considered—were the *Isaac Wright, Garrick, Columbia II, Independence, West Point, Patrick Henry,* and *South America;* whereas to the list of notoriously slow packets can be added the *John Jay, Splendid,* and *Edward Quesnel,* all of which saw six or more years of service as regular packets.

The packet lines were successful in their efforts to build up faster average passage records, and on the westward run, port to port, the average time of 39 days for the first five years of service (HARPER'S Magazine said 40 days) was reduced some six days in thirty odd years by the Liverpool-New York lines. For the five years 1848-1852, their average was only 33.3 days, port to port, when sailing packets on the Western Ocean were at their best. During the five years 1853-1857, following the zenith period, the average time of westward crossings, we are told, increased to 35.7 days because of (1) economy of operation necessitated by the unsuccessful fight of sail against steam, (2) the fact that the ships were getting older and could not be driven as relentlessly in heavy weather, and (3) the inferior quality of crews, which were also reduced in number. Although the Civil War put an end to the last major coastwise packet lines, the transatlantic sailing packets continued in operation, but were gradually forced out of the picture not so much by war as by steam, iron, and the screw propeller.

Some of the clipper ships built for service on the Seven Seas or specifically for the around-the-Horn to California, the oriental, or the Australian trade occasionally made some fast runs across the Atlantic when functioning as general traders or when making a passage —sometimes loaded and sometimes in ballast—as part of a "leg" of a long-distance voyage. One of the earliest of the vessels designated as "clippers," the *Memnon* of 1,068 tons (in reality a fast China packet and pre-clipper), which was built in 1847 by Smith & Dimon, New York, primarily for the China trade, sailed from New York on November 6, 1848, on a passage to Liverpool and arrived off Port Lynas on November 20. She had made the transatlantic run in 14 days 7½ hours and had "breezed past the S.S. *Europe* on the way" (incidentally "at 13 knots an hour"), running the steamship out of sight "horizon to horizon in about six hours." The *Memnon* on this crossing was only 13 days to a point off Holyhead, and on one day she covered 346 nautical miles (an average of 15¼ knots per hour).

The *Red Jacket* (2,305 tons; 251.2 ft. length, 44 ft. beam, and 31 ft. depth), built by George Thomas at Rockland, Maine, in 1853, made the record run for extreme clippers between New York and Liverpool, arriving at the latter port on January 23, 1854, after a passage of 13 days 1 hour and 25 minutes. During this crossing the *Red Jacket* covered 417 nautical miles in one day (January 19) and, it was reported, averaged 374 miles per day for three days and 357 miles per day for five days, the runs being, consecutively, 417, 364, 342, 300, and 360 miles per day. This fast passage took the speed laurels from the earlier clipper *Memnon* and can be compared with an old packet ship record made in December 1823, or over thirty years earlier, and this by a short and beamy full-modeled square-rigger. The sailing packet *New York* (516 tons; 127 ft. length and 30 ft. beam), built in 1822 for the Black Ball Line, sailed from New York December 16, 1823, and arrived at Liverpool in the morning of January 1, 1824, after a fast passage of 15 days 16 hours, city to city. The *New York* was in model and sail plan the antithesis of a clipper; moreover, she was only 22 per cent of the tonnage, or bulk, and only half the length of the record-making clipper "flier" *Red Jacket,* which was built and made her eastbound transatlantic record some three decades later.

The big clipper *James Baines* (2,515 tons; 266 ft. length, 44.7 ft. beam, and 29 ft. depth), built in East Boston by McKay in 1854, on her initial voyage crossed the Atlantic eastbound to Liverpool from Boston Light to Rock Light (leaving Boston September 12, 1854) in the reported fast time of 12 days and 9 hours. On the fourth, seventh, and eleventh days she made over 300 miles per day, these runs being 305, 342, and 337 miles, respectively.

The following is a comparison of the maiden transatlantic voyages (eastbound passages) as reported by the command of the Donald McKay-built clipper ships during the period from June 1853 to the end of 1855:

Name of Ship	Date of Passage	Time Reported for Crossing	Claimed Best Day's Run	Commencement and Ending of Run as Reported
			Miles	
JAMES BAINES	Sept. 1854	12 days 9 hours	342	Boston Light to Rock Light
LIGHTNING	Feb.-Mar. 1854	13 days 19½ hours	436 (on last day)	Boston Light to Rock Light
SOVEREIGN OF THE SEAS	June-July 1853	13 days 22⅚ hours	344	New York to anchorage in the Mersey
DONALD McKAY	Feb.-Mar. 1855	17 days	421	Boston to Liverpool (claimed 12 days' run to Cape Clear)
CHAMPION OF THE SEAS	June-July 1854	29 days (light winds all the way)		Boston to Liverpool
GREAT REPUBLIC	1855	13 days		New York (Sandy Hook) to Scilly Islands

The clipper *Typhoon* (1,611 tons; 207 ft. length, 41 ft. beam, and 23 ft. depth), built by Fernald & Pettigrew, Portsmouth, N. H., in 1851 for D. & A. Kingsland, New York, arrived at Liverpool March 26, 1851, from Portsmouth after a crossing in ballast reported as 13 days and 22 hours, port to port, but only 12 days and 21 hours from Portsmouth, N. H., to Holyhead, where the ship was "detained by fog." On one day her command affirmed that the *Typhoon* covered 346 nautical miles and averaged 14¾ knots per hour from noon to noon (a short day of about 23½ hours for the eastward run). It is said that the *Typhoon* was the first American clipper and the largest merchant vessel ever seen in Liverpool when she arrived there on her maiden voyage.

The clipper *Sierra Nevada* (1,942 tons; 222.2 ft. length, 44.4 ft. beam, and 26.4 ft. depth), built by Tobey & Littlefield, Portsmouth, N. H., in 1854, made the passage from Hampton Roads, Va., to Liverpool in April 1855 in a reported 15 days flat. The small bark *Wildfire* with clipper lines (338 tons; 128.4 ft. length, 27.4 ft. beam, and 10.6 ft. depth), built at Amesbury, Mass., in 1853, reported a passage from Boston to Gibraltar in May 1853 of only 14 days—an amazing performance (if true) for such a small craft. The clipper *Flying Scud* (1,713 tons; 220.6 ft. length, 40.9 ft. beam, and 23.9 ft. depth), built by Metcalf & Norris, Damariscotta, Maine, in 1853, was reported arriving at Marseilles, France, on January 9, 1856, establishing a record of 19 days and 20 hours on the passage from New York.

In 1864 a record run was claimed by the clipper packet *Adelaide* (of Williams & Guion's Black Star Line) of 12 days and 8 hours from New York to the Mersey (stated as Liverpool). This was probably a run from light to light (or land to land). If the time of the passage as claimed was authentic, this crossing would seem to be an all-time record. The *Adelaide* was built in 1854 by A. C. Bell, New York. She was of 1,831 tons register; 214 ft. length, 43 ft. beam, and 28.2 ft. depth. In making this remarkably fast passage eastbound under unusually favorable wind and sea conditions, the command and owners of the *Adelaide* claimed that she beat the Cunard steamship *Sidonia* from Sandy Hook to the River Mersey pilot.

The clipper *N. B. Palmer,* built by Westervelt & Mackey, of New York, in 1851 (1,400 tons; 202.6 ft. length, 38.6 ft. beam, 22 ft. depth), it is claimed, made a run from Sandy Hook to the Lizard in between 9 and 10 days. This claim has never been substantiated by supporting records; neither have the claims of the command and owners of the sailing packet *Guy Mannering* (1,418 tons), which sought to be credited with two eastward transatlantic crossings of 9 days plus (i.e., between 9 and 10 days) from Sandy Hook to a European point, light, rock, or land.

It has been said by one marine authority that "the finest of all transatlantic sailing records seems to have been won by the relatively small (for the year launched, i.e., 1855) Baltimore-built clipper *Mary Whitridge*," which vessel, under Capt. Robert B. Cheesebrough, sailed from Baltimore June 20, 1855, for Helvoet, and landed passengers in England in 12 days and 10 hours after leaving the Chesapeake. This remarkable passage, distance and season considered, it has been said, "has never been equaled by any sailing vessel in the transatlantic run." We are told that the records of the *Red Jacket* (2,305 tons) of 13 days 1 hour and 25 minutes from Sandy Hook to Rock Light and of the *Great Republic* (3,357 tons) of 13 days from Sandy Hook to Scilly Islands "were over shorter routes and under more favorable seasons for wind" than the record run of the *Mary Whitridge* (978 tons). The fast run of the *Mary Whitridge* referred to was generally reported as a passage from Baltimore (or the Chesapeake) to Liverpool (or the Mersey) in 13 days and 7 hours. On the records of various non-packet sailing ships, most voyages to Liverpool were reported as commencing when the pilot was dropped and ending when the vessel made land, a light, took pilot on board, or anchored (sometimes far out from her port of destination). Seldom was such a sailing ship voyage ended, in the time records, when she actually arrived in port and discontinued the use of her sails. In the old days, before the advent of steam, sailing ships sailed from dock to dock, and their time for a voyage covered the period from actual departure from a pier to the actual arrival alongside dock at the port of destination, and the length of a sailing packet voyage was always measured as the actual time from port to port or city to city. Later, the time of a voyage was made to cover the ship's deep-sea work from a point of land or a lightship well out in the ocean from the port of departure to a generally similar point or light outside the port of arrival. During the middle of the nineteenth century, sailing ships reporting records or very fast runs from land to land were the greater part of a day, a full day, and on occasions several days in completing the passage from port to port or from dock to dock. In these days, transatlantic liners take the time for their passage both eastbound and westbound between Ambrose Light Vessel (6½ miles from Sandy Hook and 22 miles out from New York) and Bishop's Rock, the most southwesterly point of the Scilly Islands forming part of the domain of Great Britain. If runs today were made between the old Queenstown in Cork Harbor on the southern coast of Ireland, the transatlantic runs of modern liners would probably be timed when leaving or making Fastnet Rock (about 2,758 nautical miles from Ambrose Light Vessel).

The following is a statement of reported fast transatlantic sailing ship passages, both eastbound and westbound:

EASTBOUND

A. *General Trading Ships*

Year	Name of Ship	Crossing	Stated Time
1804	OLIVER ELLSWORTH	New York to Liverpool (land to land)	14 days +
1807	REBECCA SIMS	Cape Henlopen, Del., to the Mersey	14 days +
1848	RICHARD ALSOP	Sandy Hook to Holyhead	14 days +

B. *Packet Ships*

Year	Name of Ship	Crossing	Stated Time
1823	NEW YORK I	New York to Liverpool (port to port)	15 days 16 hours
1836	INDEPENDENCE	Savannah, Ga., to Cork, Ireland	14 days 12 hours
1847	ISAAC WRIGHT	New York to Liverpool	13 days +
1850	SOUTHAMPTON	Sandy Hook to Falmouth	13 days 12 hours
1851	DANIEL WEBSTER	Boston Light to Cape Clear	13 days 10 hours
1852	WASHINGTON	New York to Liverpool	13 days 14 hours
1852	JACOB A. WESTERVELT	Sandy Hook to Liverpool	14 days 12 hours
1854	DREADNOUGHT	New York to Liverpool	13 days 11¼ hours
1859	DREADNOUGHT	New York to Liverpool	13 days 8 hours
1859	DREADNOUGHT	Sandy Hook to Queenstown	9 days 17 hours
1859	PHOENIX	Savannah, Ga., to Queenstown	14 days 9 hours

The New York packets MONTEZUMA, PATRICK HENRY, and ST. ANDREW in regular packet service made eastbound transatlantic passages, port to port, in 15 days, and other packets are reported to have made the crossing in this time or better.

C. *Clipper Ships*

Year	Name of Ship	Crossing	Stated Time
1848	MEMNON	New York to Point Lynas	14 days 7½ hours
1851	TYPHOON	Portsmouth, N. H., to Liverpool	13 days 22 hours
1853	WILDFIRE (bark)	Boston to Gibraltar	14 days
1854	SOVEREIGN OF THE SEAS	New York to Liverpool (reported as 5½ days Grand Banks to Liverpool)	13 days 23 hours
1854	RED JACKET	New York to Liverpool	13 days 1½ hours
1854	LIGHTNING	Boston Light to Liverpool (also reported as 13 days 19½ hours to Rock Light)	13 days 21 hours
1854	JAMES BAINES	Boston Light to Rock Light	12 days 9 hours
1854	BLUE JACKET	Boston Light to Cape Clear	12 days 10 hours
1855	SIERRA NEVADA	Hampton Roads to Liverpool	15 days
1855	MARY WHITRIDGE	Baltimore to Liverpool (reported as landing passengers on English soil after a run of 12 days 10 hours—a record)	13 days 7 hours
1855	GREAT REPUBLIC	Sandy Hook to Scilly Islands	13 days
1855	DONALD McKAY	Boston Light to Cape Clear	12 days
1856	CAROLINE	Charleston, S. C., to Liverpool	16 days
1856	FLYING SCUD	New York to Marseilles	19 days 20 hours
1859	PHOENIX	Savannah to Cork	14 days 9 hours
1864	ADELAIDE (packet service)	New York to Liverpool (probably from light to light)	12 days 8 hours

WESTBOUND

A. *General Trading Ships*

Year	Name of Ship	Crossing	Stated Time
1806	FANNY	Greenock to New York	23 days
1811	ALERT	Liverpool to Boston	20 days
1811	OSMIN	Rochelle to Philadelphia	19 days
1812	LADY MADISON	Britain to New York (reported reaching Grand Banks in 9 days)	18 days
1819	TRITON	Liverpool to Boston	18 days
1819	HERALD	Liverpool to Boston	17 days

B. *Packet Ships*

Year	Name of Ship	Crossing	Stated Time
1824	EMERALD	Liverpool to Boston (reported at Boston Light in 15 days 14 hours)	16 days 21 hours
1829	JOSEPHINE	Belfast to New York	15 days 12 hours
1830	COLUMBIA	Portsmouth to Sandy Hook (from port to port in 17 days)	15 days 18 hours
1830	CALEDONIA	Liverpool to New York (from port to port in 17 days)	15 days 22 hours
1846	YORKSHIRE	Liverpool to New York (port to port) (from the Mersey to Sandy Hook in 15 days)	16 days
1854	DREADNOUGHT	Liverpool to New York	19 days
1857	HARVEST QUEEN	Liverpool to New York (port to port)	16 days

New York packets in regular service made westbound transatlantic passages, port to port, as follows: NORTHUMBERLAND 17 days; BAYARD, GARRICK, WEST POINT, NEW WORLD, and CONSTITUTION each 18 days; PRESIDENT, DEVONSHIRE, SOUTHAMPTON, WELLINGTON, and ISAAC BELL each 19 days.

C. *Clipper Ships*

Year	Name of Ship	Crossing	Stated Time
1860	ANDREW JACKSON	Liverpool to Sandy Hook (reported a round trip in 30 sailing days)	15 days

Some of the British-built iron semi-clippers, when their bottoms were clean, showed excellent speed under favorable conditions of wind and water. The *Romsdal,* a four-masted, full-rigged ship, built in 1877 by Steele, on the Clyde, for J. & A. Allan, was of 1,827 tons (length 275.9 ft., beam 41.1 ft., depth 23.5 ft.) and the largest sailing ship owned by that prominent firm. She became known as "Allan's magnificent clipper" and, it has been said by British authorities, was "the fastest four-masted ship ever built." The *Romsdal* was reported to have made a 10-day passage from New York to Liverpool, which is untrue. Possibly the *Romsdal* did make a transatlantic run eastward of 10 days and some unstated hours (for even a 10-day-23-hour voyage has been designated as "a 10-day run") from land to land or from some point to point (light vessel or rock)—maybe from Sandy Hook or some other U. S. point of land or light to Fastnet Rock or Cape Clear off the southwest Irish coast. The claimed fast passage of the *Romsdal* could not possibly be accepted as a run of 10 days "from New York to Liverpool" or from any point, land to land, without verification, which has not been forthcoming; it is positive that this performance cannot be classed with that of the *Red Jacket* (13 days 1 hour 25 minutes, dock to dock), the *James Baines* (12 days 6 hours, Boston Light to Rock Light), the *Typhoon* (13 days 22 hours, Portsmouth, N. H., to Liverpool, and 12 days 21 hours to Holyhead), or the *Mary Whitridge* (which landed passengers in England when 12 days 10 hours out), although it may be compared with the 1859 crossing of the *Dreadnought,* which occupied 9 days 17 hours from Sandy Hook to a pilot boat off Queenstown Harbor. The *Romsdal,* it is further claimed, made a complete round transatlantic voyage in 37 days' total time, and on a 69-day passage from Liverpool to Calcutta was reported to have averaged 335 nautical miles per day for each of ten consecutive days. She was a long, narrow ship like so many British sailing craft (ratio of length to beam 6.7 to 1) and was one of a large number of such vessels to disappear at sea. She was lost, with all hands, in November 1891, during a cyclone in the Indian Ocean.

Another claimed eastbound transatlantic record crossing emanating from Britain that cannot be taken seriously was a passage made in February 1916 by the four-masted ship *Lancing* (formerly the transatlantic steamship *Pereire*), well loaded with oil cakes, whose command was responsible for the statement that the vessel had traveled across the Atlantic from New York to Cape Wrath (northwest Scotland) in 6 days 18 hours before westerly gales of wind. Possibly a North Atlantic crossing, land to land, such as from Cape Race to Cape Wrath (or rather, Butt of Lewis) was intended, as the report in the press giving the time as from New York is impossible and no supporting data even of the land-to-land crossing was ever forthcoming.

A Record of the Sailing Packets in the Service of the Ten Established Regular New York Lines, 1818-1858, Arranged in Order of Sailing Performance Based on the Average Time of Run on All Westbound Passages

The following is a record of the full ship-rigged wooden transatlantic sailing packets of duly qualified established lines operating on regular published schedules (as to date and time of departure from each side) and sailing to and from New York during what may be termed the "transatlantic sailing packet era," 1818-1858 inclusive. The statement shows the various regular packets, with important particulars about each ship, arranged in order based on their sailing performances figured on the average length of run (in days) on all westbound passages. The westbound, or homeward, passages only are considered in this comparative and grading record, as these "uphill" and relatively long runs against the usually prevailing west winds are a better test of a sailing ship's quality—with respect to speed and seagoing properties—than the more easy and quicker eastward passages, and the only true and complete data of transatlantic sailing packet passages available are those of westward runs to the port of New York. The following table has been arranged and compiled from statistics collected by Robert Greenhalgh Albion and published in SQUARE-RIGGERS ON SCHEDULE (Princeton University Press, 1938). The packet ships appearing in this record were all engaged in the New York transatlantic service of the following sailing packet lines during the period 1818-1858 inclusive.

New York-Liverpool Service:

Black Ball, or Old, Line...............Service began 1818; ended 1878
Red Star, or Second, Line..............Service began 1822; ended 1867
Blue Swallowtail, or Fourth, Line.......Service began 1822; ended 1867
Dramatic Line........................Service began 1836; ended 1868
Liverpool New Line..................Service began 1843; ended 1849

New York-London (Portsmouth) Service:

Black X Line.........................Service began 1824; ended 1868
Red Swallowtail Line ....Service began 1824; ended 1881

New York-Havre Service:

Old Line (later Union Line)..........Service began 1822; ended 1863
Second Line..........................Service began 1823; ended 1869
Whitlock Line (later Union Line)......Service began 1823; ended 1864

In addition to the 188 sailing packets tabulated herewith that operated in the above-stated ten lines during the period 1818-1858, 11 other ships saw service "of sorts" under the flags of these lines between the years 1858 and 1881.

Name of Packet (with old meas. tonnage; length, beam, and depth in feet)	Line	Year Built	Builder	In Service	Westbound Passages in Days		
					Average	Fastest	Slowest
AMAZON (1,771; 216x42x27.4)	Black X, London Largest regular packet.	1854	Westervelt, New York	1854-1868 (14 yrs.)	28	24	36
YORKSHIRE (996; 166.5x36.2x21)	Black Ball, Liverpool Probably fastest Atlantic packet. Lost at sea 1862.	1843	Webb, New York	1844-1862 (18 yrs.)	29	16	58
DEVONSHIRE (1,149; 173.5x38x21.8)	Black X, London Sold British 1861.	1848	Westervelt & Mackey, New York	1848-1861 (13 yrs.)	30	19	41
PALESTINE (1,751; 213.8x42x27.8)	Black X, London Lost collision at sea 1861.	1854	Westervelt, New York	1854-1861 (7 yrs.)	30	25	36
NEW WORLD (1,404; 187x40.5x28)	Blue Swallowtail, Liverpool In London service 1880.	1846	McKay, Boston	1846-1880 (34 yrs.)	31	18	42
GREAT WESTERN (1,443; 191.5x40.5x23.3)	Black Ball, Liverpool Sold to Pacific 1878.	1851	Webb, New York	1851-1878 (27 yrs.)	31	24	43
PHOENIX (1,487; 200.8x40x20)	Red Star, Liverpool California clipper.	1853	Thos. E. Knight, Portland, Me.	1856-1858 (2 yrs.)	31	26	35
NEPTUNE (1,406; 191x40x28)	Black Ball, Liverpool Wrecked 1877.	1855	Webb, New York	1855-1877 (22 yrs.)	31	26	36
ISAAC WRIGHT (1,161; 175x38.1x22.5)	Black Ball, Liverpool Burned Liverpool December 1859.	1847	Webb, New York	1847-1859 (12 yrs.)	31	21	44

Continued on next page.

Name of Packet (with old meas. tonnage; length, beam, and depth in feet)	Line	Year Built	Builder	In Service	Westbound Passages in Days		
					Average	Fastest	Slowest
COLUMBIA II (1,050; 170.5x36.7x21.5)	Black Ball, Liverpool	1846	Webb, New York	1846-1869 (23 yrs.)	32	22	45
	Sold to California 1869.						
GARRICK (895; 157.5x35.3x21)	Dramatic Line, Liverpool	1836	Brown & Bell, New York	1837-1856 (19 yrs.)	32	18	54
	Speed records to 1854.						
INDEPENDENCE (732; 140x32x20)	Blue Swallowtail, Liverpool; Red Swallowtail, London	1834	Smith, New York	1834-1852 (18 yrs.)	32	21	48
	Speed records to 1847. Last five years, averaged 34 days in London service.						
WEST POINT (1,046; 166.5x37.1x21)	Red Star, Liverpool	1847	Westervelt & Mackey, New York	1847-1863 (16 yrs.)	32	18	45
SOUTH AMERICA (605; 133.8x31.7x15.8)	Black Ball, Liverpool	1832	Brown & Bell, New York	1832-1843 (11 yrs.)	32	23	69
	Whaler 1844; sunk "Stone Fleet" 1861.						
ENGLAND (729; 140.3x34x17)	Black Ball, Liverpool	1834	Smith & Dimon, New York	1834-1844 (10 yrs.)	32	21	49
	Lost December 1844.						
CONSTITUTION (1,327; 182.3x39.8x30.3)	Blue Swallowtail, Liverpool	1846	Brown & Bell, New York	1847-1855 (9 yrs.)	32	18	56
	Burned Liverpool December 1855.						
WATERLOO (892; 159.5x35x21.8)	Red Star, Liverpool	1845	Westervelt & Mackey, New York	1845-1853 (8 yrs.)	32	21	49
JOHN R. SKIDDY (980; 173x35x17.7)	Red Star, Liverpool	1844	McKay, Newburyport	1845-1850 (5 yrs.)	32	25	44
	Wrecked Ireland March 1850.						
YORK (433; 118.5x28.5x14.3)	Red Swallowtail, London; Blue Swallowtail, Liverpool	1824	Crockett, New York	1825-1833 (8 yrs.)	32+	24	54
	Whaler 1841-1847.						
CORNELIUS GRINNELL (1,117; 182x36.4x23.5)	Red Swallowtail, London	1850	Boston	1850-1881 (31 yrs.)	33	24	48
	Long fine record.						
PATRICK HENRY (880; 159x34.8x21.8)	Red Swallowtail, London; Blue Swallowtail, Liverpool	1839	Brown & Bell, New York	1839-1864 (25 yrs.)	33	22	46
	Sold British during Civil War.						
FIDELIA (895; 151.8x35x21)	Black Ball, Liverpool	1845	Webb, New York	1845-1863 (18 yrs.)	33	21	50
	Sold London 1864.						
MERCURY (1,350; 193.5x38.8x22.2)	Second Line, Havre	1851	Westervelt & Mackey, New York	1851 1869 (18 yrs.)	33	23	49
	Clipper (semi) type.						
MARGARET EVANS (899; 158.2x32.3x24.3)	Black X, London	1846	Westervelt & Mackey New York	1846-1863 (17 yrs.)	33	22	51
	Sold British 1866.						
ADMIRAL (929; 160.2x35.7x25.3)	Old Line, Havre	1846	Webb, New York	1846-1863 (17 yrs.)	33	22	46
	Sold British 1866.						
UNDERWRITER (1,168; 183x37.2x30)	Red Star, Liverpool	1850	Westervelt & Mackey, New York	1851-1867 (16 yrs.)	33	22	46
	Wrecked March 1867.						

Continued on next page.

Name of Packet (with old meas. tonnage; length, beam, and depth in feet)	Line	Year Built	Builder	In Service	Westbound Passages in Days: Average	Fastest	Slowest
SOUTHAMPTON (1,299; 181x39.6x22.2)	Black X, London	1849	Westervelt & Mackey, New York	1849-1865 (16 yrs.)	33	19	43
QUEEN OF THE WEST (1,160; 179.3x37.5x22)	New Line, Liverpool; Blue Swallowtail, Liverpool	1843	Brown & Bell, New York	1843-1855 (12 yrs.)	33	22	43
	Wrecked 1855; salvaged by British.						
UNITED STATES (650; 139.8x32x16)	Red Star, Liverpool	1833	Smith & Dimon, New York	1833-1844 (11 yrs.)	33	25	54
	Lost December 1844.						
PHILADELPHIA (542; 132x30.1x15)	Black X, London	1832	Bergh, New York	1832-1843 (11 yrs.)	33	24	50
IOWA (874; 155.5x35.2x21.8)	Havre	1839	Webb & Allen, New York	1839-1848 (9 yrs.)	33	22	48
	Transport; then sold California.						
NEW YORK (991; 165.7x36.2x21.1)	Havre	1847	Webb, New York	1847-1855 (8 yrs.)	33	22	48
BAVARIA (908; 160x35.5x21)	Havre	1846	Webb, New York	1846-1853 (7 yrs.)	33	23	44
	Australia 1853.						
LEEDS (408; 112.7x28.5x14.3)	Blue Swallowtail, Liverpool	1823	Fickett, New York	1823-1828 (6 yrs.)	33	23	40
	London run 1829. Total average for seven years, 33½ days.						
ORPHEUS (573; 132x31x15.5)	Black Ball, Liverpool	1833	Bergh, New York	1834-1839 (5 yrs.)	33	24	65
OCEAN QUEEN (1,182; 175.3x38.4x22.2)	Black X, London	1850	Westervelt & Mackey, New York	1850-1855 (5 yrs.)	33	23	52
ROCHESTER (714; 144.5x33x21.1)	New Line, Liverpool	1839	Brown & Bell, New York	1843-1847 (4 yrs.)	33	24	41
	Wrecked Ireland April 1847.						
ISAAC BELL (1,072; 171x37x26.6)	Havre	1851	Webb, New York	1851-1854 (3 yrs.)	33	19	45
	London Black X temporarily 1857-1858.						
GALLIA (1,190; 171x39.2x27.8)	Havre	1849	Webb, New York	1849-1852 (3 yrs.)	33	20	49
HARVEST QUEEN (1,383; 188.3x40x28.5)	Black Ball, Liverpool	1854	Webb, New York	1854-1875 (21 yrs.)	34	16	44
	Sunk in collision December 1875.						
HENRY CLAY (1,207; 181.7x38x29.7)	Blue Swallowtail and Dramatic, Liverpool	1845	Brown & Bell, New York	1845-1865 (20 yrs.)	34	23	53
	Burned September 1849 and rebuilt.						
ROSCIUS (1,030; 167.5x36.3x21.6)	Dramatic and Foster's lines, Liverpool	1838	Brown & Bell, New York	1838-1856 (18 yrs.)	34	23	59
	Foundered August 1860.						
SIDDONS (895; 157.5x35.3x21)	Dramatic and Foster's lines, Liverpool	1837	Brown & Bell, New York	1837-1854 (17 yrs.)	34	22	53
WELLINGTON (726; 144.3x33.3x20.5)	Red Swallowtail, London	1837	Bergh, New York	1837-1853 (17 yrs.)	34	19	60
	New Orleans packet 1854-1860.						
HAVRE II (870; 158.5x34.7x20.3)	Havre	1845	Webb, New York	1845-1863 (17 yrs.)	34	20	53
	Sold Norway during Civil War.						

Continued on next page.

Name of Packet (with old meas. tonnage; length, beam, and depth in feet)	Line	Year Built	Builder	In Service	Westbound Passages in Days		
					Average	Fastest	Slowest
VIRGINIAN (616; 133.6x32x16)	Red Star, Liverpool	1832	Smith & Dimon, New York	1832-1847 (15 yrs.)	34	20	55
OXFORD (752; 147.5x33.5x21.5)	Black Ball, Liverpool	1836	Webb & Allen, New York	1836-1850 (14 yrs.)	34	21	47
BURGUNDY (762; 148x33.7x21.5)	Havre	1836	Webb & Allen, New York	1836-1848 (12 yrs.)	34	21	47
	Wrecked November 1848.						
CANADA (525; 131.5x35.3x15.1)	Black Ball, Liverpool; Red Swallowtail, London	1823	Brown & Bell, New York	1823-1835 (12 yrs.)	34	22	62
	Speed average for ten years; two years London service, average 36 days.						
MONTEZUMA (924; 160x35.7x21)	Black Ball, Liverpool	1843	Webb & Allen, New York	1843-1854 (11 yrs.)	34	27	57
	Wrecked May 1854.						
LOUIS PHILIPPE (794; 147.5x34.5x25.5)	Havre	1837	Webb & Allen, New York	1837-1848 (11 yrs.)	34	21	52
	Transport; then sold California.						
CAROLUS MAGNUS (1,349; 196.8x40x20)	Havre	1852	Newcastle, Maine	1853-1863 (10 yrs.)	34	22	53
NAPOLEON (538; 131.8x30x15)	Blue Swallowtail, Liverpool	1827	New Bedford, Mass.	1827-1836 (9 yrs.)	34	26	46
	Wrecked February 1841.						
AURORA (1,639; 201.8x42x29)	Blue Swallowtail, Liverpool	1854	Webb, New York	1854-1859 (5 yrs.)	34	24	44
SAMUEL M. FOX (1,062; 170.3x37x26.5)	Havre	1850	Webb, New York	1851-1855 (4 yrs.)	34	25	43
ALBION (434; 113x29.3x14.7)	Black Ball, Liverpool	1819	Wright, New York	1819-1822 (3 yrs.)	34	27	41
PENNSYLVANIA (808; 148x34.8x21)	Blue Swallowtail, Liverpool	1836	Webb & Allen, New York	1836-1839 (3 yrs.)	34	28	39
	Wrecked January 1839.						
CRISIS (336; 103x27.2x13.6)	Black X, London	1819	Story, Norwich, Conn.	1824-1826 (2 yrs.)	34	30	42
	Lost March 1826.						
AMERICAN EAGLE (899; 158.4x30.3x21.5)	Black X, London	1846	Westervelt & Mackey, New York	1846-1867 (21 yrs.)	35	22	57
CONSTELLATION (1,560; 201.8x41x28)	Red Star, Liverpool	1849	Westervelt & Mackey, New York	1849-1867 (18 yrs.)	35	22	59
SHERIDAN (895; 157.5x35.3x21)	Dramatic, Liverpool	1836	Brown & Bell, New York	1837-1853 (17 yrs.)	35	22	52
SYLVIE DE GRASSE (641; 140.5x31.7x15.8)	Havre	1833	Burgess, Hartford, Conn.	1834-1848 (14 yrs.)	35	20	54
	California 1848; wrecked 1849.						
MANHATTAN (1,299; 182x39.5x24.7)	Black Ball, Liverpool	1849	Webb, New York	1850-1863 (13 yrs.)	35	24	60
GEORGE WASHINGTON (609; 133.5x31.8x15)	Blue Swallowtail, Liverpool	1832	New Bedford, Mass.	1832-1845 (13 yrs.)	35	23	54
NORTHUMBERLAND (817; 150x34x21)	Black X, London	1844	Westervelt & Mackey, New York	1844-1857 (13 yrs.)	35	17	60
	Lost at sea December 1857.						
SHEFFIELD (578; 133x31x15.5)	Red Star, Liverpool	1831	Smith & Dimon, New York	1831-1843 (12 yrs.)	35	21	46
	Wrecked November 1843; rebuilt as whaler.						
WEBSTER (1,727; 206.8x43.5x21.5)	Dramatic, Liverpool	1853	Portsmouth, N.H.	1853-1865 (12 yrs.)	35	27	51
COLUMBIA I (492; 123x29.8x14.9)	Black Ball, Liverpool; Red Swallowtail, London	1821	S. Wright, New York	1822-1833 (11 yrs.)	35	17	66
	London Swallowtail 1827-1833.						

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Name of Packet (with old meas. tonnage; length, beam, and depth in feet)	Line	Year Built	Builder	In Service	Westbound Passages in Days		
					Average	Fastest	Slowest
QUEBEC (653; 137.5x33.5x20.6)	Red Swallowtail, London New Orleans packet 1847-1853.	1836	Bergh, New York	1836-1847 (11 yrs.)	35	27	46
PRINCE ALBERT (884; 158.3x35x21.8)	Red Swallowtail, London	1843	Westervelt & Mackey, New York	1843-1853 (10 yrs.)	35	24	57
ZURICH (817; 150x34.7x21)	Havre Sold British during Civil War.	1844	Webb, New York	1844-1863 (19 yrs.)	35	21	56
ST. DENIS (959; 161.3x36.1x21.2)	Havre Foundered January 1856.	1848	Westervelt & Mackey, New York	1848-1856 (8 yrs.)	35	25	52
FLORIDA (522; 123x30.8x15.4)	Black Ball, Liverpool Sold Philadelphia.	1822	Smith & Dimon, New York	1824-1831 (7 yrs.)	35	26	68
STEPHEN WHITNEY (868; 154x35.2x22.6)	Red Star, Liverpool Wrecked Ireland November 1847.	1839	Bergh, New York	1840-1847 (7 yrs.)	35	23	49
HANNIBAL (440; 117x29x14.5)	Red Swallowtail, London	1822	Fickett & Crockett, New York	1829-1836 (7 yrs.)	35	25	57
ONTARIO I (489; 124.5x29.5x14.8)	Red Swallowtail, London	1830	Webb & Allen, New York	1830-1843 (7 yrs.)	35	22	54
POLAND (546; 131.1x30.3x15.2)	Havre Burned at sea May 1840.	1832	Bergh, New York	1833-1840 (7 yrs.)	35	23	61
CORTES (381; 106.5x28.5x14.3)	Blue Swallowtail, Liverpool Followed with one year in London service; average 40 days.	1820	New Bedford, Mass.	1822-1826 (5 yrs.)	35	24	45
SAMUEL ROBERTSON (421; 113.7x28.8x14.4)	Black X, London Whaler 1835-1859.	1825	Bergh, New York	1833-1834 (2 yrs.)	35	27	46
LIVERPOOL (1,077; 175.5x36.5x22.3)	Liverpool and London lines Record service for years.	1843	Brown & Bell, New York	1843-1880 (37 yrs.)	36	20	60
AMERICAN CONGRESS (863; 162.3x34x17)	Red Swallowtail, London	1849	Newcastle, Maine	1849-1879 (30 yrs.)	36	21	77
ISAAC WEBB (1,359; 188x39.8x28)	Black Ball, Liverpool Foundered in 1880.	1850	Webb, New York	1850-1878 (28 yrs.)	36	25	60
JAMES FOSTER, JR. (1,410; 171.5x40x27.5)	Black Ball, Liverpool Line suspended 1878.	1854	Webb, New York	1854-1878 (24 yrs.)	36	28	42
FRANCOIS I (496; 127.3x29.3x14.7)	Havre Out of service 1839-1841.	1828	Bergh, New York	1828-1847 (17 yrs.)	36	24	56
ALBERT GALLATIN (1,435; 192.5x40.3x20.1)	Blue Swallowtail, Liverpool Sold London 1864.	1849	Webb, New York	1849-1864 (15 yrs.)	36	21	45
MEDIATOR (660; 138.3x32.5x21)	Black X, London New Orleans packet 1849-1860.	1836	Westervelt & Roberts, New York	1837-1849 (13 yrs.)	36	25	54
ST. JAMES (641; 133.8x32.7x20.4)	Red Swallowtail, London Wrecked Ireland November 1848.	1835	Webb & Allen, New York	1835-1848 (13 yrs.)	36	26	46
HELVETIA (971; 169x35.3x17.7)	Havre Sold California.	1850	Kennebunk, Maine	1851-1864 (13 yrs.)	36	28	53

Continued on next page.

Name of Packet (with old meas. tonnage; length, beam, and depth in feet)	Line	Year Built	Builder	In Service	Westbound Passages in Days		
					Average	Fastest	Slowest
TORONTO (631; 135.3x32.2x20.4)	Black X, London New Orleans packet 1849-1851.	1835	Bergh, New York	1835-1848 (13 yrs.)	36	23	50
NORTH AMERICA (610; 134.4x31.4x15.7)	Black Ball, Liverpool Wrecked January 1843.	1831	Brown & Bell, New York	1831-1843 (12 yrs.)	36	22	50
WILLIAM TELL (1,153; 175x37.8x29.2)	Havre	1850	Westervelt & Mackey, New York	1850-1862 (12 yrs.)	36	25	60
COLUMBUS (663; 138.8x32.5x16.3)	Black Ball, Liverpool	1834	Bergh, New York	1834-1845 (11 yrs.)	36	28	50
HENRI IV (427; 116x28.7x14.3)	Havre Wrecked December 1839.	1826	Bergh, New York	1826-1837 (11 yrs.)	36	20	55
PACIFIC II (586; 133.5x31.2x15.3)	Black Ball, Liverpool	1824	Brown & Bell, New York	1824-1834 (10 yrs.)	36	25	52
PRESIDENT (468; 125x28.8x14.3)	Black X, London Wrecked February 1841.	1831	Bergh, New York	1831-1841 (10 yrs.)	36	19	62
SWITZERLAND (567; 136x30.3x20)	Red Swallowtail, London	1836	Brown & Bell, New York	1841-1850 (9 yrs.)	36	28	82
WILLIAM THOMPSON (495; 120x30.4x15.2)	Black Ball, Liverpool Whaler 1830-1863.	1821	Wright, New York	1822-1830 (8 yrs.)	36	20	43
EMERALD (518; 128.5x29.8x20)	Havre Baltimore-Liverpool packet.	1835	Brown & Bell, New York	1838-1846 (8 yrs.)	36	21	51
HUDSON (368; 106x28x14)	Black X, London Whaler 1833-1863; then sold Hawaii.	1822	Fickett, New York	1824-1832 (8 yrs.)	36	25	59
CORINTHIAN (401; 112.5x28.3x14.1)	Swallowtail lines, Liverpool and London Whaler 1831-1868.	1822	Smith & Dimon, New York	1823-1831 (8 yrs.)	36	25	66
HIBERNIA (551; 132x30.3x15.8)	Black Ball, Liverpool Whaler 1844-1861.	1830	Brown & Bell, New York	1830-1837 (7 yrs.)	36	24	50
BAYARD (339; 99x28x14)	Havre Small.	1819	Bergh, New York	1823-1829 (6 yrs.)	36	17	52
DON QUIXOTE (260; 97x24.5x12.3)	Havre Sold Philadelphia; very small.	1823	Bergh, New York	1823-1829 (6 yrs.)	36	30	45
HOWARD (336; 107x26.5x13.3)	Havre Small Savannah packet 1827-1828.	1822	Smith & Dimon, New York	1823-1827 (5 yrs.)	36	26	48
JOHN WELLS (366; 107x27.8x13.8)	Red Star, Liverpool Whaler 1834-1871.	1822	Brown & Bell, New York	1823-1827 (4 yrs.)	36	29	48
ST. ANDREW (651; 137.8x32.3x16.3)	Red Star, Liverpool Wrecked January 1839.	1834	Bergh, New York	1835-1839 (4 yrs.)	36	26	57
DE RHAM (492; 128x29.4x14.7)	Havre Wrecked March 1832.	1829	Bergh, New York	1829-1832 (3 yrs.)	36	29	55
SHAKESPEARE (747; 142.2x34.2x14.1)	Dramatic, Liverpool New Orleans packet before and after.	1835	Brown & Bell, New York	1836-1838 (3 yrs.)	36	27	51

Continued on next page.

Name of Packet (with old meas. tonnage; length, beam, and depth in feet)	Line	Year Built	Builder	In Service	Westbound Passages in Days: Average	Fastest	Slowest
SIR ROBERT PEEL (940; 159.5x36x21.6)	Red Swallowtail, London In service to end of line.	1846	Webb, New York	1846-1880 (34 yrs.)	37	22	56
RHINE (1,037; 165x37.2x27.3)	Red Swallowtail, London In service to end of line; sold Canada 1881.	1850	Westervelt, New York	1854-1880 (26 yrs.)	37	24	51
AMERICAN UNION (1,146; 181x37.1x18.5)	Blue Swallowtail, Liverpool London service 1868.	1851	Damariscotta, Maine	1852-1877 (25 yrs.)	37	21	49
YORKTOWN (1,150; 170x38.7x22.3)	Red Swallowtail, London Damaged and condemned December 1868.	1847	Webb, New York	1847-1868 (21 yrs.)	37	22	53
WESTMINSTER (631; 135.3x32.2x20.4)	Black X, London New Orleans packet 1851-1857.	1835	Bergh, New York	1835-1850 (16 yrs.)	37	20	56
NEW YORK II (862; 152.5x35.3x22)	Black Ball, Liverpool Wrecked December 1856.	1839	Webb & Allen, New York	1839-1854 (15 yrs.)	37	22	73
CALHOUN (1,749; 206.3x42.8x28.6)	Dramatic, Liverpool	1853	Westervelt, New York	1853-1868 (15 yrs.)	37	22	58
EUROPE (618; 137.3x31.5x15.8)	Black Ball, Liverpool	1833	Brown & Bell, New York	1833-1847 (14 yrs.)	37	24	58
NEW YORK I (516; 127x30x15)	Black Ball, Liverpool Greenock packet.	1822	Brown & Bell, New York	1822-1834 (12 yrs.)	37	25	60
SAMSON (484; 128x28.8x14.4)	Red Swallowtail, London Wrecked May 1841.	1831	Bergh, New York	1831-1841 (10 yrs.)	37	27	61
CHARLEMAGNE (442; 124x28x14)	Havre lines Average six years Old Line, 34 days; four years Second Line, 41 days.	1828	Bergh, New York	1828-1838 (10 yrs.)	37	23	59
HOTTINGUER (993; 166x36.2x21.8)	Blue Swallowtail and New lines, Liverpool Wrecked Ireland January 1850.	1841	Westervelt & Mackey, New York	1841-1850 (9 yrs.)	37	28	48
CALEDONIA (647; 136x32.5x16.3)	Black Ball, Liverpool Sold after collision.	1828	Brown & Bell, New York	1828-1836 (8 yrs.)	37	17	50
VILLE de LYON (791; 147x34.5x25.5)	Havre Wrecked France February 1845.	1837	Webb & Allen, New York	1837-1845 (8 yrs.)	37	21	58
ARGO (967; 161x36.3x20.5)	Havre	1841	Webb & Allen, New York	1841-1849 (8 yrs.)	37	25	65
JAMES CROPPER (495; 120x30.4x15.2)	Black Ball, Liverpool Wrecked December 1832.	1821	Wright, New York	1822-1828 (6 yrs.)	37	26	55
BIRMINGHAM (571; 128.8x31.4x15.7)	Red Star, Liverpool Wrecked Valparaiso October 1836.	1825	Porter, New York	1826-1832 (6 yrs.)	37	27	65
JAMES MONROE (424; 118x28.3x14.1)	Black Ball, Liverpool Later whaler; then sold California.	1817	Brown, New York	1818-1823 (5 yrs.)	37	23	54
CADMUS (306; 97.5x26.8x13.3)	Havre Very small whaler 1831-1842.	1818	Wright, New York	1823-1828 (5 yrs.)	37	30	51
GEORGE CANNING (551; 131x30.5x13.3)	Blue Swallowtail, Liverpool Wrecked New Jersey January 1832.	1827	Brown & Bell, New York	1828-1832 (4 yrs.)	37	21	56
LEWIS (412; 111.5x28.8x14.4)	Havre Wrecked New Jersey March 1827.	1822	Brown, New York	1823-1827 (4 yrs.)	37	29	48

Continued on next page.

Name of Packet (with old meas. tonnage; length, beam, and depth in feet)	Line	Year Built	Builder	In Service	Westbound Passages in Days		
					Average	Fastest	Slowest
NORMANDIE (500; 130.5x29x14.5)	Havre Lost December 1844.	1833	Smith, Hartford, Conn.	1834-1837 (3 yrs.)	37	26	48
VICTORIA (860; 155.8x35x21.8)	Black X, London Sold British Civil War.	1843	Westervelt & Mackey, New York	1843-1864 (21 yrs.)	38	24	84
SULLY (456; 120x28.8x14.3)	Havre	1827	Bergh, New York	1827-1846 (19 yrs.)	38	25	62
ST. NICHOLAS (797; 148x34.5x21.4)	Havre	1841	Westervelt & Mackey, New York	1841-1859 (18 yrs.)	38	23	63
ORIENT (1,560; 201x41x20)	Dramatic, Liverpool	1852	Portsmouth, N. H.	1853-1867 (15 yrs.)	38	20	51
LONDON (1,145; 170x38.5x22.3)	Red Swallowtail, London	1848	Webb, New York	1848-1863 (15 yrs.)	38	23	85
HENDRIK HUDSON (823; 151x34.7x21.5)	Black X, London Foundered 1855.	1841	Westervelt & Mackey, New York	1841-1855 (14 yrs.)	38	21	56
GLADIATOR (649; 137.5x32.3x20.5)	Red Swallowtail, London Whaler 1850-1854.	1835	Bergh, New York	1836-1850 (14 yrs.)	38	27	62
DUCHESSE d'ORLEANS (798; 155.5x34.2x20.5)	Havre Baltimore 1866.	1838	Webb & Allen, New York	1838-1852 (14 yrs.)	38	24	67
CAMBRIDGE (798; 156.5x34.2x21.5)	Black Ball, Liverpool Sold Baltimore.	1837	Webb & Allen, New York	1837-1850 (13 yrs.)	38	23	57
GERMANIA (996; 170.7x35.5x17.7)	Havre	1850	Portsmouth, N. H.	1850-1863 (13 yrs.)	38	26	52
RHONE (471; 128x28.4x14.2)	Havre Baltimore packet.	1831	Bergh, New York	1831-1843 (12 yrs.)	38	30	57
ROSCOE (622; 134.7x32x16)	Blue Swallowtail, Liverpool Baltimore packet.	1832	Smith & Dimon, New York	1832-1843 (11 yrs.)	38	24	59
MONTREAL (542; 132x30x15)	Black X, London Whaler 1850-1862.	1833	Bergh, New York	1833-1844 (11 yrs.)	38	22	47
BRITANNIA (630; 132.8x32.5x16.3)	Black Ball, Liverpool	1826	Brown & Bell, New York	1826-1835 (9 yrs.)	38	28	59
MONTANO (365; 104.5x28.2x14.1)	Havre Whaler 1829-1849; sold California 1849.	1822	Brown, New York	1822-1829 (7 yrs.)	38	28	59
MARMION (277; 94.3x25.8x13)	Havre Exceptionally small.	1811	Baltimore	1823-1824 (2 yrs.)	38	26	46
CONSTANTINE (1,161; 186.8x36.6x18.3)	Blue Swallowtail, Liverpool London line 1868-1880.	1850	Portsmouth, N. H.	1850-1867 (31 yrs.)	39	27	54
ASHBURTON (1,015; 166.7x36.5x21.8)	Blue Swallowtail, Liverpool Record slow passage.	1842	Westervelt & Mackey, New York	1842-1863 (21 yrs.)	39	25	89
ALBANY (468; 126.2x28.6x14.3)	Havre	1831	Bergh, New York	1831-1847 (16 yrs.)	39	27	64
BALTIMORE (658; 139x32.3x22)	Havre	1837	Westervelt & Roberts, New York	1837-1851 (14 yrs.)	39	22	78
SILAS RICHARDS (454; 120x29x14.5)	Blue Swallowtail, Liverpool Whaler 1841-1854.	1824	I. Webb Co., New York	1824-1834 (10 yrs.)	39	25	67
ONEIDA (791; 154.5x34x22.3)	Havre Wrecked January 1850.	1841	Westervelt & Mackey, New York	1841-1850 (9 yrs.)	39	28	59

Continued on next page.

Name of Packet (with old meas. tonnage; length, beam, and depth in feet)	Line	Year Built	Builder	In Service	Westbound Passages in Days		
					Average	Fastest	Slowest
HAVRE I (480; 126x29x14.5)	Havre	1828	Smith & Dimon, New York	1829-1837 (8 yrs.)	39	22	49
	Burned February 1839.						
BRIGHTON (354; 105.3x27.5x13.3)	Red Swallowtail, London	1824	Crockett, New York	1824-1831 (7 yrs.)	39	26	52
	Whaler 1835-1859.						
AMITY (382; 106.5x28.5x14.3)	Black Ball, Liverpool	1816	Cheeseman, New York	1818-1824 (6 yrs.)	39	22	58
	Wrecked New Jersey April 1824.						
STEPHANIA (315; 97x27.2x13.6)	Havre	1819	Brown, New York	1822-1828 (6 yrs.)	39	28	61
	Whaler 1828-1868; then sold Australia.						
SOVEREIGN (462; 124.2x28.7x14.3)	Black X, London	1830	Bergh, New York	1830-1835 (5 yrs.)	39	22	57
	Wrecked New Jersey February 1835.						
EDWARD BONAFFE (325; 102x26.8x13.4)	Havre	1824	Bergh, New York	1825-1830 (5 yrs.)	39	29	57
	Sold Philadelphia.						
DESDEMONA (294; 97.5x26.2x13.1)	Havre	1823	Middletown, Conn.	1824-1826 (2 yrs.)	39	35	49
	Extremely small; whaler 1833-1892.						
UTICA (525; 131.2x29.7x14.8)	Havre	1833	Bergh, New York	1833-1848 (15 yrs.)	40	35	59
FORMOSA (450; 119x29x14.5)	Havre	1829	Fickett & Thomas, New York	1829-1838 (9 yrs.)	40	27	58
	Whaler 1844-1850.						
PANTHEA (370; 106x28.1x14)	Red Star, Liverpool	1821	Fickett & Crockett, New York	1822-1827 (5 yrs.)	40	29	63
	Wrecked Wales January 1827.						
WILLIAM BYRNES (517; 123x30.7x15.3)	Red Star, Liverpool	1823	Brown, New York	1826-1831 (5 yrs.)	40	28	51
SILVANUS JENKINS (547; 127.3x31x15)	Red Star, Liverpool	1825	Morgan, New York	1828-1832 (4 yrs.)	40	28	48
QUEEN MAB (270; 92x25x13.3)	Havre	1824	Morgan, New York	1824-1828 (4 yrs.)	40	28	49
	Extremely small Savannah trader.						
METEOR (325; 106.4x26.1x13)	Red Star, Liverpool	1819	Newburyport, Mass.	1822-1825 (3 yrs.)	40	30	51
	Whaler 1827-1865.						
CHARLES CARROLL (411; 121.2x27.3x13.7)	Havre	1828	Bergh, New York	1828-1840 (12 yrs.)	41	30	66
	Whaler 1844-1862.						
JOHN JAY (502; 124x30x15)	Red Star, Liverpool	1827	Brown & Bell, New York	1827-1834 (7 yrs.)	41	24	59
	Whaler 1842-1849; sold California.						
SPLENDID (642; 130x33x22.8)	Havre	1846	Webb, New York	1847-1853 (6 yrs.)	41	21	73
ONTARIO II (1,501; 200x40x27.5)	Blue Swallowtail, Liverpool	1853	Webb, New York	1854-1858 (4 yrs.)	41	29	56
	London service 1858-1863.						
ACASTA (330; 99x27.6x13.8)	Black X, London	1818	Athens, N. Y.	1824-1828 (4 yrs.)	41	27	60
	Whaler 1828-1840.						
CAMBRIA (362; 108.2x27.5x13.8)	Black X, London	1826	Kensington, Pa.	1827-1832 (4 yrs.)	41	30	48
	Whaler 1832-1862; sold Britain.						
FRANCIS DEPAU (595; 133x31.5x15.8)	Havre	1833	Brown & Bell, New York	1833-1836 (3 yrs.)	41	29	79

Continued on next page.

Name of Packet (with old meas. tonnage; length, beam, and depth in feet)	Line	Year Built	Builder	In Service	Westbound Passages in Days		
					Average	Fastest	Slowest
COURIER (381; 103.5x29x14.5)	Black Ball, Liverpool	1817	Wright, New York	1818-1820 (2 yrs.)	41	30	60
	Whaler 1828-1861; sunk "Stone Fleet" 1861.						
HERCULES (334; 103x27x13.5)	Red Star, Liverpool	1816	Lozier, New York	1822-1823 (2 yrs.)	41	33	52
	Whaler 1827-1865.						
ERIE (451; 125x28.2x14.1)	Havre	1829	Bergh, New York	1829-1840 (11 yrs.)	42	24	82
	Very slow; whaler 1847-1862.						
FRANCE (411; 116.5x28x14)	Havre	1827	Bergh, New York	1827-1837 (10 yrs.)	42	31	55
	Whaler 1837-1846.						
EDWARD QUESNEL (388; 106x28.8x14.4)	Havre	1824	Bergh, New York	1824-1831 (7 yrs.)	42	27	61
	Whaler 1832-1839.						
WILLIAM NELSON (1,039; 174x36x18)	Havre	1850	Somerset, Mass.	1856-1863 (7 yrs.)	42	38	50
	Burned July 1865.						
NESTOR (481; 114.8x30.8x15.4)	Black Ball, Liverpool	1815	Lozier, New York	1820-1824 (4 yrs.)	42	27	57
	Wrecked December 1824.						
MANHATTAN (390; 110x28.3x14.1)	Red Star, Liverpool	1818	Wright, New York	1822-1826 (4 yrs.)	42	31	67
	Whaler 1830-1856; sunk "Stone Fleet" 1861.						
ROBERT EDWARDS (355; 103x28x14)	Black X, London	1817	Cheeseman, New York	1827-1830 (3 yrs.)	42	36	57
	Sold Rhode Island parties.						
CHRISTIANA (666; 140x32.4x20.3)	Red Swallowtail, London	1846	New York	1853-1861 (8 yrs.)	43	30	70
	Very slow "later" packet.						
MANCHESTER (561; 127x31.4x15.7)	Black Ball, Liverpool	1825	Brown & Porter, New York	1825-1834 (9 yrs.)	44	28	59
	Havre Old Line 1832-1834.						
HENRY (257; 93.5x25x14)	Havre	1822	Brown & Bell, New York	1823-1826 (4 yrs.)	44	38	53
	Exceedingly small. Savannah packet 1827-1832.						
ROBERT FULTON (340; 103.3x27.2x13.6)	Blue Swallowtail, Liverpool	1818	Brooks, Boston	1822-1824 (3 yrs.)	44	37	60
	Wrecked October 1830.						
ORBIT (384; 108x28.3x14.2)	Black Ball, Liverpool	1821	Brown & Bell, New York	1822-1824 (2 yrs.)	46	42	52
	Sold Baltimore.						
PACIFIC I (384; 110x28x14)	Black Ball, Liverpool	1807	Brown, New York	1818-1819 (2 yrs.)	49	45	61
	Whaler 1819-1882; a long life.						

ELLEN AUSTIN—1,626 tons; built at Damariscotta, Maine, in 1854 for the Liverpool Dramatic Line. Entered Atlantic service 1856; was in London Swallowtail Line after Civil War; served until end of line in 1881.

LIVERPOOL—496 tons; an earlier vessel built in 1822 by S. Wright, New York, for the Liverpool Black Ball Line. She was sunk by an iceberg July 25, 1822, on her maiden voyage.

PARIS—338 tons; built by C. Bergh, New York, 1823. She made one passage westbound in 38 days and was wrecked near Cherbourg on her second eastbound trip.

PLYMOUTH ROCK—973 tons; built in 1849 in Boston; was in service for twenty-four years (1856-1880) as a transatlantic packet in the London Red Swallowtail Line and Train's Boston-Liverpool line. No record of her average time of westbound passages, but her shortest passage is reported as 22 days.

WILLIAM FROTHINGHAM—830 tons; built in 1851 by White & Connor, Belfast, Maine. Operated between 1857 and 1868 (eleven years) in the service of the Havre Second Line.

An Analysis of the Size, Dimensions, Proportions, and Speed of the New York Transatlantic Sailing Packets in Service of Ten Regular and Duly Qualified Packet Lines during the Sailing Packet Era 1818-1858

Largest and Smallest Sailing Packets in Regular New York Transatlantic Service—1818-1858

Largest			Smallest		
Name of Packet	Tonnage	Year Built	Name of Packet	Tonnage	Year Built
AMAZON	1,771	1854	HENRY	257	1822
PALESTINE	1,751	1854	DON QUIXOTE	260	1823
CALHOUN	1,749	1853	QUEEN MAB	270	1824
WEBSTER	1,727	1853	MARMION	277	1811
AURORA	1,639	1854	DESDEMONA	294	1823
ELLEN AUSTIN	1,626	1854	CADMUS	306	1818
ORIENT	1,560	1852	STEPHANIA	315	1819
CONSTELLATION	1,560	1849	METEOR	325	1819
ONTARIO II	1,501	1853	EDWARD BONAFFE	325	1824
GREAT WESTERN	1,443	1851	ACASTA	330	1818
ALBERT GALLATIN	1,435	1849	HERCULES	334	1816
JAMES FOSTER, JR.	1,410	1854	CRISIS	336	1819
NEPTUNE	1,406	1854	HOWARD	336	1822
HARVEST QUEEN	1,383	1854	PARIS	338	1823
ISAAC WEBB	1,359	1850	BAYARD	339	1819
MERCURY	1,350	1851	ROBERT FULTON	340	1818
CAROLUS MAGNUS	1,349	1852	BRIGHTON	354	1824
CONSTITUTION	1,327	1846	ROBERT EDWARDS	355	1817
SOUTHAMPTON	1,299	1849	CAMBRIA	362	1826

Longest and Shortest Sailing Packets in Regular New York Transatlantic Service—1818-1858

Longest			Shortest		
Name of Packet	Length	Year Built	Name of Packet	Length	Year Built
	Feet			*Feet*	
AMAZON	216	1854	QUEEN MAB	92	1824
PALESTINE	213.8	1854	HENRY	93.5	1822
ELLEN AUSTIN	209.8	1854	MARMION	94.3	1811
WEBSTER	206.8	1853	STEPHANIA	97	1819
CALHOUN	206.3	1853	DON QUIXOTE	97	1823
CONSTELLATION	201.8	1849	DESDEMONA	97.5	1823
AURORA	201.8	1854	CADMUS	97.5	1818
ORIENT	201	1852	ACASTA	99	1818
ONTARIO II	200	1853	BAYARD	99	1819
CAROLUS MAGNUS	196.8	1852	EDWARD BONAFFE	102	1824
MERCURY	193.5	1851	HERCULES	103	1816
GREAT WESTERN	191.5	1851	CRISIS	103	1819
NEPTUNE	191	1855	ROBERT EDWARDS	103	1817
HARVEST QUEEN	188.3	1854	ROBERT FULTON	103.3	1818
ISAAC WEBB	188	1850	COURIER	103.5	1817
CONSTANTINE	186.8	1850	MONTANO	104.5	1822

Widest and Narrowest Sailing Packets in Regular New York Transatlantic Service—1818-1858

Widest (Greatest Beam)			Narrowest (Smallest Beam)		
Name of Packet	Beam	Year Built	Name of Packet	Beam	Year Built
	Feet			*Feet*	
WEBSTER	43.5	1853	DON QUIXOTE	24.5	1823
CALHOUN	42.8	1853	HENRY	25	1822
AMAZON	42	1854	QUEEN MAB	25	1824
PALESTINE	42	1854	MARMION	25.8	1811
AURORA	42	1854	METEOR	26.1	1819
CONSTELLATION	41	1849	DESDEMONA	26.2	1823
ORIENT	41	1852	HOWARD	26.5	1822
ELLEN AUSTIN	40.7	1854	CADMUS	26.8	1818
NEW WORLD	40.5	1846	HERCULES	27.1	1816
GREAT WESTERN	40.5	1851	ROBERT FULTON	27.2	1818
ALBERT GALLATIN	40.3	1849	CRISIS	27.2	1819
HARVEST QUEEN	40	1854	STEPHANIA	27.3	1819
JAMES FOSTER, JR.	40	1854	PARIS	27.3	1823
ONTARIO II	40	1849	CHARLES CARROLL	27.3	1828
NEPTUNE	40	1855	BRIGHTON*	27.5	1824

* The CAMBRIA, built in 1826, also had a beam of 27.5 feet.

An analysis of the average size, proportions, and speed of 188 recognized regular packets operating in the New York-European ports (Liverpool, London, and Havre) service during the transatlantic sailing packet era of 1818-1858 is of interest. The following table shows the number of such sailing packets built during the period 1807-1855 inclusive that were in regular service on the New York run during what may be termed the transatlantic sailing packet era, the average tonnage of such vessels, and the average ratio of the two prime registered dimensions—length and beam; also totals and averages for five- and ten-year periods:

Year Built	No. of Vessels	Average Tonnage	Average Ratio L. to B.	No. of Vessels	Average Ratio L. to B.	No. of Vessels	Average Ratio L. to B.
1807	1	384	3.93				
1811	1	277	3.65	2	3.790		
1815	1	481	3.72				
1816	2	358	3.77				
1817	3	387	3.81				
1818	4	342	3.73				
1819	5	350	3.74	15	3.754	17	3.758
1820	1	381	3.73				
1821	5	447	3.91				
1822	10	398	3.94				
1823	5	401	3.81				
1824	7	401	3.94	28	3.903		
1825	4	525	4.05				
1826	3	473	4.02				
1827	5	492	4.23				
1828	5	495	4.34				
1829	3	464	4.22	20	4.188	48	4.022
1830	3	501	4.30				
1831	6	513	4.38				
1832	6	590	4.25				
1833	8	581	4.37				
1834	4	694	4.26	27	4.321		
1835	6	636	4.20				
1836	8	749	4.35				
1837	6	777	4.37				
1838	2	914	4.57				
1839	5	840	4.41	27	4.349	54	4.335

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Year Built	No. of Vessels	Average Tonnage	Average Ratio L. to B.	No. of Vessels	Average Ratio L. to B.	No. of Vessels	Average Ratio L. to B.
1840	—	—	—				
1841	5	874	4.44				
1842	1	1,015	4.56				
1843	6	983	4.42				
1844	3	871	4.56	15	4.464		
1845	4	966	4.56				
1846	10	966	4.56				
1847	4	1,087	4.51				
1848	3	1,084	4.48				
1849	6	1,274	4.67	27	4.583	42	4.556
1850	11	1,113	4.76				
1851	4	1,253	4.80				
1852	2	1,454	4.91				
1853	4	1,616	4.90				
1854	5	1,591	4.81	26	4.809		
1855	1	1,406	4.78	1	4.780	27	4.808
Total	188	Av.= 756 tons	Av.=4.32	188	4.32	188	4.32

The following tables record the sailing packets built with the largest and the smallest ratio of length to beam for each of five stated periods of construction:

A. *Sailing Packets Built 1807-1819 Inclusive*

Largest Ratio L. to B.				Smallest Ratio L. to B.			
Name	Year Built	Tonnage	Ratio L. to B.	Name	Year Built	Tonnage	Ratio L. to B.
JAMES MONROE	1817	424	4.17	BAYARD	1819	339	3.53
METEOR	1819	325	4.07	STEPHANIA	1819	315	3.56
PACIFIC I	1807	384	3.93	COURIER	1817	381	3.57
MANHATTAN	1818	390	3.88	ACASTA	1818	330	3.60
ALBION	1819	434	3.85	CADMUS	1818	306	3.64
HERCULES	1816	334	3.81	MARMION	1811	277	3.65
ROBERT FULTON	1818	340	3.80	CRISIS	1819	336	3.67

B. *Sailing Packets Built 1820-1829 Inclusive*

CHARLES CARROLL	1828	411	4.44	DON QUIXOTE	1823	260	3.66
CHARLEMAGNE	1828	442	4.43	QUEEN MAB	1824	270	3.68
ERIE	1829	451	4.43	EDWARD QUESNEL	1824	388	3.68
NAPOLEON	1827	538	4.39	MONTANO	1822	365	3.70
DE RHAM	1829	492	4.35	CANADA	1823	525	3.72
FRANCOIS I	1828	496	4.34	DESDEMONA	1823	294	3.72
HAVRE I	1828	480	4.34	CORTES	1820	381	3.73

C. *Sailing Packets Built 1830-1839 Inclusive*

ROSCIUS	1838	1,030	4.61	ST. JAMES	1835	641	4.09
CAMBRIDGE	1837	798	4.57	QUEBEC	1836	653	4.10
PATRICK HENRY	1839	880	4.57	ENGLAND	1834	729	4.13
DUCHESSE d'ORLEANS	1838	798	4.54	SHAKESPEARE	1835	747	4.16
RHONE	1831	471	4.51	VIRGINIAN	1832	616	4.17
NORMANDIE	1833	500	4.50	GEORGE WASHINGTON	1832	609	4.20
SWITZERLAND	1836	567	4.49	TORONTO / WESTMINSTER	1835	631	4.20
GARRICK / SHERIDAN / SIDDONS	1836	895	4.46				

Continued on next page.

D. *Sailing Packets Built 1840-1849 Inclusive*

Largest Ratio L. to B.				Smallest Ratio L. to B.			
Name	Year Built	Tonnage	Ratio L. to B.	Name	Year Built	Tonnage	Ratio L. to B.
JOHN R. SKIDDY	1845	980	4.94	SPLENDID	1846	642	3.94
CONSTELLATION	1849	1,560	4.92	ST. NICHOLAS	1841	797	4.29
MARGARET EVANS	1846	899	4.90	ZURICH	1844	817	4.32
AMERICAN EAGLE	1846	899	4.90	CHRISTIANA	1846	666	4.32
LIVERPOOL	1843	1,077	4.81	FIDELIA	1845	895	4.33
HENRY CLAY	1845	1,207	4.78	HENDRIK HUDSON	1841	823	4.35
QUEEN OF THE WEST	1843	1,160	4.77	GALLIA	1849	1,190	4.36
ALBERT GALLATIN	1849	1,435	4.77	YORKTOWN	1847	1,150	4.39
AMERICAN CONGRESS	1849	863	4.77	LONDON	1848	1,145	4.41
COLUMBIA II	1846	1,050	4.64	NORTH-UMBERLAND	1844	817	4.41

E. *Sailing Packets Built 1850-1855 Inclusive*

Name	Year Built	Tonnage	Ratio L. to B.	Name	Year Built	Tonnage	Ratio L. to B.
AMAZON	1854	1,771	5.14	JAMES FOSTER, JR.	1854	1,410	4.29
CONSTANTINE	1850	1,161	5.10	RHINE	1850	1,037	4.43
PALESTINE	1854	1,751	5.09	OCEAN QUEEN	1850	1,182	4.56
PHOENIX	1853	1,487	5.02	SAMUEL M. FOX	1850	1,062	4.60
ONTARIO II	1853	1,501	5.00	ISAAC BELL	1851	1,072	4.62
CORNELIUS GRINNELL	1850	1,117	5.00	WILLIAM TELL	1850	1,153	4.63
MERCURY	1851	1,350	4.98	HARVEST QUEEN	1854	1,383	4.71
CAROLUS MAGNUS	1852	1,349	4.92	ISAAC WEBB	1850	1,359	4.72
UNDERWRITER	1850	1,168	4.92	GREAT WESTERN	1851	1,443	4.73
ORIENT	1852	1,560	4.90	WEBSTER	1853	1,727	4.75

RECAPITULATION

The following are the regular sailing packets in the New York transatlantic trade during the sailing packet era 1818-1858 (built during the years 1807-1855 inclusive) with the largest and smallest ratios of the two prime registered dimensions, length and beam, and a record of their sailing performances on the westbound passages:

Largest Ratio Length to Beam

Name of Packet	Year Built	Tonnage	Ratio L. to B.	Years of Service	Westbound Passages in Days—Port to Port: Average	Fastest	Slowest
AMAZON	1854	1,771	5.14	14	28	24	36
CONSTANTINE	1850	1,161	5.10	31	39	27	54
PALESTINE	1854	1,751	5.09	7	30	25	36
PHOENIX	1853	1,487	5.02	2	31	26	35
ONTARIO II	1853	1,501	5.00	4	41	29	56
CORNELIUS GRINNELL	1850	1,117	5.00	31	33	24	48
MERCURY	1851	1,350	4.98	18	33	23	49
JOHN R. SKIDDY	1845	980	4.94	5	32	25	44
CONSTELLATION	1849	1,560	4.92	18	35	22	59
CAROLUS MAGNUS	1852	1,349	4.92	10	34	22	53
UNDERWRITER	1850	1,168	4.92	16	33	22	46
ORIENT	1852	1,560	4.90	15	38	20	51
MARGARET EVANS	1846	899	4.90	17	33	22	51
AMERICAN EAGLE	1846	899	4.90	21	35	22	57

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Smallest Ratio Length to Beam

Name of Packet	Year Built	Tonnage	Ratio L. to B.	Years of Service	Westbound Passages in Days—Port to Port: Average	Fastest	Slowest
BAYARD	1819	339	3.53	6	36	17	52
STEPHANIA	1819	315	3.56	6	39	28	61
COURIER	1817	381	3.57	2	41	30	60
ACASTA	1818	330	3.60	4	41	27	60
CADMUS	1818	306	3.64	5	37	30	51
MARMION	1811	277	3.65	2	38	26	46
DON QUIXOTE	1823	260	3.66	6	36	30	45
CRISIS	1819	336	3.67	2	34	30	42
QUEEN MAB	1824	270	3.68	4	40	28	49
ROBERT EDWARDS	1817	355	3.68	3	42	36	57
EDWARD QUESNEL	1824	388	3.68	7	42	27	61
MONTANO	1822	365	3.70	7	38	28	59
CANADA	1823	525	3.72	12	34	22	62
DESDEMONA	1823	294	3.72	2	39	35	49
NESTOR	1815	481	3.72	4	42	27	57
CORTES	1820	381	3.73	5	35	24	45
AMITY	1816	382	3.73	6	39	22	58
HENRY	1822	257	3.74	4	44	38	53

The averages of the various groups of relatively large and small ratios of length to beam with respect to length of westbound passages are stated herewith:

Ratio Length to Beam	Number of Packets in Group	Average Year Built	Average Tonnage	Averages—Westbound Passages in Days—Port to Port: Average	Fastest	Slowest
5.00 - 5.14	6	1852	1,465	33.7	25.8	44.2
4.90 - 4.99	8	1849	1,221	34.1	22.3	51.3
4.90 - 5.14	14	1850	1,325	33.9	23.8	48.2
3.71 - 3.74	6	1820	387	38.8	28.0	54.0
3.61 - 3.70	8	1820	320	38.4	29.4	51.2
3.53 - 3.60	4	1818	341	39.2	25.5	58.2
3.53 - 3.74	18	1819	347	38.7	28.0	53.7

The average ratio, length to beam, of the fourteen packets with the greatest length in relation to beam is 4.98 to 1, and the average ratio of the eighteen packets with the smallest length in relation to beam is 3.66 to 1. The relation of the tonnage of the long-ratio group to the short-ratio group is, however, 3.82 to 1, and the larger and longer-ratio ships were built on the average thirty-one years after the smaller and chunkier group. In the realm of speed, the individual records of fourteen of the larger-ratio (length to beam) vessels—with an advantage of an average of 1,325 tons register as against only 347 tons and an average building date of 1850 as against 1819—show an average length of passage westbound of 33.9 days as against 38.7 days average of the eighteen packets of small ratio (length to beam), a reduction for the larger, later-built, and higher-ratio (length to beam) ships of 4.8 days, or 12.4 per cent. The average length of passage of the fastest westbound crossing of the fourteen larger-ratio ships is 23.8 days as against 28.0 days for the eighteen chunkier ships, a difference in favor of the later-built, larger, and relatively narrower vessels of 4.2 days, or 15 per cent. The average length of passage of the slowest westbound crossings of the larger ships is 48.2 days and the smaller and relatively beamier vessels, 53.7 days—a reduction for the larger and relatively narrower group of 5.5 days, or 10.2 per cent.

This extreme group of older, smaller, and relatively beamier packets, on the generally hazardous westbound transatlantic run, conceded on an average only a little over 12 per cent in speed to the extreme group of relatively narrower vessels, as set forth in this comparison, which sailing packets averaged 36 per cent increased ratio of length to beam, with an increase of 282 per cent in size (i.e., tonnage), and further enjoyed the benefit of thirty-one years in modernity of construction.

Whereas nine of the fourteen larger, relatively narrower, and later-built packets—and only two of the eighteen smaller, relatively beamier, and older packets—showed average westbound transatlantic passages of 34 days or better, the fastest single westward crossing of the entire thirty-two ships was made in 17 days by the sailing packet with the smallest ratio, length to beam. Two other small and chunky packets made passages of 22 days westbound, which five of the group of larger, relatively more narrow, and much later-built ships equaled, but only one (the *Orient*) bettered. Of the group of eighteen old and chunky packets, one-third never made a westward passage of longer than 50 days' duration; whereas one-half of the larger and relatively narrower vessels made slow passages of 51 days to 59 days. The *Yorkshire,* the acknowledged speed queen of transatlantic sailing packets, with a record westbound of 16 days (port to port), made one slow voyage west of 58 days, a performance that was never equaled for slowness by two-thirds of the herein recorded relatively beamy and chunky sailing packets that averaged slightly less than one-third her size and were built (on the average) twenty-four years earlier.

In these comparisons of the sailing performances in service of these transatlantic packets, it is well to bear in mind that the average length of service in the Atlantic "shuttle" for the small, old, and chunky ships was only five years (maximum twelve years; minimum two years); whereas the average length of service of the larger, later-built, and relatively narrower ships was approaching fifteen years (maximum thirty-one years; minimum two years), or about three times as long. Comparisons of the sailing performances of ships covering periods of such pronounced difference—as to both total average and the range in each group—are not as true as they would be if the ships had sailed in the trade the same number of years; but, as a matter of fact, neither are the sailing performances of one year or of one decade or quarter-century truly comparable with those of any other one year, decade, or quarter-century. The reason why the smaller, earlier-built, and relatively beamier sailing packets did not have the much longer years of service of the larger and relatively narrower packets, built on an average thirty-one years later, is that the old vessels soon proved too small to handle economically the trade demands of the service. Larger packets were built, as decade succeeded decade, to handle the freight available for shipping both ways and the large emigrant movement on the westward crossing.

Experience with sailing vessels in the North Atlantic proved the amazing seaworthiness of very small packets of from 250 to 400 tons, provided they were built with a relatively big beam. Indeed, it can be said that it is beam and not length that is the prime dimension as far as seagoing qualities are concerned. A good beam, with a good full midship section and with ends (or an entrance and run) modeled with an eye to seaworthiness and dryness, as well as to speed and carrying capacity, is of infinitely more importance in the making of a successful North Atlantic sailing ship than narrowing a vessel in the supposed interest of speed or giving a hoped-to-be fast sailer a small area of midship section, i.e., a big deadrise and a rounding easy bilge.

The following table shows the ratio of length to beam for varying registered tonnage of the transatlantic sailing packets in regular service during the period 1818-1858 between New York and Liverpool, Portsmouth (for London), or Havre, under the flag of a firmly established and successful packet line:

Tonnage Range	No. of Ships	Average Ratio Length to Beam	Tonnage Range	No. of Ships	Average Ratio Length to Beam
200 - 299	5	3.690	1,000 - 1,099	9	4.620
300 - 399	24	3.772	1,100 - 1,199	12	4.681
400 - 499	29	4.166	1,200 - 1,299	3	4.653
500 - 599	22	4.236	1,300 - 1,399	5	4.782
600 - 699	21	4.223	1,400 - 1,499	6	4.702
700 - 799	13	4.355	1,500 - 1,599	3	4.940
800 - 899	19	4.494	1,600 - 1,699	1	4.800
900 - 999	12	4.591	1,700 - 1,799	4	4.950
			TOTAL	188	4.32

Considering the average time of all westbound passages of all sailing packets as an index of average speed while the ships were in the transatlantic packet service, the following table shows the relation of the ratio of length to beam to speed:

Average Length of Passages Westward Crossing	No. of Ships with This Stated Average Passage Record	Average Ratio—Length to Beam—of the Packets with the Stated Average Passage Record	Average Length of Passages Westward Crossing	No. of Ships with This Stated Average Passage Record	Average Ratio—Length to Beam—of the Packets with the Stated Average Passage Record
Days			*Days*		
28	1	5.14	38	16	4.33
29	1	4.60	39	13	4.18
30	3	4.60	40	7	4.02
31	5	4.75	41	9	4.07
32	9	4.49	42	8	4.05
33	20	4.54	43	1	4.32
34	19	4.39	44	2	3.77
35	21	4.34	46	1	3.81
36	29	4.27	49	1	3.93
37	22	4.31	TOTAL	188	4.32

The relation of the longest and the shortest westward passage of a transatlantic sailing packet to her average length of passage is of interest. Evidently, the slow packets were naturally apt to be consistent performers in the length of voyage westbound, but some of the larger and faster ships held splendid records for relative uniformity of length of passages throughout the year. Of the twenty-two recorded westbound slow-voyage sailing packets, it is significant that the three ships with the lowest ratio of slowest crossing to average crossing were also the three packets with the lowest ratio of fastest crossing to average crossing, and all held rather poor all-time averages for westbound passages as set forth herewith:

Name of Packet	Tonnage	Year Built	Packet Period	No. of Years in Service	Ratio of Slowest Crossing to Average Crossing	Ratio of Slowest Crossing to Fastest Crossing	All-time Average Crossing in Days
MANHATTAN	390	1818	1822-1826	4	1.60	2.16	42
CHARLES CARROLL	411	1828	1828-1840	12	1.61	2.20	41
CHRISTIANA	666	1846	1853-1861	8	1.63	2.33	43

These three sailing packets were among the last twenty-two of the 188 recorded as regular packets on established lines engaged in service between Liverpool and London (Portsmouth), England, and Havre, France, in Europe and the American port of New York; i.e., they appear among the slowest 11.9 per cent of the packets in the service based on the average time of transatlantic crossings westbound.

Of the eight fastest transatlantic sailing packets during the period 1818-1858 based on the average length of crossings westbound, four have very fine records for uniformity of length of passages, which means, therefore, for a relatively high sustained speed in practical service during the return, or "uphill," part of the run.

Name of Packet	Tonnage	Year Built	Packet Period	No. of Years in Service	Ratio of Slowest Crossing to: Average Crossing	Ratio of Slowest Crossing to: Fastest Crossing	All-time Average Crossing in Days
AMAZON	1,771	1854	1854-1868	14	1.28	1.50	28
PALESTINE	1,751	1854	1854-1861	7	1.20	1.44	30
PHOENIX	1,487	1853	1856-1858	2	1.13	1.35	31
NEPTUNE	1,406	1855	1855-1877	22	1.16	1.38	31

The uniformity of the *Phoenix's* westbound passages is amazing and seemingly almost incredible; unfortunately, the period of service was only two years, but this clipper packet, built at Portland, Maine, had a difference of only four days in the length of her slowest and of her average westward crossings and a difference of only nine days between her fastest run of 26 days and her slowest crossing of 35 days. The *Amazon* and the *Palestine* were the largest of the Western Ocean sailing packets, and the *Phoenix* and *Neptune* were among the largest of the packets in the service. Moreover, these four large packets, with splendid records for uniformity of sailing, were all built in the period of 1853-1855 inclusive.

Four of the five slowest New York transatlantic sailing packets were small old ships of between only 257 tons and 384 tons. All were built between 1807 and 1822 and saw service (each of from two to four years) between the years 1818 and 1826. The record of these packets with respect to uniformity of length of voyages on westbound passages is stated herewith, together with other prominent records of uniformity as made by certain vessels in the relatively fast, medium, and slow groups:

Name of Packet	Tonnage	No. of Years in Service	Ratio of Slowest Crossing to: Average Crossing	Ratio of Slowest Crossing to: Fastest Crossing	All-time Average Crossing in Days
Very Slow					
PACIFIC I	384	2	1.24	1.35	49
ORBIT	384	2	1.13	1.24	46
ROBERT FULTON	340	3	1.36	1.62	44
HENRY	257	4	1.20	1.39	44
Relatively Slow					
METEOR	325	3	1.27	1.70	40
HERCULES	334	2	1.27	1.57	41
WILLIAM NELSON	1,039	7	1.19	1.32	42
Medium Speed					
QUEBEC	653	11	1.31	1.70	35
CORTES	381	5	1.28	1.87	35
SAMUEL ROBERTSON	421	2	1.31	1.70	35
JAMES FOSTER, JR.	1,410	24	1.17	1.50	36
DON QUIXOTE	260	6	1.25	1.50	36
MARMION	277	2	1.21	1.77	38
Relatively Fast					
ALBION	434	3	1.21	1.52	34
PENNSYLVANIA	808	3	1.15	1.39	34
CRISIS	336	2	1.23	1.40	34

One fact emphasized by these records and to be expected is that practically all of the very slow and relatively slow packets with outstanding records for uniformity of length of passages westbound (i.e., six out of seven) were small ships. But, surprisingly, this predominance of relatively small size in records of uniformity of the length of passages westbound continues in the vessels selected for outstanding uniformity of speed in both the medium speed and relatively fast groups. Of nine ships in these two groups whose uniformity of length of passages westbound is conspicuous, six are under 500 tons, eight under 810 tons, and only one, the *James Foster, Jr.*, an average speed packet, is a large ship (1,410 tons) for the period and the trade.

Another conspicuous, reasonable, and to be expected factor in uniform transatlantic records is that most sailing ships with a record for uniformity of runs westbound in the North Atlantic are vessels that had a relatively short life in the service. The two fastest ships in the Western Ocean packet trade (1818-1858) averaged sixteen years in the service; three of the four fastest (the *Amazon, Yorkshire,* and *Devonshire*), with an average length of westward passage of 30 days or less, were from thirteen to eighteen years in the run, and this period of service proved their class. When we consider uniformity of length of passages westbound, the *Yorkshire,* which was the finest and fastest Atlantic packet of her day, is disqualified, for she had two long passages, one occupying 58 days, because of exceedingly severe and adverse sailing conditions. The four leaders in uniformity and speed were all large ships (i.e., from 1,406 to 1,771 tons), and of the nine sailing packets that crossed the Atlantic westbound with an average passage record of 31 days or better, the *Yorkshire* (996 tons) was the smallest. Of the other seven leading ships in the realm of average speed, two were over 1,700 tons, six over 1,400 tons, and one of 1,149 tons. The average length of service of these eight fastest average westbound passage packets was seventeen years, and if we eliminate the *Phoenix* (only two years in the run), the average length of service of the other seven ships was over nineteen years. As we consider the length of service of the leaders in uniformity of the length of passages westbound, we find that the average period of time of operation of the four slowest ships that were outstanding for uniformity was only two and three-quarters years. Of the three leaders for uniformity in the relatively slow class, the period of service was four years; of six leaders in the medium speed division, the average length of service was eight and a third years (due to the operation in this service for twenty-four years of the one large vessel in the group); and of three vessels in the relatively fast class, the average length of service was only two and two-thirds years. The average length of service of the twenty-one transatlantic sailing packets with outstanding records for uniformity of the length of their passages westbound—fast and slow, without regard to speed—was six and a third years.

XI.

DEEP-SEA STEAM NAVIGATION—IRON SHIPBUILDING, SCREW PROPULSION AND SUBSIDIES, AND THE DECLINE OF THE UNITED STATES MERCHANT MARINE

The SIRIUS *and* GREAT WESTERN *Inaugurate Transatlantic Steam Navigation in 1838—Steamers in the North Atlantic Trade Prior to 1845*

THE MIDDLE of what may be termed the active transatlantic sailing packet era of 1818-1858 saw the introduction in Atlantic travel of the steam packet, which ultimately drove the sailing vessel, dependent on capricious winds, from the trade. Early in 1838, both Americans and Europeans expressed much interest in a widely heralded coming transatlantic race between the rival wood paddle-wheel steamers *Great Western* and *British Queen,* then nearing completion in England. Several vessels had previously made partial use of steam during long ocean passages, but technical engineers had ridiculed the idea that steam could ever be the main source of power for long voyages. It was fated that neither of the prospective contenders should be first across the Atlantic under continuous steam power.

The *Great Western* was being built to the order of the Great Western Railway, which had carried its lines through from London to the famous old English west coast port of Bristol and was anxious to make the terminus of its railroad a transatlantic steam packet ocean port. Isambard Kingdom Brunel was the versatile designing engineer of the Great Western company, and the keel of its pioneer transatlantic steamer, the *Great Western,* was laid at Bristol on July 28, 1836; she was launched a year later and then taken to Blackwall to receive her machinery and in March 1838 made her first trial run down the Thames.

The *British Queen* was being constructed by the British & American Steam Navigation Company, organized in 1835 by the American Junius Smith and MacGregor Laird of the Birkenhead shipbuilding family, but the failure of one of the contractors at a critical time resulted in great delays in construction, and we are told that the *British Queen* (named after Queen Victoria, who ascended the throne in 1837) was "hopelessly unfinished when the *Great Western* approached completion." However, the steamship company that had for some two years been banking on the honor and associated advertising value of sending the pioneer steam packet across the Atlantic refused to admit defeat and, to forestall the *Great Western* and endeavor to win the laurels of priority, chartered the London-Cork steam packet *Sirius* (built at Leith, Scotland, in 1836) and fitted her out to attempt the Atlantic crossing westbound under its flag. The *Sirius* was a very small vessel compared with her rival, and her tonnage of 703 tons can be compared with the 1,340 tons of the steamer *Great Western* and with the 1,030-ton measurement of the sailing packet *Roscius,* just being completed for the New York-Liverpool Dramatic Line, which was the largest transatlantic sailing liner afloat or building. The crew of the *Sirius* numbered thirty-eight, and she carried forty-six passengers in all, thirty-nine as first-class.

On April 4, the *Sirius* steamed from Passage West, seven miles below Cork, with thousands of people lining the river banks to cheer her on her way. Her voyage of 2,897 nautical miles across the Atlantic was an epic of courage, determination, and tenacity on the part of her commander, Richard Roberts (a lieutenant of the British Navy). During her passage of 18½ days, she had 11 days of gales and head winds, and a shortage of coal developed. Some rosin (part of her ballast cargo, to be used as fuel in an emergency) and some of the vessel's wooden fittings, one report says, had to be burned, and her commander feared that he would run out of coal and have to burn all inflammable material aboard before he reached port; however, another report says that "she left Bristol with 480 tons of coal aboard and only 30 tons remained when she reached New York." Some historians tell us that "more than once the crew was on the verge of mutiny" and that "many times the passengers implored Lieutenant Roberts to turn back." The *Sirius* arrived at Sandy Hook at 10:00 P.M. on Sunday, April 22, sixteen hours before the *Great Western,* whose captain arrived in New York Monday afternoon, the 23rd, in time to attend the official banquet given Lieutenant Roberts by the mayor that evening.

One report says that a delay of some half a day in the *Sirius'* proceeding from Sandy Hook to the upper harbor of New York was due to the fact that the steamer had consumed all of the coal that she had had aboard and the necessity of having to hurry fuel down to her from the city in order that she could complete the trip under her own steam. Another version accounting for her slowness in negotiating the distance from the Hook to the upper bay claims that the *Sirius* ran aground on the bar and remained there until the rising tide permitted her to go free. In any event, all accounts agree that the *Sirius* was off Sandy Hook in the late evening of Sunday, April 22, and was in the upper harbor off the city "in the forenoon of Monday, the 23rd," some six or more hours before the *Great Western* was sighted steaming "at a rapid rate through the waters of the bay." The New York papers tell us that the *Great Western,* upon arrival, "passed swiftly and gracefully around the *Sirius* [at anchor in the upper harbor], exchanging salutes with her, and then proceeded to her destined anchorage in the East River," and we read, "If the public mind was stimulated by the arrival of the *Sirius,* it became intoxicated with delight upon view of the superb *Great Western.*" New York, after waiting for years to receive its first transatlantic steamer, was called upon to welcome two of them, one in the morning and the other in the afternoon, on April 23, 1838—a memorable day that became of historic importance. The New York HERALD of April 24, 1838, said: "The excitement of Monday was further increased by the arrival of the *Great Western.* The *Sirius,* however, is the pioneer and to her the glory is due."

The "Journal of the Voyage" of the first westward transatlantic passage of the steamboat *Great Western,* written by W. A. Foster, a passenger, and published in "The Logs of the First Voyage Made with the Unceasing Aid of Steam between England and America by the *Great Western* of Bristol, Also an Appendix and Remarks by Christopher Claxton, Bristol, England, 1838," says (as does the title of the book in which the Journal was published) that the *Great Western* hailed from Bristol, England, and sailed from the Bristol Channel—and not from Liverpool. The *Great Western,* anchored well out in the channel, was reached by passengers by means of a small steam tender which left the outer basin of the harbor of Bristol on the River Avon "at a few minutes past 2 P.M. Saturday, April 7, 1838." Upon embarking on the *Great Western* at about 5:00 P.M., the skipper found that the wind was not to his liking, so the new steam vessel's commander (Captain Hosken) decided "to lie by until the morning." Foster writes that at 8:00 A.M. on the morning of Sunday, April 8, "our ears were saluted by the low roar of the furnaces which announced the kindling of the fires, the note of preparation for departure." Then follows a description of delays in getting the steamer started on her maiden voyage, but the log records that "at 12 (noon) we were fairly off." On Tuesday, April 10, bucking a head wind, the *Great Western* passed the famous sailing packet *South America* (605 tons) of the Black Ball Line, then "seven days out of Liverpool for New York." The log says that on April 14 "the engines were stopped at noon for the first time on the passage to examine the paddle wheels and to 'screw up.' " We read in the log of the beneficial use of sail at times by the steamer and of the advantages of steam propulsion "against the adverse influences of weather"—head winds and seas. On Tuesday, April 17, the log says, "In consequence of the heavy sea the working of the engines was reduced to ten revolutions per minute, during which time, by the result of observations, we made an average of five knots per hour." At noon of Monday, April 23, land was sighted (two hours after "we were joined by the pilot"), and Foster writes, "At 3 P.M. we passed the narrows, opening the bay and harbor of New York, our sails all furled and the engines at their topmost speed." The crossing of the *Great Western* from anchorage in the Bristol Channel to the pilot off Sandy Hook was made in 15 days 2 hours sun time, or 367 actual hours at sea. This about equals the time of the fastest sailing packet passage from the River Mersey to New York, which included the run in the Irish Sea and down St. George's Channel.

The claim was made by the Great Western Railway that its pioneer steamer had crossed the Atlantic from Bristol to New York in 14½ days, but Christopher Claxton's published remarks on the passage, which are authoritative, make the time of the crossing 15 days and 2 hours (sun time) from anchorage in the Bristol Channel (which was 3 hours' steaming on a tender "from the outer basin of the harbor of Bristol") to the pilot off Sandy Hook. The average speed claimed for the *Great Western* was 8.75 knots per hour, which is as much overstated as the length of the passage is understated, and 8⅓ knots per hour was probably the vessel's actual average speed, which is close to the 8½ knots per hour officially stated for the first four Cunarders, of about 1,150 tons, put in the North Atlantic service (in the Liverpool-Halifax-Boston run) in 1840. A contemporary press report said that the *Great Western,* on her maiden voyage, steamed "3,125 sea miles, making an average of 208 miles per day and over 8½ knots an hour." The total mileage stated is high for a direct ocean run from the Bristol Channel to Sandy Hook, but the figures show a sea passage of over 15 days. The *Great Western,* like the *Sirius,* was commanded on her initial passage by a British naval lieutenant, James Hosken by name, thus making each of these pioneer English merchant steamer passages a voyage conducted under the supervision and with the co-operative assistance of the British Government. Incidentally, Lieutenant Hosken, the *Great Western's* commander and navigator, gives the dates of departure and arrival as April 8 and 23, respectively, which, with a noon departure and a P.M. arrival in New York on the 23rd, denote a passage of a few hours in excess of 15 days.

The *Great Western* had side-lever engines of 440 horsepower. The coal consumption westbound was stated at 655 tons, or about 44 tons per day; eastbound, with favorable winds and under a large spread of canvas, she is said to have burned only 392 tons of coal. The vessel was reported to have "cost $245,000, of which $66,000 was paid for the engines"; however, British records indicate that she was supposed to cost £50,000, but that actually she cost her owners £63,000. The *Great Western* was a good-looking vessel, and with her four schooner-rigged masts and smokestack forward of the main, black hull, and paddle boxes (just abaft the mainmast) streamlined in form with only the tops—above the line of sheer—painted white, she looked like a steamship rather than a steamboat.

The *Sirius,* on her history-making voyage, took 437 hours to cross the Atlantic from southwestern Ireland to New York (a short-lane distance 176 miles less than the crossing from Liverpool). Her average speed was only 6.6 knots per hour, a performance beaten (even when only the theoretical short distance over ocean bottom is concerned) by many of the sailing packets. The *Sirius* is considered by marine historians as a very small vessel for the transatlantic service in the northern latitudes; yet, when built in 1836, she was described as "a big steamer," and when she made her historic westbound Atlantic passage in April 1838, there were only three Black Ball liners out of the eight in service between New York and Liverpool that were of larger tonnage. These ranged from 729 to 798 tons as against the *Sirius'* 703 tons (British measurement); the other five Black Ballers varied from 573 to 663 tons. All of the four Liverpool Red Star liners, which ranged from 578 to 651 tons, were smaller than the *Sirius*, but two of the four Liverpool Blue Swallowtail sailing packets were somewhat larger and two a similar amount smaller than the pioneer steam packet, which outclassed in size eleven of the twelve New York sailing packets in the London (Portsmouth) run, the only ship engaged in this service bigger than the *Sirius* being the *Wellington*, built in 1837 (a year after the *Sirius*), which registered 726 tons and was owned by the Red Swallowtail Line. The *Sirius*, from an engineering standpoint, attained a degree of historic prominence, as she was reputed to be the first (and was certainly one of the first) British steamers to be fitted with a condenser instead of using salt water in her boilers; this improvement—and innovation—was one of the important milestones in the advance of marine steam engineering.

Early Crossings of the Atlantic by Steamers Preceding the Historic Passages of 1838

The *Sirius* and *Great Western* were not the first steamships to cross the Atlantic and not even the first to make the passage by steam all the way, but they were pioneers in establishing a permanent, practical, and successful steam packet service on the Atlantic "shuttle." The original initiative for attempting a transatlantic steam crossing should be credited to Capt. Moses Rogers, a native of New London, Conn., and a New York mariner. In July 1809, Captain Rogers had taken John Stevens' steamer, the *Phoenix*, from New York to Philadelphia, and this was the first time that a steam-propelled vessel had ventured from protected waters out on the open ocean. Rogers, at intervals, endeavored without success to interest New York capital in building a steamer to cross the Atlantic, but New York investors "saw no money in it." Later, he interested a few more adventurous men at the cotton port of Savannah, including William Scarborough, and a full-rigged ship on the stocks at the Fickett & Crockett yard at Corlaer's Hook, East River, New York, was acquired to be fitted with steam machinery. This vessel, with a "380-ton sailing ship hull," was launched August 22, 1818, and christened "*Savannah*." She was 98 ft. 6 in. long, 25 ft. 10 in. beam, and 14 ft. 2 in. deep, and some records give her tonnage as 380 tons, others as 319 tons. The engine—inclined, direct acting, with cylinders 40 in. diameter and 72 in. stroke—was built by Stephen Vail and James P. Allaire "across the bay in New Jersey," where her boiler was made by Daniel Dodge (also stated as David Dod, of Elizabethtown, N. J.). The paddle wheels were of iron and of a portable, or detachable, type, which could be folded up and taken in on deck when desired, and a framework of iron covered with canvas served for paddle boxes, or "wheel houses."

The *Savannah* left New York March 28, 1819, and reached Savannah in 8 days 15 hours, having used her engine only 41½ hours, or one-fifth of the time. She steamed out of the southern port on May 24 to commence her famous crossing of the Atlantic and reached Liverpool on June 20, which would make a passage of 27 days; but historians have given the length of this pioneer run as all the way from 22 days to 29 days 2 hours, the difference probably being accounted for by where the crossing was supposed to start and where it ended. One British report says that the *Savannah* put into Cork Harbor for coal, as her full supply was exhausted. Records seem to agree that the *Savannah* used her machinery for only 80 hours during the crossing, but one report says that this was spread over "18 different days out of the 27 required for the passage"; while another says that "the trip occupied 22 days, on 14 of which steam was used," and a third report says that "the voyage occupied 703 hours, during which the ship was propelled by steam only 80 hours" (or 11.4 per cent of the time). It is evident that the steam boiler, engine, and paddles fitted on the *Savannah* were auxiliaries to be used when leaving and entering port, in calm weather (with no wind), or to assist in keeping her on her course against head winds and seas.

There is a record that the schooner *Contract* (Captain Livingston), sailing in Lat. 27° 30′ N. and Long. 70° W. (a position reported far to the south of a natural course set from Savannah to Liverpool), sighted what was supposed to be a vessel on fire. There was a light wind approaching a calm at the time, and although the *Contract* crowded on all sail and made for the "burning ship," to the surprise of those on board the schooner, the vessel supposedly on fire "passed along quickly and was soon lost to sight," so the conclusion was reached that "the strange smoking vessel was nothing more or less than a steam packet bound across the ocean." Upon approaching the British coast, the *Savannah* was again mistaken for a ship on fire, and vessels, including a revenue cutter, after hastening to her assistance, viewed her with a great deal of curiosity. From Liverpool, the *Savannah* proceeded to St. Petersburg, calling at several ports en route. On this 33-day passage, she was reported to have used her engines for 239 hours, or about thirty per cent of the time. The vessel returned to Savannah on November 30, 1819, and had a very rough westward Atlantic crossing. President Monroe, who had taken a short trip in the *Savannah* in the spring, suggested that the navy might be interested in acquiring the vessel, so the steamer was sent to Washington, but the government declined to purchase her. She then went to New York, and when it was evident that there was no prospect of operating her as a steamer at a profit, the machinery was taken out of her and she became an ordinary sailing ship. The career of the historic *Savannah* ended in 1822, when she was about four years old; in attempting to make New York under canvas in bad weather, she piled up on the Long Island shore and became a total loss.

The year that the *Savannah* was branded an economic failure as an auxiliary steam vessel, there was put in service in the United States the world's first ocean-going full-powered steamer. This was the *Robert Fulton* of 702 tons (159 ft. long, 33 ft. 9 in. beam, and 14 ft. 3 in. deep), built in 1819 by Henry Eckford, New York, for David Dunham. This was a staunch vessel constructed of "oak, locust and cedar and Georgia pine, copper fastened"; she had "a square or cross-head engine, two boilers and two funnels." The *Robert Fulton* left New York for New Orleans (via Charleston and Havana) on her first trip April 25, 1820, which was a year before John W. Russell began to advertise individually the sailing of certain 250-ton brigs as "one of the line of packets" and fully two to three years before a New York-New Orleans line of sailing packets was really established. As a mechanical product, the *Robert Fulton* was an entire success from the start. She was designed for carrying mail, passengers, and light freight, and—like the steamers of her day—the weight and space required for fuel on long runs, added to that required for machinery, gave her but little chance to stow and carry either bulky or heavy freight. Contemporary newspapers speak of her successful operations and affirm that she "covered the 2,225 miles between New York and New Orleans in an average of 10 days." The New York Evening Post of June 15, 1820, printed the following in regard to her arrival in port: "The beautiful steamship *Robert Fulton,* Capt. John Mott, arrived last evening 17 days from New Orleans *via* Havana and Charleston. At Havana she stopped 2 and at Charleston 4 days. She has aboard between sixty and seventy passengers and has been at sea only 10 days."

In the winter of 1820-1821, the *Robert Fulton* made a round voyage in good time, but experienced terrific weather at sea, for the Evening Post, upon the steamer's return to New York in January 1821, said: "The boisterous season, the rough and heavy weather which she has experienced this trip, must convince even the most incredulous of the perfect practicability of navigating the ocean by steam. Capt. Mott gives her a decided preference over every vessel he ever commanded both for safety and pleasantness during a gale of wind." A summer crossing of the Atlantic would have been easy for the *Robert Fulton* after her many experiences with gales off Hatteras and in the North Atlantic during the winter and an occasional Gulf of Mexico hurricane in August-October, which often veered to the northeast off the American Atlantic Coast. The *Robert Fulton* was some 47 tons bigger than the *Sirius,* the first Atlantic steam packet, and about twice the size of the *Savannah,* the pioneer vessel fitted with steam machinery to cross the Atlantic; but if the "*Fulton*" had attempted a transatlantic passage, trouble would have been experienced in carrying fuel enough for the crossing—a condition that seriously bothered the *Sirius*, which was built in Scotland seventeen years after the American ocean-going steamer.

Albion, the acknowledged authority on American transatlantic and coastal sailing packets, says that the *Robert Fulton* operated "for several years with mechanical if not financial success on the stormy run down past Hatteras to New Orleans, touching at Charleston and Havana." She commenced her service before any of the New York-southern port sailing packet lines were organized and two years before the first Charleston line was formed. Albion further states: "Had Dunham placed three such steamships in service, the coastal packets might never have gotten a foothold in the rich trade between New York and the cotton ports. As it was, the 'canvas-backs' made money where the *Robert Fulton* did not, partly because they carried more cargo and partly because shippers and passengers would not wait for her infrequent sailings." David Dunham met a tragic death when sailing in the Hudson River. The *Robert Fulton* changed owners, and after some three years of service as a steam packet, she was sold to the Brazilian Government after her machinery was removed.

The first vessel to make a crossing of the Atlantic under steam following the pioneer passage of the *Savannah* was the little Dutch-owned steamer *Curacao*, built at Dover, England, in 1826 for the cross channel service. This vessel, at one time, was named the *Calpé* and was described as a wooden side-wheeler of 438 tons register, whose paddles were driven by independent engines. The steamer was purchased by the Dutch Government and employed on the mail service to its West Indian colonies. The *Curacao* left Rotterdam on her first passage to the West Indies in April 1827 and required a month to do the outbound phase of the voyage, after which she made a regular annual sailing with mail, etc., from Holland until, during the troubles in Belgium, she was withdrawn from the service in 1830 and converted into a war vessel. The crossing of the *Curacao* from the English Channel to a Caribbean Sea port in about Lat. 12° N., by way of the islands and over a kindly southern course, was very different from a direct no-stop passage over the more turbulent North Atlantic against the westerlies to New York, which is located at about Lat. 40½° N.

A little steamer of 363 tons named the *Royal William*, built at Quebec, Canada, in 1831, is of historic interest, as this was the second steam vessel to cross the Atlantic and the first steamer to make a North Atlantic passage—or any direct no-stop transatlantic crossing—under her own steam all the way. The *Royal William* was of 363 tons (160 ft. long, 28 ft. beam, and 17½ ft. deep); she was a side-lever paddle steamer and designed to operate between Quebec and Halifax. One of her owners, incidentally, was Samuel Cunard, who was to become famous as the founder of the Cunard Line of British transatlantic steamers. Business depression and an epidemic of cholera kept the *Royal William* out of the trade for which she was intended, and she proved too big and expensive to operate as a tug, so her owners decided to send her to Europe for sale. She crossed the Atlantic in 1833, requiring 25 days to make the passage and burning 330 tons of coal during the crossing. Some records show that the vessel left Quebec August 5, 1833, and was at Gravesend September 16, or 42 days later; whereas another report says that she was at London 40 days after leaving Quebec. Mention is also made of the Atlantic crossing as being from Picton, Nova Scotia, to Liverpool. Apparently, the Canadian-built steamer did not find a ready sale in England, as did generally a Canadian-built sailing vessel (because of the relatively low price), but she was ultimately sold for £10,000, served as a Portuguese transport, and was a Spanish warship when she was finally condemned in 1847 when sixteen years old. This passage of the *Royal William* was never intended to be a pioneer transatlantic crossing that would lead to a permanent steam packet service between Canada and Britain, but one of the vessel's owners and an enthusiastic backer of marine steam propulsion was Samuel Cunard, who in the late thirties moved to Britain and, with generous government support, inaugurated a British-Canadian line of steam packets in 1840, with the steamers continuing on from Halifax, Nova Scotia, to Boston and making that Massachusetts port the western terminus of the line.

The American Junius Smith and the Construction and Operation of the First Transatlantic Steam Packets

An American figured conspicuously in the awakening of England to the possibilities of deep-sea steam navigation. Junius Smith, a Connecticut Yankee and a graduate of Yale (class of 1802), went to London in 1805 as representative of some American merchants. He had an interest in all things maritime, and the rapid development of the steam engine in England (the forerunner of the industrial revolution) led Smith in 1830, when a resident of London, to believe that the time was ripe to apply steam power to transatlantic packets. He returned to the United States in 1832 to investigate the matter more fully. After a 54-day passage to New York in a British sailing ship, he became convinced of the need of a transatlantic line of steam packets that would make the trip in one-quarter the time and, being positive of the practicability of his scheme, sought to interest capital on both sides of the Atlantic in a joint venture.

Smith was desirous not only of obtaining financial and moral support in Britain and America but also of having the steam packets built represent the best that the United States could do in the model and construction of the hull, rigging, equipment and furnishings and of having the vessels fitted with the latest and best steam machinery that could be made in England for marine installation. Smith wrote to a director of the London and Edinburgh Steam Packet Line that if, in harmony with Smith's plan, British capital would supply half the cash needed (which the American interests preferred should be represented by the complete cost of building and equipping two steamers for the proposed jointly owned and operated lines), "my friends in New York make no doubt of the practicability nor of the success of such an undertaking and have assured me that they will build two steam vessels suited to the object in view." The directors of the London and Edinburgh Steam Packet Company turned down the Smith plan of co-operation with American interests in the formation of a transatlantic steam packet line and, moreover, refused to charter one of their largest and most powerful steamers to Smith for demonstration purposes. But Junius Smith was persistent and tried to get some British capital and support elsewhere. The English newspapers got hold of the story and ridiculed the activities of the "Yankee innovator." In 1836, Dr. Lardner, a noted British scientist lecturing at Liverpool, went so far as to say that direct passages between Liverpool and New York by steam vessels were "perfectly chimerical" and that they might as well talk of making the direct voyage from New York or Liverpool to the moon. About this time, however, Smith secured a powerful ally in MacGregor Laird of the Birkenhead shipbuilding family (whose firm was later to build the historic *Alabama,* a steam-propelled commerce destroyer, for the Confederates during the Civil War), and British investors commenced to be less skeptical of his project when a few of their own countrymen of standing began to favor Smith's "crazy Yankee plans."

Junius Smith made two unsuccessful efforts to float a British transatlantic steamship company, but on the third attempt, with the co-operative phase with American shipbuilders and operators omitted, enough shares of stock were subscribed to permit of the newly formed company's building a vessel for the proposed service. The British & American Steam Navigation Company, of London, thereby came into existence, and this British company, organized by the American Junius Smith, placed the first order in Britain for the building of a steamer for transatlantic service. This vessel was named the *British Queen* and was a pioneer as far as planning and placing the contract to build her were concerned. There were inconceivable and exasperating delays in getting this vessel afloat and in building and installing her machinery, but when she was "permitted to be finished and placed in operation," she proved to be "a good and successful steamer."

Smith's promotion activities had caused other minds to work along similar lines, and a group of Britishers associated with the Great Western Railway, with Brunel as their engineer, placed contracts for building their initial vessel for the transatlantic trade—the steamer *Great Western.* Still further competition to the "Yankee Smith's Atlantic steamship line" developed in England, and the Transatlantic Steamship Company, of Liverpool, was formed and commenced work on two steamers—the *Royal William* and the *Liverpool.* It would seem that some subtle patriotic conspiracy was formed among the Britishers to obstruct Junius Smith's plans in the building of the *British Queen.* The feeling developed that "a Yankee boat," even though she was British owned and British built and carried a decidedly British name, must not have the honor of being the first vessel in packet service to cross the Atlantic by steam all the way; for the Americans already had the glory of sending, in 1819, the first steam vessel across the Western Ocean, although the *Savannah* used sail primarily on her historic passage. Smith and his London shipbuilders and engineers encountered persistent, unprecedented delays in the building of the *British Queen;* whereas Brunel was evidently favored as much as Smith was delayed, and it finally became obvious that the *Great Western* would make the pioneer steam packet run across the Atlantic. But the Yankee and his London business partners were fighters, and if they were deprived of the honor they had counted on—and deserved as originators—they were determined to attempt to obtain some glory for their new line and rob a competitor of much of the honor he sought. Accordingly, they chartered "at discouraging terms" the only available steamer "passably appropriate," the small 703-ton *Sirius* in the England-Ireland trade, and fitted her out for a passage to New York sailing from Cork on April 4. The larger, more powerful, and faster 1,340-ton *Great Western* was rushed to completion and sailed at the earliest possible moment, April 8, from Bristol. The *Sirius* was, of course, unsuited for the westbound Atlantic passage, and she was reported as sailing "grossly overloaded." Her relatively small hull for a coal-burning long-voyage steamship was driven relentlessly, and she arrived safely at Sandy Hook the evening of April 22 and was in New York in the early morning of April 23, 1838, having won the honor for the "Yankee's London company" of making the first steam packet crossing of the Atlantic. In the late afternoon of the same day, the *Great Western* arrived in New York.

Following the arrival of the *Sirius* and *Great Western* in New York, it was freely said, "The days of the sailing packets are numbered." The competition of British steam was immediately felt by American sail. The *Great Western* and *Sirius,* sailing on their first eastbound passages in May, took seventy-five and twenty-five cabin passengers, respectively, back home with them. It is significant that among the passengers on the *Sirius* on her first eastbound crossing was that great American newspaper man, James Gordon Bennett, and the fact that he selected the *Sirius* rather than the larger and more impressive and comfortable *Great Western* is a tribute to the glory of the little vessel in making the historic pioneer crossing of the Atlantic under steam. Concurrently with the sailing of the two British steamers eastbound with an even hundred passengers, three American sailing packets were dispatched carrying, all told, seventy-two passengers. These three American transatlantic "canvas-back" liners were the *Siddons* (895 tons) of the new Liverpool Dramatic Line, with thirty-seven cabin passengers aboard, the *St. James* (641 tons) of the London Red Swallowtail Line, with eighteen, and the *North America* (610 tons) of the Liverpool Black Ball Line, with seventeen. American passengers enjoyed the prospect of novelty of transport; they "revelled in speed" and always showed a measure of preference for "big ships." The steamer *Great Western* was a very large vessel, fully twice as big as the average sizable American packet of that time, while even the "very small steamer *Sirius*" was larger than two of the American sailing packets that sailed in competition with her on her first eastbound crossing.

The British steamer *Great Western* is reported to have made money for her British owners during the early years of steam, when she had virtually no serious and maintained steamer competition on the Atlantic run between England and New York. The London TIMES said of the steamer's maiden voyage: "Upon the 87 passengers home and the 130 out, at 40 guineas passage money per head in the saloon and 35 guineas in the cabin, each way, the directors of the *Great Western* will have received upwards of £8,000 exclusive of the benefit derived from the conveyance of goods, of which the *Great Western* brought from New York to the extent of about 200 tons measurement." The Liverpool ALBION said that the first round trip of the *Great Western* "netted £6,000." This early steam packet made seventy-four passages (thirty-seven round voyages) in the Bristol-New York and Liverpool-New York trades during a period when she had light competition. After that, she was withdrawn from the Atlantic service, as she was "too slow and old-fashioned to compete with the newer ships being built to operate under mail subsidies." She was sold in 1847 to the Royal Mail line and was broken up in 1856.

The passenger fare on the steamer *Great Western* was advertised later in 1838 as "thirty guineas, or \$140.00, with wines and provisions," for an express crossing. Time of passage, with reliability and superiority of steam over sail (dependent upon variable winds and weather), was stressed to attract patronage, which the sailing packet line managers said (considering actual prices paid for passages) caused them in 1838, the first year of steam competition, to lower their cabin passenger fares "from \$120.00 to \$100.00 per head without wines or extras." In 1821 a rate of forty guineas had been in effect, and all passengers, we are told, "paid the full rate of \$186.66 except servants and children, who were carried for half fare." Competition among the sailing packet lines lowered the cabin passenger fares to thirty-five guineas, or \$163.33, and then to "thirty guineas (\$140.00) without wine," with steam competition adding to the demoralization following the entry into the field of Collins' New York-Liverpool Dramatic Line in 1836-1837, during a period of business depression, and the inauguration of the Liverpool-New York New Line service of large high-class packets in 1843. (These additions made five well-tonnaged, up-to-date American sailing packet lines with twenty-seven ships in the New York-Liverpool trade alone and twelve packet lines with fifty-eight ships sailing in the transatlantic service between New York and Liverpool, London, and Havre.) In 1843 the Black Ball booked packet cabin passengers for \$80.00, and it was said, "This is little more than half of what it was a few years ago." Later, the rate dropped to \$75.00 per person for a two-berth room shared with some other passenger or \$112.50 for exclusive occupancy of a small cabin, or stateroom.

It is difficult to agree with the statement that "the competition of British steamships made the carrying of passengers on the transatlantic American sailing packets unprofitable from the time that the *Sirius* and *Great Western* appeared in the New York run." It would seem that competition among the sailing packet lines themselves was a much greater factor, prior to the mid-century, in lowering passenger fares than the advent of the British steam transatlantic lines. Moreover, although British steamers in 1838-1840 cut into the American sailing packet trade and undoubtedly lessened profits, these British lines as originally organized were unable to continue in competition with the sailing packets and "petered out."

The *Royal William II* of 617 tons was built by W. & J. Wilson at Liverpool (engines by Fawcett, Preston & Company) for the newly organized Transatlantic Steamship Company, of Liverpool, capitalized at £800,000. This vessel is said to have been the first one built with watertight compartments. She left Liverpool July 5, 1838, on her maiden voyage with passengers for New York, but she was far too small for the Western Ocean trade and was followed in October 1838 by the *Liverpool* of 1,150 tons, constructed by Humble & Milcrest, with engines of 468 horsepower built by Forrester & Company. The Transatlantic Steamship Company was not successful, and after operating throughout 1839 the line suspended service. The *Liverpool* was sold to the Peninsular & Oriental Steamship Company and renamed *Great Liverpool.*

The *Sirius,* after two round voyages under the colors of the British & American Steam Navigation Company, went into the coastwise trade, for which she was originally built, and when on a passage between Dublin and Cork, she was wrecked January 16, 1847. The *British*

Queen (1,863 tons) took the place of the *Sirius* in the transatlantic run, but she did not leave Portsmouth on her maiden voyage to New York until July 12, 1839. A running mate to the *British Queen* named the *President,* also built at Blackwall and somewhat larger and faster than the earlier vessel, entered the line in August 1840. The two vessels of the British & American Steam Navigation Company enjoyed good patronage for a brief period, but disaster was hastening toward them.

All the early steamers, which were wood, side-paddle wheel, heavily sparred and canvased craft with simple engines and low pressure boilers, were most expensive to run; but once the public had obtained a certain amount of confidence in them, they began to compete seriously with the sailing packets, and this primarily because of the speed and more uniform time of passage factors. The drastic and rate-cutting competition between packets in the transatlantic service commenced in March 1839, when the London and New York line of sailing packets cut its saloon fare to twenty-five guineas, a price level at which no steamer could operate without experiencing a heavy loss. This rate-cutting action enabled the sailing packet line to maintain with perfect truth that its ships were cheaper, but it was not on such certain ground when it claimed that they were also faster, although packet operators proved to be correct for a long term of years when they boasted of the greater safety of their vessels. The steamship people took up the question of advertising their greater average speed and made out a detailed return of the performances of the sailing ships of the principal packet companies for comparison with those of the steamers *Great Western, British Queen,* and *Liverpool* during the year 1839. These figures are as follows:

	WESTWARD			EASTWARD		
	Longest	Shortest	Average	Longest	Shortest	Average
	Days	*Days*	*Days*	*Days*	*Days*	*Days*
Sailing Ships						
Black Ball Line	48	22	33.17	36	18	22.12
Dramatic Line	38	23	30.12	25	17	20.12
Star Line	45	27	36	28	21	24
Swallowtail Line	45	28	35	31	17	22.12
Steamships						
GREAT WESTERN	21.12	13	16.12	15	12.60	13.90
BRITISH QUEEN	20.90	14.12	17.80	21.12	13.12	16.12
LIVERPOOL	18.12	16	17.40	24	13.18	15.16
Average of all the sailing ships	44	25	34.12	30	18.60	22.10
Average of all the steamships	20.30	14.15	17	21.40	13.40	15.42
Difference in favor of steamships	23.21	10.90	17.12	8.20	5.20	7.13

On March 11, 1841, the *President,* which had entered the service in the summer of 1840 as a running mate of the *British Queen,* left New York "with 136 souls aboard" on an eastbound run to Liverpool. She was under the command of Captain Roberts (Lieutenant Roberts, R.N.), who had been in charge of the S.S. *Sirius* on her historic pioneer crossing. The American regular trader *Orpheus* (a full-rigged sailing ship of 573 tons, built by Bergh, of New York, in 1833, and a packet in the Black Ball Line for five years, 1834-1839) sailed at the same time for the same British port. The *Orpheus* arrived safely at her destination, but the *President,* which she had seen "pitching and laboring tremendously" in a gale with very high seas soon after clearing the American coast, was never seen or heard of again. The *President* "met some mysterious end," and the disaster not only "broke" the British & American Steam Navigation Company and terminated its transatlantic steam packet service but also undermined public confidence in steamships' plying the Western Ocean. The *British Queen* was sold, and the company that, inspired by an American, had held the honor of having sent the first regular passenger steamer across the Atlantic passed out of existence. After the catastrophe to the *President,* the pioneer Bristol steam packet *Great Western* continued as the only steamer in transatlantic service running to and out of the port of New York, and she ran not as a packet but as a sort of regular trader.

It is significant that it was Junius Smith, an American, who first agitated for liberal government subsidies to establish and maintain packet lines of mail steamships. The American Congress was not, however, receptive to any such ideas, and when the British Parliament, in 1839, adopted his suggestion, it did not grant the British & American Steam Navigation Company, which Smith had organized, the Great Western Line, of Bristol, or the Transatlantic Steamship Company, of Liverpool (all three of which had steamers in the service as early as 1838), the advocated subsidy, but voted a generous amount to Samuel Cunard and associates (who had no steamships in service) to carry mails by steamship from Liverpool to Halifax and Boston. The initiation of the British Government-backed Cunard steam packet service between Liverpool and New York occurred exactly thirty years after the pioneer American Black Ball Line of sailing packets had commenced its service. It was this highly subsidized British Cunard Line of steam packets, with its good management and a record built up with the years for good average speed, reliability of service, and safety (fortified later by iron vessels and screw propulsion and, still later, by multiple-expansion engines and high-pressure boilers that materially cut down coal consumption and increased both economy of operation and the carrying capacity of paying freight) that doomed to gradual extinction not only the sailing packets on the Western Ocean but also merchant sail throughout the trade routes of the world.

That British statesmen appreciated the valuable work performed by Junius Smith in the development of the scheme of building and operating government-subsidized steamships in merchant trade as liners carrying mail and passengers speedily over established routes—a plan that Britain followed and by so doing became the undisputed Mistress of the Seas—is proven by the fact that but for a disaster to the *President,* the largest steamship afloat, in March 1841 and the resultant failure of the British & American Steam Navigation Company (Smith's pioneer line, which sent the first steamer, the *Sirius,* across the Atlantic with mail and passengers), Smith would have been knighted by Queen Victoria. America gave him a measure of recognition, however, as he received an LL.D. from Yale. The loss of the *President* and the failure of the British & American Steam Navigation Company "broke" Smith and caused him great distress and humiliation. He gave up his London residence and moved to South Carolina, where he made a success of tea raising until he was so badly beaten up because of his anti-slavery views that he died shortly afterwards in a New York hospital.

Steam packet sailings in 1838-1840, the first three years of operation in the Britain-New York service, can be briefly summarized as follows:

Name of Steamer	Line	Number of Voyages Each Year		
		1838	1839	1840
SIRIUS	British & American Steam Navigation Co., London	2	—	—
BRITISH QUEEN	British & American Steam Navigation Co., London	—	3	6
PRESIDENT	British & American Steam Navigation Co., London	—	—	2
GREAT WESTERN	Great Western Steamship Co., Bristol	5	6	6
ROYAL WILLIAM	Transatlantic Steamship Co., Liverpool	2	1	—
LIVERPOOL	Transatlantic Steamship Co., Liverpool	1	6	—
Total number of voyages per year		10	16	14

A comparison of the size and power of the five earliest steamers placed in the transatlantic lines is presented herewith:

Name of Steamer	Year Built	Where Built	Tonnage	British Dimensions in Feet: Length	Beam	Depth	Engines: Diameter of Cylinders	Stroke	Remarks
							Inches	*Inches*	
SIRIUS	1836	Leith	703	170	25½	18¼	60	60	First regular transatlantic steamer.
ROYAL WILLIAM	1837	Liverpool	617	145	27	17½	48½	66	Pioneer vessel of Transatlantic S.S. Co., of Liverpool.
GREAT WESTERN	1837	Bristol	1,340	236	35½	23¼	73½	72	Most commercially successful of the early transatlantic steamers.
LIVERPOOL	1838	Liverpool	1,150	210	36	21	75	72	A good vessel that did not make money on the Atlantic run.
BRITISH QUEEN	1839	London	1,863	275	37½	27	71½	72	A good vessel withdrawn from service when the line failed.

The *President*, the sixth and last transatlantic steamship to appear in the New York service prior to the appearance of Brunel's unlucky big iron screw steamer *Great Britain* in 1845, was built by Junius Smith's British & American Steam Navigation Company as a companion to the *British Queen*, which was operating alone but with mechanical satisfaction in the transatlantic service. The *President*, which entered the line in mid-1840, was described not only as "the largest steamship afloat" and as "bigger than any steam driven vessel built or projected" but also as by far the most modern and best equipped and fitted out of the steam packets; it was said that "her elaborate appointments were the source of widespread admiration." Of about 2,000 tons British register, she was built at Blackwall on the Thames as a side-lever paddle steamer, with cylinders 81 in. diameter and 72 in. stroke, this being the largest engine put in a British transatlantic steamship prior to the building of the last two of the quartet of 1848 Cunarders—the *Europe* and *Canada*. It was said of the *President* that she reflected more than any other British steam packet prior to mid-century "the American influence" for comfort or "luxury," but Smith had merely sought to make the vessel's cabin appointments at least equal to those of the popular and best American sailing packets.

Samuel Cunard, of Nova Scotia, was a son of Pennsylvanians who, being loyal in their sympathies toward Britain, had emigrated to Halifax at the close of the American Revolution. Young Cunard was trained in business in Boston, and this fact possibly accounts for his early preference for Boston as the United States terminus of a British transatlantic steam packet line that he (then a resident of Liverpool) or rather his company, S. Cunard & Company, of Halifax, Nova Scotia, with the financial backing of George Burns (G. & J. Burns, of Glasgow) and David MacIver (D. & C. MacIver, of Liverpool), organized in 1838. Transatlantic steam navigation—and, it has been said, "ocean steam navigation for commercial purposes"—began in 1838, and following the passages of the *Sirius, Great Western, Royal William*, and *Liverpool*, which four vessels were the precursors of the present North Atlantic merchant fleet (as they carried passengers and some freight and were dispatched for the purpose of making money for their owners and not to test mechanical and scientific theories), the British Admiralty advertised for bids for the transportation by steam of the mails to North America. Three proposals were received to furnish the service the British Government desired. The Great Western Railway, then successfully operating between Liverpool and New York, offered to run three steamships on a monthly service from Liverpool to Halifax, Nova Scotia, for £45,000 a year. The St. George Steam Packet Company proposed to operate a monthly service to Halifax for £45,000 a year or to New York via Halifax for £65,000 a year, and the Cunard-Burns-MacIver group, which was planning to form The British & North American Royal Mail Steam Packet Company, offered a bimonthly schedule from Liverpool to Boston via Halifax for £60,000 a year. The First Lord of the Admiralty, Sir Charles Baring, and the Chancellor of the Exchequer, Sir Charles Wood, together agreed to accept the "Cunard offer," and the contract was awarded accordingly on July 4, 1839, "by private negotiation." This action led to a great deal of seemingly fully warranted criticism, and charges of favoritism were made. The pioneer work of a reputable British company, the Great Western, went for nought, although the Great Western offered to duplicate the Cunard offer and supply the service set forth by the "inexperienced newcomers" at the same price as they asked. In England, the decision was generally considered unfair to a worthy company, which had spent a good deal of money to get established as a transatlantic steam carrier. The British Government, although its choice of a contractor turned out well with the years (and it was severely criticized in England for some time), did make a big mistake in following Cunard's demands that Halifax and Boston be made the American ports. If New York had been made the United States port of destination and departure, or the western terminus of the line, in 1840, the American sailing packet lines would have met serious competition from British steam fully eight years earlier than actually happened, for the British-subsidized Cunard Line did not establish service between England and New York until January 1848.

It is generally felt that Britain was far in advance of the United States in the realm of steam navigation when British steam packets first commenced to cross the Atlantic in 1838 to compete with American sailing packets, but the following figures of the documented tonnage of steam vessels in the United States and the United Kingdom in 1838 and the number and tonnage of steam vessels built in each country during 1838 refute the notion of backwardness on the part of the United States during these early years:

Country	Documented Steam Tonnage in 1838	Steam Tonnage Built during the Year 1838	
		Number of Vessels	Registered Tonnage
United States	193,423 tons	105	24,158 tons
United Kingdom	74,684 tons	84	9,569 tons

The British and American measurements for tonnage were not made on the same basis, but allowing for all such differences, the steam tonnage of the United States, both documented and then building, greatly exceeded that of Britain in 1838.

Cunard's British & North American Royal Mail Steam Packet Company, which has always been known as the "Cunard Company" and the service as the "Cunard Line," was originally capitalized at £270,000 (or $1,312,000). After being awarded a mail contract with subsidy by the British Government, four side-wheel wood steamers were built to fulfill the required service demands, and after the small Canadian-built steamer *Unicorn* had crossed the Atlantic westbound and reached Boston June 2, 1840, the first of the regular "Cunarders," the *Britannia,* left Liverpool on Friday, July 3, and reached Boston via Halifax (where she remained only a few hours) on Sunday, the 19th. It was reported that on her maiden transatlantic passage westbound, Liverpool to Boston via Halifax, the *Britannia* carried 115 passengers and was 14⅓ days at sea, although from port of departure to port of final destination the crossing was a passage of 16 days. Soon afterwards, the *Acadia, Caledonia,* and *Columbia* (sister vessels of the *Britannia*) were in the service; all these steamers were built at Port Glasgow and were 207 ft. long, 34.2 ft. beam, and 22.4 ft. deep. All were completed in 1840, and their tonnage varied from 1,135 tons for the *Britannia* to 1,175 tons for the *Columbia,* the last of the quartet. In 1843-1845, the Cunard Line added the *Hibernia* and *Cambria,* each of 1,422 tons, to its Liverpool-Halifax-Boston service, and in 1848 it built, with British Government support and large subsidies, a quartet of larger and more modern steamers for the direct Liverpool-New York trade.

The pioneer British transatlantic steam packet, the wood paddle-wheel driven Cunarder *Britannia,* was put into service in the North Atlantic in 1840 on the "short British ocean run" from Liverpool to Halifax and was continued on to Boston to try to get some American business away from the strongly entrenched United States transatlantic sailing packet lines, which operated a "shuttle" between New York and Liverpool, London, and Havre. Cunard and his backers—the British Government—wasted several years in competing with American sail by means of British steam when they were content to bid for United States business and patronage by sailing into and out of the port of Boston rather than the more central and active port of New York, with which they had no direct line connection until January 1848. We are told that in order "to make fast passages," the Cunard steamships, from the start, "ran at full speed day and night" (as did American sailing packets—but not British or other foreign sailing vessels), "and to avoid collisions the line [Cunard] in 1848 devised a system of running lights by which a green light was carried on the starboard side, a red light on the port side, and a white light at the masthead." This system was eventually adopted by all ships, steam and sail, and is in general use and obligatory today. The *Britannia* (like her sisters) was a heavily sparred wood ship, with side paddle wheels operated by simple engines of 400 horsepower, cylinders 72½ in. diameter and 82 in. stroke, and low-pressure boilers. She carried a good spread of canvas and was said to show "an average speed of 8½ knots per hour with a coal consumption of about 38 tons per day." Burning some 500 to 600 short tons of coal on a crossing in addition to using much fresh water, the pioneer Cunard liner, like the latest "greyhounds" of the line, could have been used to carry passengers and mail, with but little "fine" or express freight.

The Cunard S.S. *Britannia* carried Charles Dickens as a passenger on a voyage leaving Liverpool on Tuesday, January 4, 1842, and arriving off Boston (with pilot boat alongside) on Saturday afternoon, January 22, eighteen days out, via Halifax, Nova Scotia. Dickens' impressions of this steam packet appear in his "AMERICAN NOTES," but it is of interest to read that he returned from the United States to England on a clean and more comfortable American sailing packet, which, incidentally, sailing from New York, beat the competitive Boston Cunarder on the summer eastward crossing to Liverpool by twenty-nine hours.

In 1845 the Great Western Steamship Company introduced a new steam vessel to run in company with the "good old-fashioned and steady-going *Great Western.*" This impressive new liner, named the *Great Britain* and designed by Brunel (who later designed the marine leviathan *Great Eastern*), threatened to give the American sailing packets real competition. She was not a wood side-wheeler—like all the steamers heretofore placed in the trade—but a "big iron vessel of great strength" equipped with "the most modern, powerful and economical steam engines," with 80-inch diameter of cylinders and 72-inch stroke, driving a screw propeller. The *Great Britain* of 3,270 tons (length 322 ft., beam 48 ft., depth 31½ ft.) was "the largest steamship afloat," but she went ashore on the Irish coast in 1846, before she had been a year in the transatlantic service, and remained piled up on the rocks for eleven months. When salvaged and repaired, she was placed in the Australian service, but she was out of commission for two years. It was said by contemporary authorities that if she had been a wood instead of an iron vessel, "she would have become a total wreck."

Not until 1848 was the competition of British steam enough of a factor seriously to disturb the operation and profits of the American sailing packets, although from 1838 on (following the arrival of the *Sirius* and *Great Western* in New York), the threat was evident, with fear—bordering occasionally on hysteria—unwarrantedly manifesting itself in some quarters. The early British steamers reduced the length of westward passage by about one-half, but the modern, sizable sailing packets were likely to compete with them—and sometimes even to beat them—on the eastward crossing. The steamers, moreover, were "noisy, shaky, and awfully dirty"; they vibrated and "shook badly," and the decks and upperworks were "covered with cinders and soot." At times, "smoke made the use of the deck aft impossible, and it got below into the cabins." The steamers proved to be less steady and comfortable in their motion than sailing ships for passengers prone to seasickness, for the sails greatly steadied the "canvas-backs." The prime and only virtue of the early steam packets was fairly uniform speed, which could be maintained in average weather without regard to force or direction of wind.

Carl Schurz, in his REMINISCENCES, tells of his reasons for booking passage for himself and wife from Portsmouth, England, to New York on the Red Swallowtail sailing packet liner *London* (1,145 tons; then four years old), in preference to crossing the Atlantic on a steam-propelled vessel, as late as the autumn of 1852, i.e., fourteen years after the crossings of the *Sirius* and *Great Western* and nearly five years after the subsidized Cunard Line entered the New York service: "There were steamers running regularly between England and the United States, but a friend of ours who had visited this country [America] several times had told us that a good large sailing ship was safer than a steamer and more comfortable to persons liable to seasickness. Our stateroom was large and commodious, the captain—a sea-bred man—polite and attentive, the table not bad, and the travelling agreeable."

When the *Sirius* and *Great Western* in the spring of 1838 crossed the Atlantic Ocean using steam throughout the entire voyage (assisted by sail), steamboats were in common use for short voyages, but they were also running from England to the Mediterranean and Africa and across the Red Sea and Indian Ocean. Steamboats for river, harbor, and coasting service were well known in the United States. In 1820 (eighteen years before the advent of the *Great Western* and *Sirius* in the Western Ocean packet trade and twenty years before the inauguration of the Cunard Line and the sailing of its pioneer steamer, the *Britannia*), Isaac Webb had built the *Robert Fulton* of 750 tons, described at the time as "the second ocean steamship built in the United States," for use in the deep-sea run from New York to New Orleans via Charleston and Havana. She made the complete passage in 10 days at sea. Steam tugs, which had been in practical use for years, did not commence to be actively employed in New York Harbor until about 1835, for many skippers of American sailing ships scorned their services and, well into the forties (and in some cases past the middle of the century), took great pride in sailing their ocean-going square-riggers in and out of their loading and unloading berths.

Whereas the name of the small steamboat *Sirius* will be honored as the pioneer vessel to cross the entire Atlantic under her own steam, steam vessels did not drive the sailing packets from the trade until iron replaced wood in building construction and the screw propeller replaced paddle boxes and side wheels around the mid-century. When the compound engine was designed and higher steam pressure used, with a great resulting economy in coal fuel, the death knell of the sailing vessel was sounded not only in Atlantic travel but also throughout the world.

The following average speeds for transatlantic passages are computed on the basis of a 3,073-mile short lane between New York and Liverpool:

	Westbound		Eastbound	
	Average Time	Average Speed	Average Time	Average Speed
	Hrs.	*Kts. per Hr.*	*Hrs.*	*Kts. per Hr.*
A. Black Ball Line, 1818-1827:				
Average all ships	917	3.35	571	5.38
Average fastest packet	821	3.74	499	6.16
Average slowest packet	1,109	2.77	691	4.45
B. Four New York-Liverpool packet lines, 1839:				
Average all ships	824	3.73	525	5.85
Fastest passage	533	5.76	403	7.62
Slowest passage	1,177	2.61	859	3.58

If we consider a crossing, say, of 20 reported days not as anywhere between 20 days 1 hour and 20 days 23 hours, which it may have been, but as exactly 20 days of 24 hours plus 5 hours on the westward run and minus 5 hours on the eastward run, the following table shows the average speed per hour for passages of different durations, all computations being made on the theoretical short-lane distance of 3,073 nautical miles between Liverpool and New York:

Time of Crossing in Days	Average Speed—Knots per Hour		Time of Crossing in Days	Average Speed—Knots per Hour	
	Westbound	Eastbound		Westbound	Eastbound
12	10.49	10.86	20	6.34	6.47
14	9.01	9.28	30	4.24	4.30
16	7.90	8.11	40	3.17	3.22
			50	2.54	2.57

The average sailing packet speed during the forty years of what may be termed the sailing packet era, considering the passage times from port to port and the distance as the theoretical short-lane mileage, was 3.5 knots per hour westbound and 5.6 knots per hour eastbound. During the year 1839, i.e., the first full year following the introduction of regular steam packets in the Atlantic "ferry" in the spring of 1838, the British wood paddle steamers *Great Western, British Queen,* and *Liverpool* averaged a speed of 7.4 knots per hour westbound (with the best crossing averaging about 8.9 knots per hour) and 8.4 knots per hour eastbound (with the best crossing averaging about 9.7 knots per hour). During this same year (1839), the average speed of all the ships operated in the four New York-Liverpool sailing packet lines (figuring theoretical short-lane and steamer mileage) was 3.7 knots per hour westbound, with the best crossing that year averaging 5.8 knots per hour, and 5.9 knots per hour eastbound, with the best crossing that year averaging 7.6 knots per hour.

It is apparent that one year following the pioneer transatlantic crossings of the makeshift *Sirius* and the steam packet *Great Western,* especially designed and built for the trade, the handwriting was on the wall forecasting the replacement of sail with steam some twenty years before the change can be said to have been accomplished. The wood paddle-wheel steamer met with good competition from the cleaner transatlantic "canvas-backs," but the maintained average relative high speed of the steamer and later the combination of the screw propeller and the iron hull proved too much in competition for the wood windjammer. Even the wood paddle-wheel steamers in 1839 averaged only half the time of the average sailing packet on the westward run and 70 per cent on the eastward run. The prevailing west winds on the North Atlantic did much to hurry forward the day of the steamship, but in the early days no steam craft—carrying mail, cabin passengers, tremendous quantities of coal and fresh water, but very little paying freight—could successfully compete in an economic sense with sailing packets without receiving the benefit of substantial national government subsidies. All of the early Cunarders were often passed at sea by American sailing packets, which with strong favorable winds would travel at a rate of 12 or 13 knots per hour for a day or more to their 8 or 9 knots and later 10 knots. But, as Marvin says, "The difficulty was that the winds were not always strong and favorable. Often they were light and fickle or dead ahead. Then the steadily turning side wheels of the *Britannia,* the *Canada,* and the rest gave them the victory. It was very much like the traditional race of the hare and the tortoise." The British subsidies, iron (and later steel) construction, the screw propeller, the American Civil War, and then the invention of the multiple-expansion steam engine drove not only the United States sailing packet from the transatlantic trade but also ultimately all sailing ships from the Seven Seas.

Early American Attempts to Organize Transatlantic Steam Packet Lines

About seven weeks before the *Savannah,* equipped with auxiliary steam power, commenced her historic crossing of the Atlantic (i.e., on April 7, 1819), the New York legislature granted to ten New York businessmen and financiers (promoters or would-be investors) a charter for the Ocean Steam Ship Company, which stated in the preamble that the incorporators were "desirous of constructing and employing steam ships in navigating the ocean" and that they were confident "that vessels may be so constructed as to unite all the safety and other advantages of common ships, to the additional velocity to be gained by the application of steam." It is evident that Capt. Moses Rogers, the first master to take a steamer (the *Phoenix*) built to operate in protected waters out into the open ocean (in a run from New York to Philadelphia in July 1809), was to a large degree responsible for awakening the interest of these New Yorkers in the matter of deep-sea steam navigation, but Rogers had the *Savannah* financed by Georgians and placed under his charge. He left New York with her on March 28, 1819, and did not return until the following year, when the vessel was offered for sale, as she had proved as a sailing ship with auxiliary steam power that she was neither an economically satisfactory "canvas-back" nor a steamer.

One of the incorporators of the Ocean Steam Ship Company, David Dunham, an auctioneer with vision and courage, himself built, in 1819, a real full-powered ocean-going steamship of 750 tons, the *Robert Fulton,* and used her in the New York-Charleston-Havana-New Orleans passenger and express trade with amazing mechanical success. Lack of funds, together with Dunham's death and the fact that there was no one with initiative and enterprise to carry on the work, caused the budding deep-sea navigation venture to die, and the inability of the *Savannah* (with only auxiliary steam power) to operate profitably did not encourage capital to invest in transatlantic steamships when the Black Ball sailing packet line, which commenced its regular service in January 1818, was doing so well and inviting marine-minded investors to put their money in Western Ocean sailing packets. Another of the incorporators of the Ocean Steam Ship Company was Preserved Fish, a former New Bedford whaling captain who had decided that there was more money to be made in business ashore than as the master of a ship afloat. Fish had become the senior partner of Fish & Grinnell, and, in 1822, this business firm of agents and brokers started the New York-Liverpool Swallowtail Line of sailing packets to run in competition with the Black Ball and Red Star lines. With the commencement of this new line and the doubling of the original Black Ball service, the sailing packet departures from New York were quadrupled from the 1818-1821 schedule; four packet ships left New York per month instead of one as per the program of the several earlier years. It is apparent that Fish, who was intrigued with the idea of steam transatlantic packets and deep-sea steam navigation generally in 1818-1819, turned a cold shoulder to the project in 1820-1821 and decided in 1822 to put his money into sail as a much surer investment for immediate profit. At that time, which was the dawn of the sailing packet era, New Yorkers generally felt very much as did Preserved Fish, and nothing came of the Ocean Steam Ship Company's plan to build steam packets and operate them in the Atlantic trade or elsewhere on the high seas.

Capt. Nathan Cobb, a Stonington, Conn., Yankee, was an experienced Atlantic sailing packet commander who had been master of the first Red Star liner, the *Meteor* (325 tons), when she sailed from New York for Liverpool on January 25, 1822. After commanding several packets in the Liverpool, London, and Havre services, he joined with Goodhue & Company, of New York, and Capt. Charles H. Marshall (another prominent sailing packet skipper) in 1834 in the purchase of the pioneer Black Ball Line of transatlantic packets. In 1835, Captain Cobb saw the future of steam in the propulsion of ships and in the Atlantic "ferry," and, we are told, "he was fired with an ambition to start transatlantic steamship service." In October 1835, it was announced that Cobb and his associates would petition the New York legislature to charter the Atlantic Steam Navigation Company with $500,000 capital. A year later, the *Despatch* of some 500 tons, to be equipped with engines of 300 horsepower, was under construction, for we read that the vessel "is now rapidly building; her frame is up, and her machinery in progress." The *Despatch,* which was planned to be the pioneer transatlantic packet to cross the ocean under steam power all the way, burning coal, was to be under the command of Capt. Nathan Cobb, "to whose energy and perseverance will the publick be indebted for the first steamboat to run between this port [New York] and Liverpool." Unfortunately, Cobb could not divert sufficient from his own means or interest enough outside venture capital in either the United States or Canada to carry his plans through to completion, and the Panic of 1837 and associated business depression not only cut out hoped-for and promised financial support but also caused the suspension of all work, salvage operations (with associated great losses), and the abandonment of the Cobb scheme to establish a steam packet service between the United States and England. New York and American capital in general was very dubious of any investment in transatlantic steamers in the thirties and forties, for it was felt that steam could not economically compete with the fine and well-managed New York sailing packet lines. In the early forties, it was said: "An investment in North Atlantic steamers is simply throwing money away, unless the vessels are heavily subsidized for carrying mail and passengers at an average speed much higher than is possible with sailing ships, which are dependent upon wind—a most uncertain and variable power."

The activities of Junius Smith in the United States and England in the promotion of transatlantic steam navigation led a number of New York capitalists, in 1838, to develop plans for the formation of a transatlantic steam packet company, and the American Atlantic Steam Navigation Company was incorporated, with James de Peyster as chairman. On March 22, 1839, calls for subscriptions to the capital stock were published in the New York papers, but the public response was disappointing, and the enterprise was abandoned. In 1839 the American public had great faith in the ability of its merchant sail to cope successfully with the competition of steam on the turbulent Atlantic. Seven months before this, Philadelphians, in a meeting in their merchants' exchange, had favorably considered steps to co-operate with Britishers in the establishment of a steam packet line to run between the Delaware and England, and the following resolution was adopted with some measure of enthusiasm: "RESOLVED that we have learned with lively satisfaction the willingness of our brethren of Great Britain to co-operate with us in this great enterprise" by making a substantial subscription for the construction of "such steamships as might be needed." Evidently, the Philadelphians had been misinformed in regard to the attitude of the British, for these "brethren" refused to invest any money in floating tonnage that was not controlled and dominated by the British—and in this they "met with the approval of the British Government and Admiralty." The British, as far as marine steam navigation was concerned, wanted no partnerships with any foreigners. Their aim was to control the ocean trade routes of the world by the operation of liberally subsidized steam packet lines with which no other nation could compete, and such service was to be maintained by mercantile vessels built as naval auxiliaries for use in war; naturally, no foreign interests were to be permitted to have a "finger in this pie."

In 1850, William Inman, of England, established steamer service between England and Philadelphia in response to the earnest solicitation and pledged support of Pennsylvania merchants. Two American steamships, the *Pioneer* and the *City of Pittsburgh,* made a "co-operative" voyage or two in the run, but they were then withdrawn and used in more profitable traffic in the Pacific. The Inman Line placed an all-British iron screw steamer, the *City of Glasgow* (1,609 tons; length 237 ft., beam 34 ft., depth 25 ft.), in the Liverpool-Philadelphia run in 1851 and in 1857 commenced to use relatively fast steamers of this type in the New York run, thus hastening the end of transatlantic packet sail, for Inman was not content—as were the operators of the other transatlantic steamship lines—to carry only passengers and fine freight. He went after the westbound emigrant trade, which at that time was deemed an essential part of a sailing ship's pay load if she was to operate at a profit in the North Atlantic trade.

In 1851, the screw steamer *Samuel S. Lewis* was built at Philadelphia for the Boston and Liverpool line. This vessel was 225 ft. long, 32 ft. beam, and 27 ft. deep and was fitted with an engine, with a cylinder 60 in. diameter and 40 in. stroke, that turned a four-bladed propeller of 14 ft. diameter one and three-fourths revolutions for each turn of the crank shaft. After a short and unprofitable career in the North Atlantic trade, the *Samuel S. Lewis* went to the Pacific, where she was wrecked. This vessel is of historic importance, for she was a screw steamer designed and built on the Delaware at the same time that Inman was promoting his "revolutionary plan for transatlantic steam propulsion" that eventually—because of the withdrawal of America from the field because of a divided country and an unsympathetic Congress—gave Britain command not only of the North Atlantic but also of all deep-sea trade routes.

According to marine historians, the first large American ocean steamer was the *Massachusetts* of 751 tons, which steamed out of Boston in 1844. This vessel cannot be classed as a steam packet or as an ocean-going steamship. She was a sailing packet ship owned by Robert Bennet Forbes, a Boston merchant, who installed steam power in her for use in leaving and entering ports and in light or contrary weather. The *Massachusetts* was, therefore, in the class of the pioneer steam vessel *Savannah,* i.e., a sailing vessel with auxiliary steam power. The vessel was proposed as the first of a fleet of auxiliary propeller packets to run between Boston and Liverpool. She was a full-rigged ship with Forbes's double topsails on fore and main, and on her maiden voyage her owner, his sister Emma, and Colonel Perkins were passengers. Eastbound, she experienced very unfavorable sailing conditions, but crossed in 17½ days, port to port, using her steam power two-thirds of the way. Returning in the heaviest sort of weather in November, the packet made a 28-day westward passage, which was slow time, but the westerly gales and seas were "vile," and, it is said, "she beat all paddle-wheel competition on that westbound crossing." The *Massachusetts* made two voyages between New York and Liverpool, but could not be made "to pay her way" and was sold to the government for use as a troop ship in the war with Mexico. The vessel had the honor of taking Gen. Winfield Scott and his flag to the siege of Vera Cruz. After the war, she was sent to California, transferred to the navy, and renamed *Farallones.* In 1869, when twenty-five years old, the *Massachusetts* was again a merchantman, freighting cargoes of wheat from California to Europe.

The *Massachusetts* is of particular interest, as she was fitted with a screw propeller. Robert B. Forbes not only sent the first screw steamship across the Atlantic in trade but also, before that, built the iron towboat *R. B. Forbes* and fitted her with twin screws. In 1844, he built the *Midas,* a twin-screw merchant vessel for deep-sea trade, and sent her to China; she was the first American steamer to pass the Cape of Good Hope and the first to see service in Chinese waters. In 1845, Forbes built the propeller-driven bark *Edith* and put her in the China trade, where she performed well, "churning along at a steady seven knots when competing sailing ships were rolling from rail to rail on a windless sea, chafing their gear away and getting nowhere." During the Mexican war, the *Edith* was chartered to the War Department, and her amazing record in beating paddle-wheel steamers in runs between ports so impressed the government that she was purchased and later sent by the War Department around Cape Horn to the West Coast. It was the United States, and not Britain, that developed and brought into practical use and popular favor the screw propeller—a means of propulsion that, when later adopted by the British and used in their iron hulls, was, as before stated, to make Britain the undisputed Mistress of the Seas.

American Deep-Sea Steamers, 1820-1847, Preceding the Operation of the Mills Subsidized Transatlantic Liners

American shipowners were bolder in applying steam propulsion to the government-protected coastwise trade than to transatlantic and similar ocean foreign trade where they would have to compete for business with foreign steamers heavily subsidized by their governments. The *Robert Fulton* of 702 tons ran over the long "two thousand mile" deep-sea route from New York to New Orleans via Charleston and Savannah for four to five years (1820-1824) and performed admirably, but following a change in ownership, she was withdrawn because "she did not pay" when up against well-organized sailing packet lines operating vessels regularly and frequently, on schedule, between New York and New Orleans. (In 1824, the New Orleans Old Line had four ships and one brig in the service, and the newly organized Holmes Line had started off with three new ships and a brig; in addition, the Ship Line was operating eight sailing packets between New York and Charleston.)

Steam packets ran between New York and Charleston with a weekly service—and a three-day passage—during 1834-1838. These Charleston packet steamers were operated by James P. Allaire, builder of marine engines (who knew infinitely more about building machinery than about hulls or the operation of vessels), and Charles Morgan, a ship chandler of New York. (Morgan profited by his Charleston steam packet line experience and grew to be a power in the steamboat business in the South and the founder of the Morgan Line of ocean steamships, which operated steadily between New York and New Orleans from the close of the Civil War to the time of the United States's participation in World War II, when the line discontinued service.) The Allaire steamers were, in fact, suitable for operation only in protected waters. The hulls were not built for ocean work and were positively not strong enough for the stormy route around Hatteras. These vessels, which were inland-waters steamboats and not steamships, showed their inherent faults, weaknesses, and inadequacy from the start; but the climax came in 1837 when the steamer *Home* broke down off Hatteras and, when at the mercy of the wind and seas, was driven on a shoal and unmercifully pounded by heavy seas so that she broke her back and went to pieces, with the loss of nearly a hundred lives.

The *Neptune*, a steam packet of 736 tons, was placed in the New York-Charleston run in 1838; this vessel was 215 ft. long, 25 ft. beam, and 14 ft. deep and, like the *Home*, was far too narrow for her length—in this respect "out-Britishing the British." In 1846, the substantial deep-sea steamer *Southerner* was put in the run, and the following year she and the *Northerner*, a new vessel of similar type, were conducting a weekly service between the ports, with passages of from 55 to 60 hours (as against an average of 6½ days and a range of from 3 to 24 days for the sailing packets). In 1838, John Laidlaw put the steamer *Natchez* in the New York-New Orleans and Mississippi service, but she was soon withdrawn, as, it was said, she could not carry sufficient coal, with the necessary associated reduction in paying cargo, and compete with the sailing packets, which averaged 18 days on their passages as against some 14 days for the *Natchez*, including stops en route made primarily for coaling.

In 1847, the steamer *United States* of 2,055 tons was completed by W. H. Webb at New York. This big vessel was built for "C. H. Marshall's line of New York and New Orleans steam packets," a projected line that presumably was to be affiliated with the famous Black Ball Line of transatlantic sailing packets but evidently never materialized, and the new steam packet was placed in the New York-Liverpool run. It was said that Marshall felt that the steam packet was "far too big a vessel for the Mississippi trade," and as the air was full of the advantages of steam over sail in the North Atlantic "ferry," he was inclined to give a steam packet a chance to see what she could do and find out if such a vessel could be made to pay running in an old established sailing packet line. The *United States*, according to her builder's records, was 243 ft. long, 39.4 ft. beam, and 31 ft. deep; she was a side-wheeler, bark-rigged, with clipper bow, bowsprit and jib boom, and a smokestack about midway between the fore and main masts. She had a noticeably high freeboard and was a large vessel in her day for even a steamer; her registered tonnage of 2,055 tons can be compared with the 1,161 tons of the sailing packet *Isaac Wright,* built at the same time and put into the Black Ball service in 1847 as that line's largest ship. The *United States,* surprisingly, received but little publicity, but she was the first and probably the only steam vessel to be operated by an established transatlantic sailing packet line and the first United States-built steamship to cross the Atlantic following the experimental passage of the *Savannah* (principally under sail, with steam as auxiliary power) in 1819. As the *United States* was a steamer and not a sailing vessel and carried sail merely as auxiliary power, she was the first vessel built in the United States to traverse the Atlantic using steam power throughout the passage. As a steam packet running between New York and Liverpool, the *United States* operated successfully, but because of the fuel bills and a large crew, with reduced cargo capacity (both weight and volume) necessitated by the coal to be carried, she "could not make a profit in competition with the slower but much more cheaply operated sailing packets and with steam packets benefiting by mail subsidies and government support." After a few transatlantic passages, the *United States* was purchased by the Prussian Government for conversion into a steam frigate.

The Eventful Year of 1847, with the Commencement of the Rapid Growth of Foreign Transatlantic Steam Competition with Established and Projected U. S. Packet Lines

In 1847, Capt. William C. Thompson, a New York sailing packet captain, commenced transatlantic service with an American-planned but British-built—and, it was claimed, Liverpool-owned—iron screw steamer, the *Sarah Sands* of 1,300 tons. Commanded by Captain Thompson, this vessel (concerning which there was much mystery as to ownership, control, and management) arrived in New York on February 10 after a maiden crossing "bucking western gales" of 21 days from Liverpool. The *Sarah Sands* was evidently a good, strong steamer, full-bodied and built for carrying rather than for speed, but she was greatly handicapped in service by running alone as a regular trader instead of as a vessel in a regular line with scheduled sailings.

On July 8, 1847, the steamer *Union* arrived at New York as the pioneer vessel of a line of transatlantic mail steam packets subsidized by the French Government to run between Cherbourg and New York. The *Union* made a good maiden crossing westbound in 16 days, and the competition of French-subsidized steamers to the three New York-Havre sailing packet lines seemed most serious in the late summer of 1847. The new French steamship line was, however, outrageously—even ludicrously—operated. Several transatlantic passages westbound had to be completed under canvas alone, as the coal (put on board very evidently in insufficient quantities) had been consumed. The masters proved incompetent in handling the steamers, and many collisions resulted. It was said, "New York Harbor is not big enough for a French steamer to turn round in or even to reach and depart from her dock without inflicting damage to the floating and shore property of others." The press urged that French steamers be barred from the crowded waters of the East River. Complaints developed about the shortages as well as the poor quality of food, and "eighty substantial importers and bankers" of New York, who were either Frenchmen or closely connected with the French, held an indignation meeting in New York, protesting to the French Government against the abominable service and atrocious management of the steam packet line of which so much had been expected. The pioneer French line of transatlantic steamers did not last long; it was driven out by incompetency and derision. Lieutenant Maury told the story of a French liner's actually putting to sea without sugar: "One of these steamers, loaded down with passengers and freight, put to sea from New York, and after getting fairly out into blue water, discovered that the sugar had been forgotten. The captain made a speech at the breakfast table the next morning, and offered to put back for sugar if the passengers would say so; but it was too late. The passengers had already become *sour.* This sugar business broke up the line." An American historian writes, "The first efforts of the French line were short-lived and did not seriously cut into the business of the Havre [sailing] packets."

At the end of 1847, the British Government-backed and heavily subsidized Cunard Line moved to inaugurate a regular scheduled steam packet service direct between Liverpool and New York, and on December 29, 1847, the S.S. *Hibernia* of 1,422 tons (built in 1843) reached New York from Boston to be ready to commence service by sailing from New York for Liverpool on Saturday, January 1, 1848, the same day as the S.S. *Cambria* (a sister of the *Hibernia,* but built in 1845) sailed from the English port for New York. At that time, the Cunard Line was building four "fine modern wood side-lever paddle steamers" that were presumably "the last word" in naval architecture and marine engineering. These new steam packets, which all entered the Liverpool-New York packet trade in 1848, were the *America* (1,825 tons), *Niagara* (1,825 tons), *Europe* (1,834 tons), and *Canada* (1,831 tons); they were sister vessels, each 251 ft. long, 38 ft. beam, and 25 ft. deep, but the first two were fitted with engines having cylinders 72½ in. diameter and 82 in. stroke, while the last two of the quartet were given more power and had engines with cylinders 90 in. diameter and 96 in. stroke. The development of the Cunard Line under the stimulus of British subsidies, from the time that the service originated with the Liverpool-Halifax-Boston run in 1840 to the establishment of the Liverpool-New York service in 1848, was briefly set forth by the British in 1848 as follows:

Year	Steam Packets Placed in Service	Built for Service between Liverpool and	Gross Tonnage	Reported Horsepower	Stated Speed
			Tons		*Kts. per Hr.*
1840	BRITANNIA ACADIA COLUMBIA CALEDONIA	Boston via Halifax	1,155	400	8½
1844	CAMBRIA HIBERNIA	Boston via Halifax	1,422	500	9½
1848	AMERICA NIAGARA EUROPE CANADA	New York direct	1,820	680	10½

When the Cunard transatlantic service was opened between Liverpool and New York, the new British steamers were designed to be not only larger but also faster than those in the Liverpool-Boston run. In 1847, the average passages of the Cunard steamers to and from Boston occupied 15¼ days, but it was the expressed hope of the builders, owners, and British Government that on the longer run, without a stop such as at Halifax, Nova Scotia, the new Cunarders "would be able to average between Liverpool and New York about 12½ days westbound and probably around 12 or 12¼ days eastbound."

A comparison of the 1,829-ton average size (British register) of the Cunard steam packets of 1848 with the tonnage (old measurement) of the American sailing packets built for the various New York transatlantic lines at or near the same time is of interest:

Name of Sailing Packet	Ton-nage	Year Built	Line	Name of Sailing Packet	Ton-nage	Year Built	Line
	Tons				*Tons*		
ISAAC WRIGHT	1,161	1847	Black Ball, Liverpool	DEVONSHIRE	1,149	1848	Black X, London
MANHATTAN	1,299	1849	Black Ball, Liverpool	LONDON	1,145	1848	Red Swallowtail, London
WEST POINT	1,046	1847	Red Star, Liverpool	NEW YORK	991	1847	Old Line, Havre
CONSTELLATION	1,560	1849	Red Star, Liverpool	SAMUEL M. FOX	1,062	1850	Old Line, Havre
NEW WORLD	1,404	1846	Blue Swallowtail, Liverpool	ST. DENIS	959	1848	Second Line, Havre
ALBERT GALLATIN	1,435	1849	Blue Swallowtail, Liverpool	GALLIA	1,190	1849	Whitlock, Havre

As compared with the 1,829 tons of the British Cunard steam packets, the new American New York-Liverpool sailing packets averaged 1,317 tons (U.S. registry), the London packets 1,147 tons, and the Havre packets 1,050 tons.

When the British-subsidized Cunard Line inaugurated its Liverpool-New York service on January 1, 1848, it had the benefit of eight years' experience in operating a packet line of steamers in the North Atlantic between Liverpool and Boston via Halifax. Therefore, the American sailing packets became subjected to real competition, for they had to fight not only the advantages of steam propulsion in time of crossings (particularly on the westward passage) and the ability to schedule in advance dates of arrivals as well as of sailings with a fair degree of accuracy (within one or two days)—and this coupled with experienced and successful steam packet management—but also the power of British Government money, which was henceforth to be used to subsidize mail steamers in driving American shipping from the North Atlantic and from all established trade routes on the Seven Seas.

Congress Authorizes the First Mail Subsidy to American Deep-Sea Steamship Lines—1845

As early as 1840, Edward Knight Collins made this statement: "There is no longer chance for enterprise with sails. It is steam that must win the day. I will build steamers that shall make the passage from New York to Europe in ten days or less." Collins was then operating with success and profit, in the famous New York-Liverpool Dramatic Line, four comparatively new and consistently fast, high-quality sailing packets ranging in size from 895 to 1,030 tons each. Primarily because of Collins' activities, Congress wavered in its previously expressed sentiment "to stand by sail," for "American merchant ships, and particularly our sailing packets, lead the world." On March 3, 1845, after four years of consideration and discussion, Congress halfheartedly passed a bill authorizing the postmaster general of the United States "to contract for the transportation of the United States mail between any of the ports of the United States and a port or ports of any foreign power, whenever, in his opinion, the public interest will thereby be promoted . . . for any greater period than four years and not exceeding ten years. All such contracts shall be made with citizens of the United States, and the mail to be transported in American vessels by American citizens." It was understood that the postmaster general would contract for mail service and pay government subsidies to steamship lines only, and it was hoped that the vessels so subsidized would be suitable and available for naval purposes.

Originally, the American Junius Smith, of British *Sirius* fame and organizer of the British & American Steam Navigation Company, made a proposal to the United States Government for a subsidized line of American-built and owned mail ships. A little later, Robert Bennet Forbes, of Boston, a pioneer in the practical and successful application of screw propulsion for deep-sea ships, was influenced—with a patriotic urge—to submit a proposal to the government for running a line of steamers to Havre, and he specified a subsidy of $500,000 a year if the right ships and right sort of reliable fast service were desired. Forbes knew ships as well as or better than any man in the United States (and would have used Ericsson as his engineer), but while an experienced sea captain and operator of vessels—both sail and steam—he was not experienced in running a packet line in the North Atlantic. Edward Knight Collins, the owner-manager of the most modern and successful fast line of transatlantic sailing packets, submitted a proposal to the government to establish a line of 2,000-ton steamers to run between New York and Liverpool, specifying certain conditions and a subsidy of $385,000 a year. Collins, of New York, and Forbes, of Boston, who were both keen and experienced marine men, did not think much of the March 1845 U. S. mail subsidy law and its indefiniteness and procedure of operation, and they did not hesitate to say so. The result was that the postmaster general turned down their proposals and entered into a contract with Edward Mills, of New York (a man virtually unknown in marine circles), to carry transatlantic mail from New York to the ports of Southampton, Havre, and Bremen by means of four steamships that he obligated himself to build. Edward Mills incorporated the Ocean Steam Navigation Company on May 8, 1846, and formed his steam packet line, which proposed to build the four steamers specified, and on June 19, 1846, contracted with the postmaster general for a mail subsidy totaling $350,000 annually, of which $200,000 was to be allotted to two steamers in the Bremen service and $150,000 for two steamers in the Havre run, all vessels being required to call at Southampton or other approved English Channel port on every outbound and homebound passage. New York was shocked that the United States Government had given a contract that carried with it the founding of New York's first subsidized transatlantic steam packet line to a "mere nobody" without marine experience and whose name "commanded no respect." The New York HERALD expressed the fear that the Mills steamship company would become a Wall Street plaything like the Harlem and Erie railroads.

Mills had trouble raising capital in America to finance his line, for United States investors seemingly either had but little confidence in him or felt very much as Collins and Forbes did about the subsidy act; furthermore, they were too wedded to and too optimistic about sail. Although the bill authorizing the payment of mail subsidies very emphatically stated that such sums should be paid only to Americans for mail carried in American ships by Americans, it would seem, according to documents of September 4, 1850, that "money was furnished for the undertaking by the little government of Bremen, and by individuals connected with the enterprise on the other side of the Atlantic, and pretty largely furnished too." The Saugstad Report says that Mills was unable to raise sufficient capital for his steamship line in the United States until the senate of Bremen, with the aid of some of the other German states that were anxious to secure direct postal service and steamship accommodation for immigrants, contributed $286,000, through American business firms, to the capital stock of $534,000 of the company, which then came largely under German control.

The pioneer ship of this service, the *Washington* (1,640 tons), sailed from New York for Southampton and Bremen on June 2, 1847, and the *Hermann* (1,734 tons) entered the service early the following year, leaving New York on her first passage on March 21, 1848. These two steamers, which were built "cheaply—of necessity," were not fast, primarily because of their low power and small boilers. Writing of them authoritatively, an historian has said: "The ships were excellent sea boats and as good carriers as ocean steamers were in that day of bulky [low-pressure] machinery and large coal consumption." Nevertheless, the pioneer United States-subsidized transatlantic steamers were nothing for the country to be proud of, and they can be designated as "inferior." Westervelt & Mackey, the builders, it has been well said, were "better known for the quantity than for the performance of their Havre packets," but they did construct heavily timbered hulls, even though the steamers were neither well modeled nor high class in regard to the strength obtained for the weight of material used in the hulls. The Novelty Iron Works, which produced the machinery, made a poor job in both design and construction, and the steamers—both hulls and machinery—were more costly to build, repair, and operate than anticipated and were too slow to secure much of the European mail business or impress the Europeans with the quality of American steamship competition (as did the Collins liners that followed them in 1850).

The pioneer Cunard vessel, S.S. *Britannia* (then seven and a half years old), left Boston the same day as the *Washington* steamed out of New York Harbor on her maiden passage eastbound, and the Cunarder beat the new American Mills steam packet to England by two days; on her second voyage, the *Washington* had to put into Halifax with engine trouble. The British are often unfair in their comments on American-built vessels, but the Southampton correspondent of the London TIMES was not entirely wrong when he reported to his paper that "in point of size, she [the *Washington*] looked like an elongated three-decker, with only one streak around her; but about as ugly a specimen of steam-ship building as ever went through this anchorage." The machinery of both the *Washington* and the *Hermann* had to be altered several times. The original boilers were too small and the paddle wheels too large, and no matter what prejudiced patriotic writers may have said about the vessels and their performance, it is clear that their speed was slower than that of their rivals, and the Ocean Steam Navigation Company, from the start, greatly needed an experienced ship man as manager, much more competent technical men in the design of machinery, and a higher-class naval architect.

It was said by contemporaries that the *Washington* "averaged about fourteen days" between the terminal ports of New York and Bremen, including the period of detention, and that the *Hermann* was "about a day longer in her crossings." Records of the operation of the vessels for a term of years, however, show that the *Washington's* best passage from New York to Bremen was made in 12 days 10 hours and that her best eastbound crossing to a channel port was claimed to have been negotiated in 11 days 22 hours. The longest passages of the *Washington* between New York and the German port occupied 16 days outbound and 17 days homeward bound. The *Hermann* made an eastbound crossing to Bremen in 13 days 9 hours, and her best westbound run required 13 days 13 hours; her longest crossing going east occupied 17 days, and a stormy return trip against heavy western gales required 19 days.

The history of the *Hermann* is of interest. She is reported to have cost $410,000 and was operated by the Ocean Steam Navigation Company between New York and Bremen via Cowes from 1848 to 1857. In 1858 she was sold to the California, New York and European Steamship Company and arrived at San Francisco on November 27, 1858, from New York. She operated on the Pacific Coast until 1866, when she was purchased by the Pacific Mail Steamship Company. She sailed from San Francisco to Yokohama March 1, 1867, and was used by the line as a repair ship and a freight and store depot at Yokohama during 1867 and 1868, following which she was put in the oriental coasting service and chartered to Japanese daimios as a transport. She was wrecked on Point Kwatzu on February 13, 1869, during a voyage from Yokohama to the Straits of Sangar; the loss (due to bad navigation) was no fault of the steamship or of her machinery, which had seen service for twenty-two years in the North Atlantic and on the Pacific. She had successfully weathered severe China Seas typhoons as well as the frequent westerly gales of the Roaring Forties in the northern latitudes during her ten years in transatlantic steam packet service.

Because of financial complications and difficulties, Edward Mills and associates had to organize a separate corporation to build and operate steamers on the Havre run; this was accomplished, however, after much delay, and the *Franklin* (2,184 tons) and the *Humboldt* (2,181 tons) were placed in the New York-Havre steam packet service in 1849-1850. The average running time of these two vessels between New York and Cowes (in the south of England) was stated as 12 days 17 hours eastbound and 12 days 22 hours westbound.

The following is a comparison of the principal dimensions of the first four transatlantic steamers built for Edward Mills and his associates to operate in harmony with a contract entered into by him with the postmaster general. Westervelt & Mackey, New York, built all of the four vessels, and whereas Mills operated the Bremen line, the *Franklin* and *Humboldt* inaugurated an American steam packet line between New York and Havre under the management of Fox & Livingston (Mortimer Livingston).

	WASHINGTON	HERMANN	FRANKLIN	HUMBOLDT
Length on deck—feet	236	241	263	292
Beam—feet	39	40	41.8	40
Depth of hold—feet	31	31	26	27
Average draft—feet	19.5	19.5	18.5	19.5
Tonnage	1,640	1,734	2,184	2,181
Engines—diameter of cylinder and stroke in inches	72 x 120	72 x 120	81 x 96	84 x 108
Steam pressure—pounds per square inch	14	12	15	15
Diameter of paddle wheels—feet	34.7	36	32.2	35
Revolutions per minute	11	11	13	14

Unfortunately, the *Humboldt*, which was said to have cost $560,000, was wrecked at Halifax on December 5, 1853, and the *Franklin* was stranded on Montauk Point, Long Island, July 17, 1854. These vessels were replaced by two excellent steamships, the *Arago* (2,240 tons) and the *Fulton* (2,307 tons), built at New York in 1855, which, it has been said, were "somewhat better than any ocean-going steamships theretofore built in the United States." These steamers were about 290 ft. long, 41 ft. beam, and 31½ ft. deep, and each was fitted with two oscillating engines, with cylinders 65 in. diameter and 120 in. stroke. They were brig-rigged and had three decks and six watertight compartments. The Bremen steam packets *Washington* and *Hermann* operated until 1858, when their subsidy was withdrawn. The line was abandoned and liquidated by its German backers in favor of the North German Lloyd. The four original Mills subsidized liners were a great disappointment to the nation at large and were really deemed obsolete by competent marine authorities when they were new. Chief Engineer Haswell of the U. S. Navy stated that the *Washington* and *Hermann* were failures in many important respects; yet the *Hermann* proved useful for some twelve years on the Pacific after her packet service in the North Atlantic was over. The *Arago* and *Fulton* of the Mills Havre line (New York & Havre Steamship Company) continued in that packet service until they were chartered by the government in 1861 for use in the Civil War.

It was generally said in England in 1846-1847 that it was the United States Government contract with Edward Mills and the building of the transatlantic steam packets *Washington* and *Hermann* for use on the New York-Southampton run that caused the Cunard Line, heavily backed by the British Government, to inaugurate its Liverpool-New York line. It is significant and expressive of the attitude of the British toward American shipping that, when the pioneer United States steam packet *Washington* arrived at Southampton on her maiden crossing, the only reception—popular or official—given the vessel was the prompt arrival on board of a government agent with the order that "all mail landed would be required to pay to the British post office full sea rates from America as well as the usual inland rates."

The Mills transatlantic liners fell far short of original hopes and expectations and were branded as inferior in both class (appearance and general quality) and performance in service (speed, reliability, and comfort) not only by the marine fraternity on both sides of the

Atlantic and would-be patrons of the line but also by the United States Government. It was soon evident that these steamers were not the type that Congress had in mind when it granted subsidies for steam vessels to compete successfully with the British Cunarders. The failure of the Mills steamers to furnish the quality of transatlantic steam transportation desired and hoped for under the Stars and Stripes gave Edward Knight Collins, the progressive and exceedingly competent owner-manager of the fastest sailing packet line crossing the Atlantic, his opportunity, and he made the most of it through political channels. With twenty years' experience with packet ships and in transporting passengers and freight (the last ten across the North Atlantic), Collins knew ships and had been one of the first sailing packet men to see that steam would replace sail in the Atlantic "ferry." He urged government support of steamships along lines followed by the British, so that the United States could own and operate better and faster mail and passenger steamers than Britain and "drive the Cunarders off the ocean."

The United States Steamship Subsidy Act of 1847 and the Collins Line of Transatlantic Steam Packets

On March 3, 1847, the United States Congress passed an act that specifically authorized the secretary of the navy (and not the postmaster general) to accept the offer made the government by Edward K. Collins to establish a line of 2,000-ton steamers to operate between New York and Liverpool. The act provided for the entering into contracts by the secretary of the navy for a stated period of time for the transporting of mail on vessels built for the merchant fleet as naval auxiliaries. The contracts stipulated in the bill were with E. K. Collins (The New York and Liverpool Mail Steamship Company—better known as the "Collins Line") for transporting the mail between New York and Liverpool; A. G. Sloo for transporting the mail between New York and New Orleans, with a stop at Havana, and from Havana to Chagres on the Isthmus of Panama (George Law's line); and with C. H. Aspinwall and associates for a mail service between Panama (Pacific side) and the ports of San Francisco and Astoria.

The contract made by the government with Collins in November 1847 was for $19,250 per voyage for twenty voyages (two voyages per month for eight months and one per month for the other four months)—a mail subsidy of $385,000 per year, said to be "a smaller sum than that with which the Cunard Line, with its slow steamers, had started ten years before and a very much smaller sum than it was then receiving." For this subsidy, which was to be paid for a period of ten years, the Collins company obligated itself to build four steamships measuring "not less than 2,000 tons each" and to complete them ready for sea within eighteen months; also a fifth ship "as early as may be practical thereafter." Each ship was to carry a naval officer (in charge of the mails) and four naval graduate midshipmen to serve as junior deck officers.

The trouble with Collins and his company was lack of capital, poor financing, and Collins' unbridled personal ambition (without figuring out the cost of his plans) to build fast steamers and run the "Scotch-built, Scotch-managed Cunarders off the sea." Collins knew ships and was a hard worker and a driver, but he was extravagant where the canny Scots were frugal. His company had a paid-in capital of $1,200,000, which was insufficient. Instead of taking this shortage of available funds as a warning, Collins contracted not for the required four vessels of 2,000 tons each, or 8,000 tons total, but for four steamers that measured 11,131 tons, or about forty per cent more than he was obligated to build to earn the stipulated subsidy. Yet in fairness to Collins it should be said that the government officials at Washington definitely assured him that the prime thing desired was "a fleet of the finest, biggest, and fastest steamships afloat" and that if such ships were built and proved their high quality in service, the matter of expense was not important and Collins, his business associates, and the United States Mail Steamship Company would be suitably reimbursed and protected from loss. Collins had the powerful financial backing of James and Stewart Brown, the New York branch of the international banking family, and the steamship company, which was popularly known from the start as the "Collins Line," was organized in early December 1847, with Collins, the Browns, and their close associates believing implicitly what Washington officials of the government told them; hence 2,860-ton steamships were designed to fill the contract instead of 2,000-ton vessels, and later the fifth ship (the *Adriatic*) was built of 4,144 tons, or 2.07 times the minimum size stipulated.

The Collins Line was short of money from the start, and Congress (listening sympathetically to the importunities of Collins) by an act of August 3, 1848, authorized the secretary of the navy to advance the company $25,000 a month on each of the four ships building until they should be put into commission, and the time for their completion was extended to June 1, 1850. The total advance granted was apparently a year's subsidy of $385,000, which the line was required to repay to the U. S. Treasury in ten annual installments, and by the act of March 3, 1851, interest on these loans up to that date was waived. This government advance to the Collins Line was paid back in installments in harmony with the terms of an agreement covering the loan, but at that time nothing was done by Congress to make good the promises and assurances of the administration in regard to paying additional subsidies for good, large, and fast steamships.

The first four Collins Line steam packets were:

Name of Steamer	Tonnage	Builder	Name of Steamer	Tonnage	Builder
ATLANTIC	2,845	W. H. Brown, New York	BALTIC	2,723	Brown & Bell, New York
PACIFIC	2,707	Brown & Bell, New York	ARCTIC	2,856	W. H. Brown, New York

The *Atlantic* and the *Arctic* were partially designed and supervised in building by George Steers, the naval architect responsible for the famous schooner yacht *America*. All of the Collins liners were bark-rigged steamships, with straight stems and high freeboard, and side-wheelers. Whereas the vessels turned out by each of the two builders varied somewhat, the steamers were approximately 282 ft. to 286 ft. long, 45 ft. to 46 ft. beam, and 32 ft. deep to the weather deck. A normal load draft was stated as 19½ ft. forward and 20 ft. aft, but 21 ft. appears in later records. According to reports, the liners carried "250 passengers, excluding emigrants, and 2,000 tons of cargo," but due to the weight of the hull, machinery, needed coal, fresh water, supplies and stores, etc., this stated figure of cargo capacity is obviously not weight in long tons, as the displacement of the steamships was somewhat less than five thousand tons at load draft. The machinery for the vessels was furnished half by the Novelty Iron Works and half by Allaire. It consisted of side-lever engines of 840 nominal horsepower (with cylinders 95-96 in. diameter and from 9 to 10 ft. stroke) and side wheels. The steam pressure was seventeen pounds per square inch, revolutions were about sixteen per minute, average speed was about 316 miles per day (record run, 330 miles, which stood until 1864) and 13 knots per hour, with a coal consumption of about eighty-three tons per day. The machinery was designed and built under the supervision of the chief engineer of the U. S. Navy, and it was officials of the government of the United States and not private shipbuilders who decided that the steamers, which were to be potential cruisers, should have paddle wheels and not be fitted with screw propellers. Commodore Matthew C. Perry, who was detailed to "observe and advise" in regard to these merchant steamships (before he went on his mission to open up Japan for trade), reported on the best method of propulsion for these subsidized transatlantic liners. His statement that paddle wheels were and would remain preferable to screw propellers was concurred in by most U. S. Navy engineers as well as most of the country's naval constructors and was identical with the statements made by the British Admiralty, which insisted on Cunard's building side-wheel Atlantic liners, designed as auxiliary naval cruisers, until the *Scotia,* a "paddler" (3,871 tons; 379 ft. long), was built in 1862.

Some ridiculous statement had been made by "authorities" in regard to the Collins liners. One was that the four original steam packets were heavily canvased like sailing packets, but were bark-rigged and "could sail nine knots under sail alone"—which presumably means 9 knots per hour under canvas only. A daguerrotype by Beckers & Piard shows the liner *Arctic* lying at the foot of Canal Street, New York, coaling from a schooner, and the vessel is lightly sparred and rigged, with slender lower-masts and topmasts and with three small yards on fore and main; she carries a spanker on the mizzen and gaffs for similar fore-and-aft sails under the lower yard on fore and main. The lofty and impressive smokestack and paddle boxes are between the fore and main masts. The rig is that of the usual steamship of her period, carrying sail auxiliary for use in an emergency, for steadying the vessel in a seaway, and for possible help in favorable winds; but the sail spread would never do more, in case her engines broke down, than help the vessel to keep on her course and limp into port.

The *Atlantic* inaugurated the service, sailing from New York on April 27, 1850 (two years and five months after Collins had made his contract with the government and three years and fifty-five days after the act authorizing the contract had been passed by Congress). The *Pacific* made her maiden voyage in the early summer, the *Baltic* in November, and the *Arctic* in December of 1850, and the four "big steamships" made their passages with extraordinary regularity and freedom from accident for several years.

The Collins steam packets were reported as "dry, comfortable, fast, and reliable." In 1848 the Cunard S.S. *Europe* had lowered the transatlantic record to 11 days 3 hours, but in 1851 Collins liners crossed in under 10 days and the following year established a record of 9 days 13 hours westbound. The London TIMES printed a decidedly pessimistic editorial, from the British viewpoint, stating that it was evident that the Americans, who had achieved supremacy upon the seas with sail, were going to maintain their position of leadership and domination with steam. Lindsay, the British marine historian, after thoroughly examining the *Arctic,* testified that her equipment was "complete and of the highest order" and that her cabin accommodation "surpassed that of any merchant vessel Great Britain then possessed." We also read that Collins' "magnificent liners" were "unbeatable in speed and luxurious appointments" and "supreme on the seas" in the early fifties. Contemporary authorities speak of them as having "graceful proportions, serviceable, seaworthy dimensions" and as being "built more massively than a battleship of the line." Their frames "were strapped diagonally with iron," and they were the "strongest wooden steamships ever constructed." William H. Clark says that they were "sharp nosed," yet rode the seas "high and dry," and that the vessels "were greeted with delight and considered so superior to the clumsy Cunarders that there was no question of America's continuing master in steam as well as in sail." He adds: "The Collins liners carried more passengers per ship than the Cunarders, made faster time, and made more money. While sailing packets were still being operated, and indeed, being built, the Collins four magnificent ships were making history and clearly pointing the way to continued American supremacy."

Captain McKennon of the Royal British Navy, after voyages of observation on board both Cunard and Collins liners, declared, "There are no ocean steamers in England comparable with the *Baltic*" (of the American Collins Line). Yet we read that Collins insisted upon the steamships' being driven so hard that the money spent on repairs between each voyage was tremendous. It was later said that no wood hull could have been built to withstand for many years the abuse the Collins vessels were subjected to, and Collins was criticized by his enemies for adopting a "very expensive method of gaining supremacy" in the Atlantic "ferry" and for continual "secret repairs" being made to keep overdriven and overstrained steamers running. However, while Collins was in charge and kept in funds by a suitable government subsidy, his steamships ran with clock-like regularity, the patrons of the line were pleased, and the country was proud of the vessels and elated at their splendid performance. Henry Hall, the United States Government historian, writing of the Collins steam packets, says:

The ships had the confidence of the public and were liberally patronized. Their competition for freights brought the rates down from £7 10s. per ton to £4; a great public benefit because the United States were importing enormous quantities of European manufactures and paying the cost of freighting to this country. The voyage to Europe was shortened by these ships, and travel was promoted, and in eight years, from the time they began, the passenger traffic had increased fivefold.

It is of interest to note that the payment of government subsidy for express, mail, and passenger service really resulted in economic gains—to the importers and the country at large in the reduced cost of imported goods delivered at New York—that represented many times the amount paid to promote the service. The South and the West, which benefited greatly by the big reduction in freight charges on subsidized ships, persistently refused, however, to consider this phase of the subject; they fought politically to reduce and finally eliminate such subsidies, and they ultimately succeeded, by the withdrawal of such payments, in driving American steam vessels from the seas.

Marvin says that the Collins steamers, "with their high speed and their liberal management, quickly won the best trade away from the Cunarders," and he further states:

One important peculiarity of the Collins liners was that their speed steadily improved. From the very first, however, they were swifter than their Cunard competitors and the swiftest large seagoing ships afloat. . . . Even when Cunard put greater nominal horsepower into his ships, as he did with the *Asia*, which had a horsepower of 816 as compared with the 800 of the *Pacific* and *Atlantic*, the Americans kept constantly ahead.

The American Collins Line steam packets soon proved in transatlantic service that they were "very much faster as well as better in every way" than the four crack Cunarders built in 1848 and designed at the same time as the Collins steamships. The British Government thereupon urged and financed the Cunard Line to build two bigger, faster, and superior steamers for its Liverpool-New York run and put into service the best high-powered modern steamships that Britain could produce. The result was the *Asia* and the *Africa*, built in 1850. These vessels were side-wheelers of 2,226 tons British register, 266 ft. long, 40 ft. beam, and 27 ft. deep, with engines having cylinders of 96¼ in. diameter and 108 in. stroke. The hulls were quite a little smaller than those of the Collins liners and were some 5 ft. to 6 ft. narrower; but even though equipped with bigger engines of more power, they failed to compete with the American steam packets in either speed or comfort. An official British comparison of the Cunard S.S. *Asia* and the Collins liner *Atlantic* says that whereas the *Asia* was 16 ft. shorter, 6 ft. narrower, and 5 ft. less in depth than her American rival, she had engines of greater cylinder diameter, with the same length of stroke, which "should develop more power and drive the smaller and better-proportioned hull faster through the water." It is evident that the *Asia* and *Africa* did not come up to British expectations, and their "better-proportioned hulls" proved decidedly inferior in model from the standpoint of both speed and seaworthiness (including sea comfort for passengers) to the American-designed and built steamships. It is not surprising, therefore, that it was said, "The United States steamships are as superior in design, construction, and operation to those of Britain as are American sailing ships."

Edward K. Collins was an enthusiastic, patriotic, and driving manager of the premier American steam packet line, and yet he must have had a good sportsmanlike instinct, for the British press gave him credit for "a most magnanimous act" that evidently occurred when the Collins Line was in funds and its credit good. We read that a Cunard liner had been detained in the port of New York for customs irregularities on the part of her crew and that the ship was required to post a bond for $150,000 before she could clear the port. As the British ship was experiencing difficulty in raising so great a sum, the Collins Line came to the rescue and put up the bond in order that the rival line should not miss a scheduled sailing.

The original quartet of steam transatlantic packets of the Collins Line naturally cost more to build than did the decidedly inferior and more cheaply designed, constructed, equipped, and furnished Cunarders, which were built and put in the service to compete with the American ships. It is said that the four Collins steam packets cost about $675,000 each as compared with $575,000 for each of the competitive Cunard liners *Asia* and *Africa*, but the latter vessels, while considered "good British ships," were admittedly "neither in speed nor comfort equal to the stately Collins liners." Lindsay, the British authority, attributes the superiority in speed of the Collins steam packets over the Cunard and other British liners to the American methods of management and to the vessels' "effective boilers and ability in their preparation." G. S. Houston, on July 7, 1852, in Congress, quoted the owners to the effect that the vessels had cost on an average $736,035.67, or a total of $2,944,142.68—and this construction was undertaken by a company capitalized at only $1,200,000.00. The original estimate of cost was $400,000 for a moderate-sized and powered vessel of 2,000 tons, as required by the Collins contract. Later it was said that the gross tonnage figures of the four Collins liners, shown on the register as from 2,707 to 2,856 tons each, considerably underestimated the actual size of the vessels, as "some six feet in depth was not included in the dimensions on which the tonnage measurement was made." Wood was not a very satisfactory building material for hulls as big as the Collins liners, which had to carry heavy and ponderous steam machinery and be driven at full speed for over ten days at a stretch across the usually turbulent Atlantic; but notwithstanding the high cost of construction and the expenses associated with delays—the education of the engine builders and the development of plant facilities—it has been said that "considering what was actually produced for the money spent in hull size, volume, and weight and in the weight and power of machinery, the Collins liners were actually cheaper and cost less per unit than the rival Cunarders."

Incompetent and prejudiced critics have referred to the Collins Line as "a poorly advised and poorly managed venture in steam navigation." The cost of construction and the delay in completing the building of the ships have been criticized, as have "serious errors in estimates," which, it is said, the government did not properly examine. The facts are that the Collins Line was a boldly conceived and heroic, patriotic and ardent venture to put the United States—after a period of somnolence and indifference—into the steam packet business of the North Atlantic. Collins was head and shoulders above any other man on either side of the Atlantic as the manager of a line of transocean vessels to transport mail, passengers, express, and fine freight on a fast maintained schedule, with comfort and satisfaction to passengers. But Collins was not to blame for increasing the size of the first four steamers forty per cent over contract requirements—with cost inevitably proportionally increased—when he was encouraged to do so by government officials. Collins had expert practical and technical knowledge in regard to the hulls of ships and had been personally responsible for important model changes in transatlantic sailing packets, but he admitted knowing nothing about marine steam engines and boilers. As he seemed unable to contact convincing authority in the limited privately owned engineering works of the country, he appealed to the U. S. Government for help and placed the engineering end squarely up to the Steam Engineering Department of the U.S. Navy, which became responsible not only for the type and detailed design of machinery (engines and boilers) used but also for the time required for construction. Collins was not to blame in the least for the backwardness of the United States in the late forties in regard to machine shop facilities and limited capacity, but neither were the U.S. Navy designers. If the U.S. Government, through Congress and a watchful and capable administration, had encouraged deep-sea steam navigation in the thirties as had the British Government, America would have had more engineering shops of larger capacity and with more experience than were available when machinery was wanted for the Collins Line steamers in the late forties. Edward K. Collins, as an experienced ship operator, well knew that transatlantic freight and passenger rates would drop with (1) the entrance of the British-subsidized Cunard Line into the New York-Liverpool trade, (2) the increase of transatlantic steam navigation, including the sailing of the Mills liners to England, Bremen, and Havre, and (3) the entrance of more and bigger sailing packets into the very competitive carrying trade. He also knew that when the new Collins liners entered the service, the revenue from the carrying of passengers and freight could be expected to drop further, but he felt that the nation as a whole would benefit from the lower charges and that the government could well afford to pay part of the country's economic gains as subsidies to steamship lines that, through speed and quality of reliable, regular service, made savings in both time and money possible. Collins, in discussions with government officials, the administration, and statesmen (or politicians), was frequently assured, prior to 1853, that his company was warranted in proceeding on the principle that sufficient aid would be forthcoming from the government to meet all expenses, provided the steamers made a good record and the country as a whole benefited thereby; moreover, it was admitted that in this venture the Collins Line and the government were partners, that delays in construction as well as increased size of vessels and machinery were very costly, but that the results to be attained would justify all that was being done to put a line of the best and fastest possible steamers in the Atlantic "ferry" operating under the Stars and Stripes. John G. B. Hutchins, in THE AMERICAN MARITIME INDUSTRIES AND PUBLIC POLICY, an economic history, is opposed to subsidies, severely criticizes and greatly undervalues E. K. Collins and his achievements, admits that engineers of the United States Navy designed the machinery of the Collins liners, and says:

> Since the machinery was of unprecedented size and power, some difficulty was experienced in the shops in successfully bringing it to completion. Every effort was made to secure strong and powerful machinery which would enable the ships to outsail the Cunard ships. There can be no doubt that from the technical standpoint every effort was made to produce the largest, strongest, and fastest wooden ocean-going paddle steamships ever built.

But Hutchins criticizes the cost of the American Collins liners because it "was greatly in excess of that of comparable British wooden liners"—a meaningless surmise, for there were no "comparable British" vessels. Yet Hutchins further says that the higher cost of the new American steam transatlantic packets "was due to the insistence of Collins [with U.S. Government concurrence and hearty approval] on building vessels to specifications in excess of those established in his contract, to the desire of the government to secure first-class war steamships capable of carrying the heaviest guns, to the large amount of high-priced labor required in building the hulls and engines, and to the decision to construct the ships in the high-cost New York shipyards, which were then filled to capacity with clippers and packets." It is doubtful if the last cause stated for claimed high costs is valid, as the clipper shipbuilding boom actually did not get under way until 1851 and reached its height in 1853, and all of the original quartet of Collins liners were completed and put into service in 1850; moreover, when the building boom for fast sailing craft for California did start, all the shipbuilding centers in the United States were similarly affected, and as the demand for steam vessels increased, orders for sailing packets diminished. However, during the forties and fifties, New York was the center for the construction of sizable steam vessels and particularly of their marine engines and boilers. Collins undoubtedly went to "pretty near the limit in dimensioning wood hulls to carry powerful steam machinery" that was to be driven "steadily and relentlessly" at full speed in all weather—wind and sea—on the North Atlantic for ten or more consecutive days. Iron construction for such vessels was lighter, stronger, and more durable, but there were no iron shipyards in the United States to build even a very moderate-sized ordinary vessel, and the government had done nothing to encourage such construction.

That cabin passengers around the middle of the nineteenth century preferred generally to travel on the fastest and most luxurious vessels—the same as they did in the twenties and thirties of the twentieth century—is attested by the fact that the New York HERALD of January 1, 1853, in statistics of passenger travel of the New York packets for the period from January to November 1852, gave the number of passengers carried by the Collins steam packets as 4,306 as against 2,969 conveyed by the Cunard Line. The American steamers carried 1,337, or 45 per cent, more passengers than the "crack British line," which company had been steadily engaged in transatlantic steam navigation since 1840, or nearly thirteen years, as against only about two and a half years for the Collins Line.

After the "crack British Cunarders" *Asia* and *Africa* were running steadily in the Atlantic "ferry" and the still larger and more powerfully engined *Arabia* (built in 1852) had joined the service, the following were the reported comparative lengths of passages in the early fifties as per the official logs of the two competitive—British Cunard and American Collins—lines of steam transatlantic packets:

	Length of Passages—New York-Liverpool Steam Packet Service		
	Eastbound		
Line	Shortest	Longest	Average
Collins Line (American)	9 days 17 hours	12 days 9 hours	10 days 21 hours
Cunard Line (British)	10 days 6 hours	14 days 3 hours	11 days 12 hours
Shorter time—Collins Line	13 hours	1 day 18 hours	15 hours

	Length of Passages—New York-Liverpool Steam Packet Service		
	Westbound		
Line	Shortest	Longest	Average
Collins Line (American)	9 days 13 hours	13 days 17 hours	11 days 3 hours
Cunard Line (British)	10 days 2 hours	15 days 20 hours	12 days 9 hours
Shorter time—Collins Line	13 hours	2 days 3 hours	1 day 6 hours

It is evident that the Collins liners were not only faster vessels but also much better-modeled steamers and better sea boats than the Cunarders, for whereas the Collins steam packets beat the Cunarders 15 hours on the average on the eastbound passage, they beat them 30 hours on the average on westbound crossings bucking the prevailing west winds and seas.

In 1840, Edward K. Collins had said that he would build steamers that would cross the Atlantic "in ten days or less." This proved to be no idle boast, for in May 1851 (when less than a year old) the Collins steam packet *Pacific* ran from New York to Liverpool in 9 days, 20 hours and 16 minutes, and in July 1852 the *Arctic* lowered the record to 9 days, 17 hours and 12 minutes. Westbound, the *Baltic* made the record run from Liverpool to New York in 9 days and 13 hours during August 1852. The Collins liners made a wonderful record for uniform, fast passages considering the variability of seas and weather encountered in an all-year service in the roughest trade route in the winter season on any ocean of the world. The steamers were driven as American sailing packets were driven, and the SCIENTIFIC AMERICAN on February 15, 1851, expressed its editors' views that it was "very foolish to push through a steamer on a long passage by dint of coal." But only by driving, burning coal, and making steam and engine revolutions could speed be obtained with any steam vessel. Collins did not stint in the use of fuel, and an official statement shows that, for the first twenty-eight voyages of the Collins "Big Four," the average cost of coal per voyage was $8,612.28, the total amount consumed being "well up towards 2,000 tons per round trip, including lay-up demands, heating, and cargo handling in the two ports" (about 1,826 tons at sea and around 140 tons in New York and Liverpool).

It was unfortunate that, from the start, the cards were stacked against Collins and, therefore, against the Stars and Stripes in the fight on the ocean between United States and British steamships. Samuel Cunard, although a Canadian descended from Pennsylvanian Royalists, was a Scot in both blood and temperament; he was cautious, conservative, and capable, but had behind him the determined, aggressive government of a great nation, with a single mind as to marine matters. At times, the British nation rode rough shod over Cunard's economic plans, but saw to it that the Cunard stockholders were protected and not only did not lose money but also enjoyed a fair return on their investment. Edward K. Collins was a brilliant, imaginative, and dynamic ship authority and operator, with the vision and passion to make his country not only great and respected in the realm of deep-sea steam navigation but also supreme. It is unfortunate that he was handicapped by his dependence on private capital, the restrictions of Congress, and the shortsighted politics of a disunited country then heading toward a definite division and the Civil War. What he needed to prove his greatness was a government like that of Britain behind him. Collins, with unlimited resources and with practical, competent, and sympathetic marine-minded government officials to advise him, would have started the United States pointing right on a path to glory through the medium of steamships at sea, which would have made his country as superior to any other nation in the realm of steamships (wood or iron, paddle or screw) as it then was in the entire field of wood sail—clippers, packets, general foreign traders, transients, and coasters. Collins, in his passion for the best, was extravagant, but he was horribly handicapped in having to deal with backward conditions in American engineering and the practical utilization of metals and with people who were incompetent, lacking in courage and initiative, and behind the times as far as world progress and the demands of the future were concerned; while over it all was the black shadow of opposition in the South and West to government encouragement "that would benefit the marine states of the Northeast" and the curse of sectional and narrow-minded politics, with its blind selfishness and opportunism.

In statements presented to Congress in May 1852, it was shown that the results of operations of the Collins liners up to December 1851, covering the first twenty-eight voyages of the Collins steam packet liners, were as follows:

Average operating expenses per voyage		$65,215.59
Average revenue per voyage:		
From passengers	$21,292.65	
From freights	7,744.20	
Total		29,036.85
Average loss per voyage		36,178.74
Subsidy received per voyage, including compensation for carrying mail and providing express service		19,250.00
Average net loss per voyage		$16,928.74

By the end of 1851, it was apparent that the Collins Line would not survive unless it received more subsidy from the United States Government. In February 1852, Collins resorted to a master stroke in lobbying, for he sent the liner *Baltic* from New York to the Potomac to show her to the members of the United States Congress, and he royally entertained aboard the steamship the president and cabinet, senators and congressmen. The mission, with its exhibition, entertainment, and expressed urgency of government assistance if the big vessels of America's peerless steamship fleet were to be kept in service, proved very successful; for, in the summer following, an act of Congress increased the subsidy to be paid Collins liners to $33,000 per voyage for twenty-six voyages a year (an average of one every two weeks over an entire twelve-month period), or a total of $858,000 per annum. The British Government's initial subsidy to Cunard when in 1840 that company placed four 1,140- to 1,160-ton paddle steamers on the run between Liverpool, Halifax, and Boston was £55,000, or $276,000, per year. This subsidy was rapidly increased to from $389,000 to $437,000 per year, and when the Liverpool-New York service was inaugurated, the subsidy was placed at £145,000, or $705,000, per year and afterwards, when the Collins Line competition developed, at a little over £173,000, or $843,000, per year. The subsidies paid by the British Government to the Cunard Steamship Company for its transatlantic steam packet service have been stated variously. Eugene Tyler Chamberlain, U.S. commissioner of navigation, in his annual report dated October 19, 1901, says that the initial subsidy paid the Cunard company by the British Government for its North Atlantic line of mail steamships was £45,000 ($218,700) in 1840-1841 and £55,000 ($276,300) shortly thereafter, but he states that by 1860 the subsidies had been increased to £191,000, or $928,260, per year. From official information published by the British Government under the title "Foreign and Colonial Packet Services 1840—1898-1899," the following figures have been copied showing the amount of subsidies paid the Cunard Steamship Company for transatlantic steam packet mail service during various years:

	Annual Amount of Subsidy Paid in			Annual Amount of Subsidy Paid in	
Years	British Pounds Sterling	American Dollars	Years	British Pounds Sterling	American Dollars
1840-1842	60,000	291,600	1847-1852	145,000	704,700
1842-1844	80,000	388,800	1852-1862	173,352	842,550
1844-1846	90,000	437,400	1871-1875	105,000	510,300
1846-1847	85,000	413,100	In the 1890's	about 100,000	about 486,000

Prof. James Russell Soley, in his review "The Maritime Industries of America," says:

It is beyond question that the sum paid to the Cunard Company in its early days, amounting to about 25 per cent per annum on the cost of the running plant and subsequently increased to $550,000, to $750,000, and to $850,000, was clearly a subsidy; that it was given with the plain intention of establishing firmly in English hands the transatlantic traffic, and that it accomplished the desired results.

When the Collins subsidy was increased by Congress from $385,000 to a possible $858,000 per year, it was officially stated that the British Government payments to the Cunard Line, which originally had been running at about £90,000 a year, had been virtually doubled. It was also authoritatively said, "The Cunard Line is now receiving $856,871 a year for ships that are much less costly than the Collins steamships to both build and operate, and are smaller, weaker, incapable of rendering a first-class transatlantic packet service, and are less adapted for conversion to war purposes." During a discussion of the subsidy bill in Congress in 1852, it was declared that "to effect a saving of a day and a half in the run between New York and Liverpool costs the [Collins] company nearly a million dollars annually." Opponents of the increased subsidy measure then before the United States Congress argued that Cunard vessels sailed oftener than the Collins steamers and that the British line—even if it did receive greater subsidy than the American company—had many more steamers in the service. Advocates for increased protection of the budding American steam merchant marine replied to such comments by stating that, whereas the Collins Line had only four steamers and the Cunard had seven, the total tonnage and power of the Collins fleet fully equaled that of the Cunard and that, "multiplying the tonnage of the two fleets and the number of voyages, the Cunard subsidy amounted to $5.75 for every ton that crossed the ocean and the Collins (increased) subsidy to only $4.82."

Disasters to Early Steam Packets—Both American and British

The years 1854-1856 mark the turning point in the fortunes of the American merchant marine. The clipper ship boom—during which the United States built the finest and fastest wood merchant sailing vessels that the world has ever seen and proved itself supreme in the realm of wood sail—was definitely and inevitably on the wane, the country was becoming more and more divided politically and in a politico-economic sense, a severe depression and business panic was developing, and one-half of America's finest fleet of transatlantic steam packets (the New York-Liverpool Collins Line) was to meet unprecedented disaster. On September 27, 1854, the Collins liner *Arctic* was rammed in a dense fog off Cape Race by the French steamer *Vesta.* Captain Luce, with the stricken *Arctic,* attempted to make land, but after four hours of steady steaming in a rough sea and strong wind, the inrushing water extinguished the fires in the boiler, and the ship gradually sank. Because of the heavy weather, only 50 persons reached shore (49 in two boats and 1 rescued from a raft), and 218 passengers (including the wife, son, and daughter of Collins) and 100 members of the crew (318 in all) lost their lives.

About sixteen months later (January 23, 1856), the *Pacific* of the Collins Line, with Captain Eldridge in command, one of the most capable and experienced skippers on the North Atlantic, left Liverpool for New York for a winter crossing with 45 passengers aboard, a crew of 141, and a valuable cargo (insurance carried on ship and cargo was $2,000,000). The *Pacific* was never heard of again, nor was even a piece of wreckage of her ever seen. She "went missing" and entirely disappeared with all who were aboard her. At the time, it was the generally expressed opinion of the marine fraternity that the ship struck an iceberg. The course and the known presence of ice and big bergs reported by other vessels seemed to justify this conclusion, and one authority wrote, "She was an extraordinary strong ship, proof against all the accustomed perils of the sea, save only collision."

The loss of the big, fine steamers *Arctic* and *Pacific* in the brief span of time from September 1854 to January 1856 was a blow and a crushing misfortune to the Collins Line. The two catastrophes, surprisingly, did not shake the confidence of either the traveling or shipping public in the line, and it was freely asserted that for neither disaster could the Collins corporation, its management, or its ships' officers be held culpable and that "both the *Pacific* and the *Arctic* were destroyed by unpreventable causes." However, the British stated that the crack new Cunarder *Persia,* the first of the Cunard Line's iron ships, was crossing at the same time as the *Pacific* and reported sighting an iceberg on the usual steamship course; that "it was possible that the *Pacific* crashed into it at full speed, as Capt. Eldridge would be hurrying to beat the *Persia.*" If the *Pacific* did hit an iceberg when steaming at full speed westward, then the disaster to an American-built, owned, and operated liner in the North Atlantic in 1856 resembles to a marked degree the appalling disaster, some fifty-six years later, to the British White Star liner *Titanic,* the largest and reputedly finest vessel in the world, which, while on her maiden passage from Liverpool to New York, at 2:20 A.M. on April 15, 1912, struck an iceberg when proceeding at full speed and went to the bottom, with a loss of 1,513 lives.

Both of the steamers of the Edward Mills transatlantic line, running between New York and Havre via Southampton, were lost during the period December 1853-July 1854. The *Humboldt,* the best, latest, and most expensive vessel of the Mills quartet, built in 1850, was lost near Halifax on December 5, 1853, and her running mate, the *Franklin,* was stranded and wrecked on Montauk Point, Long Island, on July 17, 1854, two months and ten days before the big Collins liner *Arctic* was rammed and sunk as a result of collision at sea with a foreign steamer during a heavy fog off Newfoundland. Four days after the *Arctic* went down in the North Atlantic, another fine new American steamer operating in the Pacific between San Francisco and Panama was wrecked (October 1, 1854); this vessel, the *Yankee Blade,* built in 1853, was of 2,200 tons, 275 ft. long, and a vertical beam side-wheeler, with an engine cylinder of 75 in. diameter and 132 in. stroke.

The loss of early steam packets was not, however, a disaster experienced only by the American lines, for the British & American Steam Navigation line's *President* (launched in 1839 and later authoritatively proclaimed to be "by far the finest of the British steamships built during the period prior to 1844") sailed from New York eastbound in the spring of

1841 and "went missing"—not a word being heard from her or of any person aboard her following the sailing, "nor was so much as a splinter of her wreckage ever seen." The *President* was commanded by Capt. Richard Roberts (formerly of the *Sirius*), who is famous as the "first master under whose command a steam vessel ever crossed the Atlantic Ocean" under steam power all the way. The big pioneer iron packet *Great Britain,* the first iron screw ocean-going steamship and the largest liner of her day, was put in the transatlantic service by the Bristol Steam Navigation Company in 1845 as a running mate to the historic *Great Western.* The *Great Britain* of 3,270 tons (length 322 ft., beam 48 ft., depth 31½ ft.), fitted with an engine having a cylinder 80 in. diameter and 72 in. stroke, piled up and was "wrecked" on the Irish coast in the fall of 1846 while on a westbound passage. Many of her passengers finally reached New York on November 18, 1846, on the Black Ball sailing packet *Yorkshire,* when that speedy ship made her record-breaking Atlantic crossing of 15 days, land to land, and 16 days, port to port. The *Great Britain,* being built of iron, was able to be salvaged, and she was patched up, refloated, and repaired after being on the rocks for two years; her days as a transatlantic steam packet, however, were over, and after extensive rehabilitation, she was placed in the British-Australian service. In addition to the loss of the *President* in 1841 and the catastrophe to the *Great Britain* in 1846, the British had the loss of the screw steamer *City of Glasgow* to mourn in 1854, and an historian writes that, whereas the hazards of the sea made such losses inevitable, "no United States steamship enterprise had such a melancholy record of wreck and death as the [British] Royal Mail steam packet line to the West Indies."

Lindsay, the British marine historian, tells us that in March 1841 the British Government awarded a subsidy of $1,200,000 to a company (the Royal Mail Line) which contracted to operate a line of British steamers of 8-knot speed between England and West Indian (and Gulf of Mexico) ports. Although this line—the Royal Mail West India Company—ran in waters that are usually "kindly" and always free of fog and ice, it lost seven vessels in the first ten years of operation. The record of these catastrophes is as follows:

Name of Steamer	Year Lost	Nature of Catastrophe	Where Lost	Lives Lost
ISIS	1842	Foundered	Off Bermuda	
SOLWAY	1843	Foundered	Off Solway	60
TWEED	1847	Wrecked	Yucatan	72
FORTH	1849	Wrecked	Yucatan	
MEDINA	1850	Wrecked	Caribbean	
ACTAEON	1850	Foundered	Off Cartagena	
AMAZON	1852	Burned	Off Scilly Islands	102

The loss of the *Amazon* was a distressing affair and a major calamity in every sense of the word. She was a "fine new steam vessel, the largest and best of the fleet," and was making her maiden voyage with many prominent passengers aboard. Yet this steamship line, with its unfortunate record of catastrophes and of never carrying out its time schedule, was encouraged and financed by the British Government. The admiralty reduced the required service one-half, but maintained the high subsidy, saw that the company made a profit, and protected it from competition. In 1850 the original contract was renewed, and the subsidy was increased from $1,200,000 to $1,350,000, the British Government asking that the company, in return for this increase of financial assistance, extend its service to Brazil and make the speed of new ships to be built 10 knots instead of 8 knots per hour. (At this time, the Collins Line was inaugurating its transatlantic service with steamships of 13-knot speed.) By the time that the eventful years of 1854-1856 rolled around, the United States had demonstrated its ability to design, build, and operate steamships to compete successfully with British steamships, although Britain was "originally a full decade ahead of us in the subsidy fostering of her steamship interest."

Collins and Vanderbilt, Competitors of Each Other As Well As of the British Cunard Line

Edward K. Collins, America's greatest steamship man prior to the Civil War, has been branded "extravagant," but this fault was primarily due to excessive patriotic enthusiasm, the driving of his vessels, their—at that time—"luxurious" appointments, and to his refusal to withhold any expenditure that would tend "to beat the British Cunarders," attract worth-while patronage, and add to the prestige of the Collins Line or to the glory and honor of the Stars and Stripes. Extravagance is a relative equation to be interpreted always by surrounding circumstances of necessity and time. Collins did what he set out to do, and under the schedule to which these wooden side-wheel steamships were bound, not only by contract but also by agreement with the administration and national pride, they "barely had time for repairs at terminals." It has been truly said, "Never in the history of any merchant marine have ships been driven as were the Collins steam liners." They held to their schedule and to the high standard of service set by Collins regardless of every affecting circumstance, and they carried with eminent satisfaction all who could obtain berths in them. They did not make money, but with the proper kind of intelligent, co-operative, and liberal government support they could have been made of continued great value to the nation, and with a fleet of cargo steamers to supplement the express, mail, and passenger service, the Collins Line could have been made to pay. At the time, however, sail—not steam—was the magnet for capital, and Collins and all others who promoted American steamship lines in the forties (and later) found it almost impossible to interest private capital.

In regard to this charge of "Collins' extravagance" in building, equipping, and operating his steam packets, it is amusing to make mention of the fact that one of the counts in the congressional antisubsidy indictment of the Collins Line was that "there were mirrors—actually mirrors—in the cabins!" Criticism that developed also embraced the "passenger pampering luxury" of call bells for stewards and stewardesses and the novel "annunciator system" by which efficiency of service was greatly increased with much less futile running around for both the steward's staff and passengers. Because of its merits, this device, introduced in ships by Collins, before many years came to be considered not a luxury but a necessity for all vessels, naval and merchant, of every nationality. Admiral Porter, in a statement presented to the Forty-first Congress, was unfriendly to Collins, and although Porter said that the line was so extravagantly run that he was "astonished" how it kept running at all, much of his criticism was a "boost" for the line as well as expressive of navy ignorance in the operation of commercial vessels. Porter said of the Collins Line ships:

> They burned an immense amount of coal; they were fitted out and fitted up in the most sumptuous manner; they had large crews, a large number of officers, and a large number of engineers, for they had powerful engines. They were run at full speed, and the company had not enough ships on the line to enable them to have proper relays, so they began to deteriorate very rapidly and they ran them out in a very short time. They had very large buildings in New York, a great many officers, and a great many people connected with them. All these had to be paid.

Undoubtedly, Collins wanted his line, its organization, and facilities to be impressive and felt that a "good front" was an asset, particularly in business dealing with foreigners and in competition with a heavily subsidized and ardently encouraged, supported, and protected, well-established British line of steamers, but it is doubtful that Collins at his worst, for sheer waste of money and effort, ever equaled the uneconomic records of government ignorance coupled with devastating red tape. The United States Navy, as a critic of the United States merchant marine, had no standing in an unbiased court in the realm of either competency or economics. The important as well as the specific points made by Admiral Porter in his criticism of Collins are facts expressive of his enthusiastic patriotic management (with a rapid mail, passenger, and express freight service placed ahead of profits and dividends); i.e., running ships at full speed with big crews, burning "an immense amount" of coal in order to obtain a speed higher than that of competitive lines, and the wearing out of the ships more rapidly than usual by maintaining an unprecedented fast and regular service without regard to conditions of wind and sea—weather or season of the year—on the world's most severe and turbulent trade route. It was primarily because of these very things, which a navy officer criticized, that the transatlantic steam packet service, as far as the public was concerned, was greatly improved (New York and Liverpool brought within ten days of each other), and while freight rates were cut in half, passenger traffic increased fivefold in eight years. For such brilliant attainments in service, a moderate ship subsidy was paid during certain years and a ridiculously inadequate subsidy during other years.

As the demands of service increased the speed, necessitated the burning of "immense amounts" of coal, and "wore out the ships rapidly," the government should have not only willingly paid the expense but also protected the investment of private enterprise and, after amortization charges, seen that the stockholders received a reasonable return on the money invested—money which they risked and lost in substantially expressing patriotism because of a dissentious and, in its actions, an un-American Congress. Winthrop L. Marvin says:

Edward K. Collins was a conspicuous New York merchant, the head of the famous Dramatic Line of sailing packets, a gentleman of devoted patriotism and the highest ability and character. He knew perfectly the sea and its affairs. He had a remarkable power of convincing and directing other men and a genius for the shaping of great enterprises. Intellectually, he stood head and shoulders above Samuel Cunard. As between the two chiefs of the two national steamship enterprises which were to vie with each other on the important route between New York and Liverpool, the advantage seemed to be overwhelmingly with the experienced, ardent, and ambitious American.

A good idea of the caliber of Edward K. Collins as a ship operator can be gleaned from his attitude toward and work following the grounding of his Dramatic sailing packet *Garrick* in a heavy fog on Deal Beach in January 1841. (This, by the way, was the only serious accident to any vessel of the Dramatic Line when operating for some twelve years under Collins' management, and all the sixty-seven persons aboard the stranded liner were got ashore safely.) The ship was not fully insured, and the report of the underwriters indicated that she was badly bilged and "an apparent total loss." They figured without Edward K. Collins, however, for that dynamic and resourceful man was determined to save his ship and keep the record of catastrophe on his sailing packet line clean. By ingenious procedure, good planning, and by tackling the "impossible" vigorously, with enthusiasm and confidence, the *Garrick* was finally refloated and towed to a dry dock for repairs. It had required two months of arduous work to make temporary repairs and float the ship, and another two months were occupied with permanent reconstruction; but by June 1841 the *Garrick* was back sailing regularly on the New York-Liverpool run, in which service she continued to operate until 1856 (i.e., fifteen more years), or until the Collins Dramatic Line and its successor (the James Foster, Jr., Liverpool line) discontinued the packet service.

Collins was deeply broken up over the loss in the autumn of 1854 of his fine ship *Arctic* (through a catastrophe for which the ship, her owners, and command were in no way responsible and which they could not have avoided), for his wife and children were passengers on the unfortunate vessel. The mysterious and tragic disappearance of the S.S. *Pacific* in January-February 1856 seriously affected the line and its operations, with half of its splendid liners gone, although the big *Adriatic* was being built. Money was greatly needed to hurry forward work to complete the new liner, and Collins maintained the sailing schedule of the line with chartered steamers. At this critical time, the United States Government cut the annual subsidy payments $468,000 a year and, because of sectional political pressure, adopted a Shylock attitude when the steamship company and its stockholders were groggy and needed money and credit badly if they were to survive and continue the service in the national interest.

Congressional action "broke" Collins and his associates financially. In 1858 the policy of paying mail subsidies was abandoned. The last Collins Line Atlantic steam packet crossing was made in February 1858, following which the line became admittedly insolvent, its ships were disposed of at forced sales to pay the claims of creditors, and the investors in the enterprise (who had never received any return in the form of a dividend) were wiped out in April, when Collins was fifty-six years of age. He lived until June 1878 and died at his home on Madison Avenue, New York City.

An authoritative British marine historian, writing of the steamships in the transatlantic trade in the fifties, says of the American Collins Line:

> The first fleet consisted of the wooden paddle steamers *Atlantic, Arctic, Baltic,* and *Pacific,* practically sister ships of 2,860 tons, with beam engines of 2,000 I.H.P. They were a great improvement on the existing material, and although they were so well built and extravagantly fitted that it was necessary to obtain an additional subsidy, they were the most noteworthy ships on the Atlantic in their day. In 1856 they were joined by the *Adriatic* of 5,888 tons gross, with engines of 4,000 I.H.P., designed for a speed of 13½ knots, which marks the high water mark of American paddle steamer construction on the Atlantic. When the subsidy on which the company relied was suddenly withdrawn after two disasters, the service collapsed and although Commodore Vanderbilt constructed somewhat similar ships to maintain the Stars and Stripes on the Atlantic, they were soon withdrawn, and for over thirty years American steamship development was practically confined to the rivers and coasts of the country and the Pacific trade.

The British err with respect to the size of Collins' largest and last liner, the *Adriatic,* for according to the American Lloyd's Registry of American and Foreign Shipping, this vessel was of 4,145 tons (length 345 ft., beam 50 ft., and depth 33 ft.); she had three decks and a deck saloon, a draft of 23 ft., and was brig-rigged. The vessel was built in 1856 by George Steers, New York, and had oscillating engines, with two cylinders of 100 in. diameter and a stroke of 144 in. Her owner in 1860 was stated as North Atlantic S.S. Co. and in 1865 as N.A.M.S.S. Co., Galway Line. The *Adriatic,* when completed, was "the world's largest and fastest ocean steamer." She cost the tremendous sum of $1,200,000 and went into service in 1857, with the subsidy being paid the line by the government reduced from $853,000 to $385,000 a year; she made only a single voyage in the American steam transatlantic packet service, whose days were numbered. In 1858, as Albion says, "the death blow came when Congress abandoned the policy of mail subsidies," and he adds:

> Acrimonious debates in which Jefferson Davis and other southerners took the lead revealed bitter jealousy of New York, which had cornered most of the subsidy lines. The *Baltic* made the final sailing from Liverpool on February 3, 1858. With that trip ended the spectacular attempt of New York and the American merchant marine to challenge the Cunarders. The line had never paid a cent in dividends; but for several years the American public had had keen pleasure in reading the speed statistics.

But far more than that. Since the first transatlantic passage of the Collins liner *Atlantic* in April-May 1850, the American public had had steamships to be proud of in the competitive packet trade on the North Atlantic, and these vessels had proven to be as superior to British and all foreign steamers as the American clipper ships were superior—as to both the vessels themselves and their operation—to the finest and fastest sailing ships built and operated by any other nation. Moreover, the period of the real clipper ship era, which was very brief (the early fifties), was identical with that of United States supremacy in the North Atlantic steam packet trade. Albion, in THE RISE OF NEW YORK PORT, says:

> The rise and fall of the Collins Line was almost simultaneous with the rise and fall of the clippers. They had much in common. Together they represented the high-water mark of the old American merchant marine. Speed was the prevailing passion of the American public at the moment. Clippers like the *Flying Cloud* and Collins liners like the *Pacific* gratified that passion almost simultaneously with fast records which no British vessels could approach. The contemporary triumph of the New York yacht *America* rounded out the national gratification for speed. Their quick passages have lived on in legend and enriched our marine tradition.

Albion adds, "The fact remains that most of the clippers and all the Collins liners did not pay." Whereas the clippers were an investment of private enterprise and showed tremendous profits during the first period of the California Gold Rush and associated boom, the Collins Line was in fact a national undertaking and should not have been subjected to the bookkeeping methods associated with the investments of ordinary private capital. If the United States desired to maintain its dominance in the North Atlantic, which it had won by its superb sailing packets, it should have met competition when the British Government stepped into the picture with subsidized steam to wrest the trade, power, and glory from Americans. Private capital cannot compete with a powerful government's financial resources. The United States Government in 1848-1852 wanted to rule the Atlantic in the realm of steam as it did with sail, but it proved to be unwilling "to pay the piper." When a political Congress grew economical and declined to foster and support steam packet lines (as Britain and all other marine powers were doing), the Collins Line, deprived of promised and necessary income in the form of subsidies, naturally could not meet expenses, not to mention show a profit, and the United States itself robbed patriotic Americans who were stockholders of the private company (and had received no dividend return at any time on their stock) of the principal of their investment.

At no time in the history of the United States did American shipbuilders and operators show their genius, resourcefulness, and energy more than in the late forties and the first half of the fifties; at no time did they need as great support, guidance, and encouragement from the Federal Government, and if they had received it, initiative along technical engineering lines would have been fostered and private capital encouraged to invest in marine steam navigation venture enterprises and in the development of iron hulls, efficient, economic, and durable engines and boilers, and screw propulsion. With the political conditions existing that led to the Civil War, the United States—united only in name—threw the maritime interests of the country to "the wolves" and established a policy in the latter part of the fifties that made American participation impossible in the revolutionary development of marine steam engineering and metal construction; thereby the United States relinquished all claims to maritime leadership, abdicated from the throne that the nation had recently gained (through wood sail and wood paddle steam) as mercantile Mistress of the Seas, and cleared the way for Britain to re-establish itself as the dominant and undisputed marine power of the world—both merchant and naval.

The congressional action and attitude of 1858 sounded the death knell of the American ocean-going steam mercantile marine. The Collins Line became insolvent and discontinued operations; creditors seized and sold its steamships. Some marine historical writers say that the *Atlantic* and *Baltic,* the surviving members of the original famous quartet of Collins liners, were converted into sailing ships, but the American Lloyd's Registry of American and Foreign Shipping lists these vessels as steamers surveyed in New York in May 1864, and their condition (including the original engines) was then good; the owner of record in the early sixties was the North Atlantic Steamship Company—apparently a British-owned company. The new Collins liner *Adriatic,* by far the largest, finest, fastest, and costliest steamship afloat, came into service when the operating company was insolvent but struggling to keep going. She made one voyage, but was laid up when no funds were forthcoming to keep her in the trade for which she was built. A little later, she was purchased by Britishers, and—to the everlasting disgrace of the United States Congress—this American-built steamship not only operated in the North Atlantic under the British flag but also, in 1861, made (and held for years) a transatlantic speed record with a passage of only 5 days 19 hours from Galway to St. John's on the Britain-Canada run. It has been well said, "This magnificent steamer, alienated from the country that had refused to protect her and receiving the subsidy and flying the flag of our persistent and victorious rival, was an eloquent object lesson of the causes that had wrought the ruin of the American merchant marine."

Cornelius Vanderbilt (1794-1877), of New York, who did much to harm Edward K. Collins and his line of splendid steam transatlantic packets, was a keen, politically minded businessman who would dabble in anything that would give him a profit or work for his personal benefit and aggrandizement. Vanderbilt, as a youth, carried produce and passengers in New York Harbor and was captain of a steam ferry in 1817-1829. He developed a carrying trade along the coast in small craft that became so numerous as to gain for him the popular, humorous designation of "commodore," which stuck, and in his prime and later years as a railroad man, he was known as Commodore Vanderbilt. In 1849 he obtained from the Nicaraguan Government a charter for a route across the Isthmus and was always more interested in transport on sea or land than in ships—sail or steam. Cornelius Vanderbilt, throughout his life, was actuated by personal motives very different from those of Collins, who fought and possibly "splurged" at times—but always for his country's flag and prestige.

Vanderbilt has been described by an historian not only as a "good businessman," which can be accepted as correct (on the basis of accumulated wealth and personal power as the criteria to determine success) but also as "the ablest steamship manager of his time"—a statement that is absolutely false. Vanderbilt was not a trained ship man experienced in the production, operation, and management of deep-sea ships; he was not a consecrated and able specialist, as was Collins, but a dabbler, with a superficial veneer of knowledge, who was interested in anything ashore or afloat, stationary or moving, that could be used to make money. Vanderbilt was not as "extravagant" as Collins, but he did not possess the grim, patriotic, and fervent spirit of Collins, who could not be satisfied short of "driving the arrogant government-financed Cunard liners off the seas." Vanderbilt's prime and only idea as to steamships was the unemotional one of building and operating them to make money and increase his personal and business power and his political influence. He was interested in fast passages, speed records, and "sweeping the seas" only if Congress paid the bills and guaranteed him a profit. This, Congress would not do, so after running his ships for a period to Bremen and Havre via Southampton, he laid them up and "quit the field," finding it impossible "to compete with the cheap and abundant capital of Europe fortified by heavy government subsidies."

Vanderbilt made several attempts to place a fleet of steamships in the transatlantic service. In 1855 he offered to establish a steam packet line between New York and Liverpool to run in alternate weeks with the Collins Line and, under political pressure (exerted to weaken the government arrangement then in effect with Collins, by which his steamers were receiving a subsidy of $33,000 per round voyage), agreed to accept for such service a subsidy of $15,000 a voyage to equal the Cunard Line and $19,250 to equal the Collins Line lengths of passage. The only result of these negotiations was to weaken the position of the Collins Line at a time when, following the loss of the *Arctic,* that company needed both financial and political help and public support. Vanderbilt had built two steamers, and although he failed to obtain a government subsidy contract, he ran them for some time to Bremen and Havre, withdrawing the vessels from service during winter months. When Collins built the impressive *Adriatic,* proclaimed as the "Queen of the Seas," Vanderbilt constructed the large and powerful *Vanderbilt,* which he considered a "fit companion or competitor" of the great Collins liner. With this vessel and the remainder of his fleet, including his large steam yacht *North Star,* which had been converted into a liner, Vanderbilt operated in the transatlantic steam packet trade intermittently for a few years, making arrangements with the Post Office Department for sea and inland postage on all mail carried. Morrison says that during the four years 1858-1861 the Vanderbilt line's mail receipts amounted to $360,730.48, or a little over $90,000 a year. Vanderbilt, while far from being the "ablest steamship manager of his time," had the faculty of making money in devious ways, and his methods were quite different from those of Collins, who was more of an idealist and a crusader. With fervor, Collins placed the cause beyond the reward, and because of this characteristic—without a government such as the British to encourage, assist, and support him—he was not a good man to head private enterprise in seeking to do a national job patriotically. Vanderbilt, on the other hand, was quite willing to be paid $56,000 a month by established lines running to the Isthmus of Panama, in the years following the Gold Rush to California, "to keep his ships out of the traffic"—and this at a time when the public was crying out for tonnage to be put in the run. A sum of $672,000 per year for withholding service in the Panama trade should have enabled Vanderbilt to operate a good transatlantic steam packet line, absorb its losses, and yet make a good profit.

The following table gives the size and prime particulars of the steamships used by Vanderbilt in the transatlantic service running between New York and English Channel ports:

Name of Steamer	Built	Tonnage	Dimensions in Feet: Length	Beam	Depth	Draft	Machinery: Type	Cylinders: Diameter	Stroke
NORTHERN LIGHT	1851 New York (Simonson)	1,767 (2,056 new)	262	38	30	16	Side-wheeler; vertical engines; 330 N.H.P.	2 of 60 in.	120 in.
Brig rig; 3 decks. Ran in Vanderbilt transatlantic service. In 1860 and 1865, registered owner A. & P. S.S. Co.									
NORTH STAR	1853 New York (Simonson)	1,867	270	38	29½	17	Side-wheeler; vertical engines; 330 N.H.P.	2 of 60 in.	120 in.
Brig rig; 2 decks; bottom doubled. Built as yacht for Cornelius Vanderbilt; converted to transatlantic steamer. In 1860, registered owner A. & P. S.S. Co.; in 1865, D. B. Allen.									
ARIEL	1854 New York (Simonson)	1,295 (1,736 new)	252	32½	16¼	14	Side-wheeler; vertical beam; 265 N.H.P.	1 of 75 in.	132 in.
Brig rig; 2 decks. Built for Vanderbilt transatlantic service.									
OCEAN QUEEN	1857 New York (Westervelt & Mackey)	2,802 (2,715 new)	327	42	22	16	Side-wheeler; vertical beam	1 of 99 in.	144 in.
Brig rig; 3 decks; 4 watertight bulkheads. Built for Vanderbilt transatlantic service.									
VANDERBILT	1856 New York (Simonson)	3,360	311	47	31¾	20	Side-wheeler; vertical beam; 800 N.H.P.	2 of 90 in.	144 in.
Brig rig; 3 decks. Very fast steamer; built for Vanderbilt transatlantic service to beat Collins liners.									

Cornelius Vanderbilt owned or controlled many steamers in addition to the above during the fifties and sixties. Before he became a director of the New York and Harlem Railway in 1857 and commenced to "cool off" on ocean steam navigation, he had registered in his name such steamships as the *Illinois* (2,123 tons), *Sierra Nevada* (1,246 tons), and *Prometheus* (1,207 tons), built in 1851; the *Star of the West* (1,172 tons), built in 1852; the *Granada* (1,130 tons), built in 1854; and the *Moses Taylor* (1,372 tons), built in 1857. He later acquired ownership of the iron steamer *Champion* (1,452 tons), built on the Delaware in 1859, and the following New York-built wood steamers, constructed in 1862-1864 were registered in his name about the time that he was made president of the railroad that became the nucleus of the present New York Central system: *Union* (2,250 tons), *Commodore* (2,054 tons), *New York* (2,117 tons), and *Costa Rica* (1,917 tons). Vanderbilt's interest in the Atlantic steam ferry terminated in the late fifties, and he lost interest in deep-sea steam navigation during the Civil War. With Vanderbilt's withdrawal from the transatlantic trade because of the refusal of the United States Congress to subsidize its deep-sea mail and passenger steamships in order that they could operate without loss and in competition with foreign subsidized vessels, the flag of the United States "absolutely vanished from the steam routes of the North Atlantic," and Britain took over what America—Britain's proven superior in steam as well as in sail navigation—had discarded because of a divided country. With competition eliminated, Britain raised freight and passenger rates, made money, grew strong, and dominated not only the North Atlantic but also the trade on the Seven Seas.

When the Civil War broke out, Vanderbilt, finding that he could not operate even his finest steam vessel on any trade route without a subsidy, had to consider this vessel (which under government protection or under the flag of any other marine power would have been considered a "most valuable property") nothing but an "expensive liability" that was eating into his resources by carrying charges when idle and by terrific losses—some $20,000 or more per voyage—if placed in operation, and this without regard to the risks of war. He, therefore, "patriotically gave the splendid steamer named after himself to the government." The *Vanderbilt* was, next to the Collins liners, America's best steam merchant vessel. She was a very fast ship and is credited with passages across the Atlantic of 9 days and 8 hours eastbound and 9 days 9 hours 24 minutes westbound. However, these crossings were not between Liverpool, Southampton, Portsmouth, or Havre and New York, pilot to pilot, but were timed between the Needles (Scilly Islands) and Sandy Hook, a very much shorter distance, and, therefore, not comparable with the 1852 record run of the Collins liner *Arctic* of 9 days 13 hours, at sea, Liverpool to New York, and with the passage of the *Pacific* made the same year of 9 days 17 hours 12 minutes, at sea, New York to Liverpool. The *Vanderbilt* was, however, much faster than any regular man-of-war, and although she naturally burned a lot of coal when at high speed, she had storage space for a vast amount of fuel and could steam at speed for long distances. The *Vanderbilt,* well-armed, was a formidable merchant cruiser and larger, more heavily gunned, stronger, and much faster than the British-built Confederate commerce raider *Alabama.* Sent across the seas to intercept and destroy the *Alabama,* she missed her prey by the barest chance. Captain Semmes, in command of the famous Confederate cruiser, was enabled with British assistance to elude the *Vanderbilt* and gain the eastern seas, so that vessel and her command (Captain Baldwin) narrowly missed the glory of destroying the world's most notorious commerce raider, an honor that was gained much later by Captain Winslow in the U.S.S. *Kearsarge.*

A memorial addressed to Congress by merchants of New York stressed "a great and inestimable service" rendered by the Collins Line of steam transatlantic packets, for in addition to the high quality of vessels operating regularly on a greatly improved and an unprecedented, fast schedule, they had been the means of "compelling an increase in size, accommodation, and speed of the British line." This memorial, signed by many distinguished merchants and marine authorities, goes on to say:

> Thus, in 1847, the average passages of the Cunard steamers to and from Boston were 15 days and 7 hours, which was in 1850 reduced to 13 days 23 hours, a gain of 1 day 8 hours. The same year, the average of New York passages of the Cunard Line was 10 days 16 hours. On this line, the British owners had put their fastest boats. Throughout the period of the competition of the Collins with the Cunard Line, all the honor was to the former. Its steamers beat their rivals nearly a day and a half on the average voyages. In nothing was American pride more interested and gratified than in this signal triumph of national industry and enterprise.

The average length of passage of the Cunard steamers in the New York run at mid-century is incorrectly stated, for in the early fifties the average crossing of a Cunarder westbound was officially reported as 12 days 9 hours and eastbound as 11 days 12 hours, with the Collins liners beating them westbound from 13 to 51 hours and eastbound from 13 to 42 hours. It was also said at the time: "A Collins liner will beat a Cunarder by a day or so on a westbound passage made under very favorable conditions, but the American steamers are so superior to the British in heavy weather that they make from two to two and a half days' better time running from Liverpool to New York against westerly gales and high seas."

Henry Hall, special agent and historian for the United States Government, in his report on the shipbuilding industry of the United States, writes:

The steam vessels of the United States were confessedly superior for transatlantic service to those of European build as much as the American sailing clippers were to their foreign rivals. Owing, however, to the artificial manner in which the steam shipping of Europe was brought into existence and maintained, and the want of Government compensation, American owners of ocean steam tonnage were forced to withdraw from the traffic to Europe, and our builders were compelled to rely entirely on coasting trade for business.

Miller makes the statement that the Collins Line steam packets "had the confidence of the public and were liberally patronized; that their competition for freights with the Cunarders brought the rates to Liverpool down, resulting in a great public benefit, because the United States was importing enormous quantities of European manufactures and paying the cost of freighting to this country." He also adds that "the voyage to Europe was shortened by these ships and travel was promoted, and in eight years from the time they began, the passenger traffic had increased fivefold."

During testimony before a special committee of Congress, A. A. Low, one of the greatest of New York merchants and shipowners of his time, made this authoritative statement in regard to the cause that ruined the American merchant marine and the remedy that would have saved it:

My own belief is that the policy of England in subsidizing lines of steamers to the various ports of the world has given her a prestige which is almost insuperable. . . . My own impression is that large subsidies should be given as an inducement and that these subsidies, while they would cost this Government something in the beginning, would cost the Government nothing in the end.

I only know the English have always, in peace and war, manifested a determination to hold the supremacy on the ocean, and the supremacy which they acquired by years in war they have in peace acquired by subsidies. They have deliberately and intentionally driven the Americans from the ocean by paying subsidies which they knew our Congress would not pay. I believe it has been the deliberate purpose on the part of England to maintain her supremacy upon the ocean by paying larger subsidies than any other nation, as long as subsidies were necessary to preserve their control.

I believe that when the Collins Line was running, the subsidy to the Cunard Line was renewed for the express purpose to enable it to run off the Collins Line. It was renewed several years before the expiration of the subsidy granted, so that the Cunard Line might enter upon contracts for new ships, and a committee of the English Parliament similar to this committee was employed to make the most minute investigation into the matter. It was after the most careful inquiry by that committee that the contract with the Cunard was renewed for the express purpose of enabling that line to run the American steamers from the ocean; and they have driven us from the ocean by that policy just as effectually as they ever did drive an enemy from the ocean by their guns.

When a politically minded and shortsighted Congress of a disunited United States of America repudiated the policy of paying subsidies to foster and support deep-sea mail and passenger steamships, the one-time friends and champions of the Collins Line deserted like rats scurrying from a fated sinking ship. It became the practice to criticize what they had once advocated and condemn what they had once praised. Government officials and navy officers found it safer and easier to throw stones at Collins rather than defend him. Following the veto of the bill by President Pierce in 1855 that provided for the continuation of the subsidy granted in 1852, the Collins Line was doomed, and the cancellation by the government of all mail contracts and subsidies in 1858 was merely the last act of a developing policy of repudiation and extermination. It had become the fashion to condemn the steamers of the Collins Line as antiquated when built merely because they were wood side-wheelers; whereas at the time they were designed and constructed they represented the last word in naval architecture and marine steam engineering, and the original four Collins steamships were the most modern as well as the finest vessels driven by steam power in the world. At mid-century and throughout the fifties, the British as well as the United States and other governments were critical of the use of iron in warship construction and demanded heavy wood hulls for their fighting ships, claiming that thick oak planking was more resistant to shot than thin iron plates and could be more easily repaired at sea. Such governments also favored side paddle wheels over screws for the propulsion of their warships, and as the Cunard Line for the British and the Collins Line for the United States had to build their steamers to conform to government specifications in order to obtain the necessary subsidy to operate them, all these vessels, as to both material used and type of propulsion, merely conformed with the dictates of the British Admiralty on the one hand and the Navy Department of the United States Government on the other. Large wooden hulls could be built only in America, so British shipowners agitated for their government's approval of iron vessels from the mid-forties, but it was not until 1855 that the first iron Cunarder, the *Persia,* was built. The approval of the admiralty of the use of iron in her construction was due to the fact that the Cunard Line needed "a big steamer of not less than 3,300 tons and about 370 feet long to compete with the large powerful steamships building in the United States for the North Atlantic trade and such a vessel cannot possibly be built of wood in any shipyard of the British Isles." The American steamers building, which the new Cunarder *Persia* was needed to compete with, were the *Adriatic* of the Collins Line (4,144 tons) and Cornelius Vanderbilt's 3,360-ton fast steamer named after himself, the *Vanderbilt.* All these steamers, British and American, were side-wheelers. A British historian wrote that the *Persia* "was contracted for in 1855 to compete with the *Adriatic,* then building for the United States Collins Line"; also, "because of her size, which was of 3,870 tons with a length of 380 feet, she had to be built of iron, which was an innovation for a Cunarder, but the metal construction proved most satisfactory in service." It is apparent that the British Government officials in 1855 preferred that the *Persia* be built with a wood hull, but as such a hull could not be built in Britain, they sanctioned the use of iron, but insisted on paddle wheels and did not change their minds as to propulsion for subsidized Cunarders until after the 3,871-ton side-wheeler *Scotia* was built by Napier & Sons in 1862.

As the paddle-wheeler *Persia* was ordered by the Cunard Line in 1855 and orders were given the builders to copy many features of the original Collins liners, including their machinery (designed and built in 1848-1849), and seek to equal the improvements that would undoubtedly be made in the newer, bigger, and more heavily powered *Adriatic,* it is ridiculous for a generally acknowledged American authority to say that the Collins liner *Adriatic* was obsolete when built. That she was heavy and costly is unquestioned, for a vessel of her size should have had an iron hull (which only a British shipyard at that time could have built and later repaired), but both the British Admiralty and the U. S. Navy Department preferred the wood *Adriatic* to the iron *Persia* as an auxiliary naval vessel, and the U. S. Government's preference for wood warships undoubtedly retarded the development of iron shipbuilding in the United States.

In Britain conditions were different, for whereas the admiralty throughout the forties and most of the fifties preferred wood construction for warships, the government had to encourage iron shipbuilding as well as marine engine and boiler building for merchant ships— and this for fundamental economic reasons. In 1850 the Peninsular and Oriental Company petitioned the British Admiralty to accept iron in lieu of specified wood hulls and argued that in vessels of more than 2,500 gross tons fitted with engines of 800 I.H.P., iron construction (readily available in Britain) was much stronger, lighter, more durable, and cheaper and that the use of timber unnecessarily increased the cost of service. In 1853 a British investigating committee argued that although inexpensive naval requirements should be specified in the construction of subsidized mail steamers, yet no major deviations should be made from the most economic and commercially desirable type of ship, for such vessels should not be materially weakened in trade competition with the foreigner. After experience with the *Persia,* the admiralty required in 1858 the Royal Mail company (its pet Central and South Atlantic subsidized line of naval auxiliary steamers) to build three iron vessels of increased speed in order to secure a renewal of an existing contract. The British Government acted in the interest of the nation at large in both a military and an economic and commercial sense. Its policy was consistent, paternal, protecting, and just. The conditions in the United States were diametrically opposite to those that prevailed in Britain during the forties and fifties, and in the early sixties, the Civil War, which threatened increasingly during the fifties, devastated the country after the various Congresses of politicians had ruined the American merchant marine, killed ocean steamship development, and operated to drive American vessels—northern built and owned—from the seas immediately following the time, in the early fifties, that the United States had proved its supremacy in the realms of both sail (with its clippers and sailing packets) and steam (with its unequaled speedy, comfortable, and popular Collins transatlantic liners).

The United States so-called "subsidy experiment," which ended in 1859, was a national disgrace. There was no head to it; no supervising, planning, and co-operative authority and no maintained developing policy backed by government. Private capital in the North Atlantic steam packet line venture was treated atrociously, and government officials and naval officers who encouraged Collins in his ambitious and expensive undertaking were irresponsible and morally weak. The total gross cost of the subsidies to the United States was about $13,900,000, but against this should be considered offsetting postal revenues, which, in the ultimate, probably equaled one-half of the cost. Of this total gross of $13,900,000, the Collins Line received about $4,500,000, the Bremen Line $2,000,000, the Havre Line $750,000, and East Coast and West Coast "California Lines" (New York to the Isthmus and thence on the Pacific to San Francisco) obtained about $6,650,000; about 52 per cent of the total was, therefore, paid to the transatlantic lines and 48 per cent to the two lines contributing to the New York (and Atlantic ports)-Pacific services.

The Story Behind the Organization of the Royal Mail Line and British Contempt for the Monroe Doctrine

The real story behind the organization of the Royal Mail steam packet company is of importance as it affects the United States. This company was ostensibly formed by the British "to carry the mail to the West Indies, including St. Thomas, Haiti, Barbadoes, Jamaica, and Cuba, and to Chagres at the Isthmus of Panama, to Nicaragua, Honduras, Mexico and to the south part of the United States, with a branch line maintained from the West Indies to Brazil." The contract made in 1841 called for fourteen steamships to be built so as to carry "guns of the largest caliber" then in use in the British Navy, the "frames and planking to be of a thickness to resist shot as well as a frigate." The commanders of the vessels were required to be naval officers, and the annual subsidy paid by the British for this "mail service" was $1,200,000 a year, which was increased to $1,350,000 a year when the Brazilian service was inaugurated. This line was required by the British Government to run regularly to ports—such as those in Central America—where it did no business and for which it carried no mail. Operating primarily a political and military service rather than a mercantile line, the company showed a deficit from operations even with its liberal subsidy, but this fact evidently gave neither the private company nor the government whose instrument it was any economic anxiety, and financial adjustments were made "to the satisfaction of all concerned." Unpleasantness had developed between the people of Maine and of New Brunswick over the question of boundary. An "incident" had occurred at Niagara causing loss of life and the burning and destruction of the American steamer *Caroline,* and the British, while desirous of grabbing all the land they could in the North, both east and west, were "looking ahead to an increase in territory along the Spanish Main, including a canal across Nicaragua in contempt of the Monroe Doctrine."

In the meantime, the United States, following the Louisiana Purchase and acquisition of Gulf of Mexico territory, had annexed Florida. Texas had set up an independent government, with its people openly anxious for annexation to the United States; a war with Mexico was in the air; and Britain, ever looking to restrict the growth and power of the United States and extend its own influence, domain, and wealth, was becoming more and more belligerent. In Central America, Britain grabbed the old logwood-cutting settlement at Belize, made it in 1845 (the year that Texas became part of the United States) the nucleus of the colony of British Honduras, and then attempted to extend the colony boundaries as far south as the Rio San Juan in Nicaragua—all in violation of the Monroe Doctrine. As early as August 1841, Britain had acted by force of arms to get domain over this part of Nicaragua which it coveted, but Britain's Mosquito Indian settlers had been driven away by the Nicaraguans. With a project for building an interoceanic canal in the air, the British returned, again obtained possession of San Juan del Norte in January 1848, and made claims and demands looking to obtaining control of the Gulf of Fonesa on the Pacific end of a possible canal route. With the finding of gold in California, the United States felt it necessary to act to check British aggression in Nicaragua, as America could not tolerate the idea of a water highway between the Atlantic and Pacific oceans, such as was then in contemplation, being controlled by England with its marine power. A treaty was negotiated (September 28, 1849), by which a part of Tigre Island and a part of the coast of the Gulf of Fonesa were granted to the United States for a naval station. Britain was blocked, outwitted, and incensed, and war was imminent. In 1845 a dispute arose over the northwestern border of the United States and Canada (the Oregon question), and the country rang with the cry of "Fifty-four forty or fight," referring to the United States claim that its territory extended north to Latitude 54° 40′.

Historians tell us that it is a fact beyond dispute that Britain fully expected another war with the United States and had been preparing for it since 1840—about the time that the British inaugurated their subsidized steamship line across the Western Ocean. That relations between the United States and Britain were strained almost to the breaking point in the late forties and that Britain's plans of preparedness had for years considered the military power of steam merchant vessels are proven by the report of January 3, 1846, sent by Louis McLean, the American minister in London, to the secretary of state. Referring to an interview with Lord Aberdeen in order, following instructions, "to bring to his notice the warlike preparedness making by Great Britain" that could only look to a rupture with the United States, McLean reported that Lord Aberdeen "promptly and frankly" said that the British were obliged to look to the possibility of a rupture with the United States and that, in such a crisis, the warlike preparations now making would be useful and important. Aberdeen further stated that "the most extensive and formidable parts of their preparations were the fortifications of the principal and exposed stations . . . and the increase of the number of steam vessels in lieu of the old craft."

The early Cunarders running from Liverpool to Halifax, Nova Scotia, and continuing on to Boston, Mass. (which entered the service in 1840), were—as the Royal Mail Line steamers—built to British Navy specifications and to carry heavy guns. All of these vessels had naval officers aboard, and it was stipulated in the contract that upon demand the subsidized merchant ships, which were naval auxiliaries, were to be sold to the admiralty at a stipulated valuation. The British subsidizing of steamships originated primarily as a military and political or diplomatic measure and gained in power and scope as it became apparent that subsidized British steamships could successfully compete with American steam vessels and that subsidies were not politically popular in the United States (and the payment by the British of liberal subsidies to their steamships would not be met for long by similar payments being made to American steamships by the United States Congress), with the result that the British—after being whipped in all ocean competitive trades by the Americans with merchant sail—had a fine chance at last to drive their Yankee rivals from the ocean as steam displaced sail.

It is significant that, for years after iron had become an economic shipbuilding material in Britain, the nation's subsidized lines clung to wood construction. This was due to the fact that the British Admiralty firmly believed that a wooden hull was superior to an iron hull for naval uses. This prejudice of the British Admiralty in favor of wood was probably also responsible for the Cunard Line's continuing to use paddle wheels on its transatlantic packets for many long years after the screw propeller had proven its superiority. The British Admiralty had officially turned down the Ericsson, Smith, and other suggested forms of screw propeller in the late thirties and early forties and had declared: "The screw is not a satisfactory means of marine propulsion, and in addition to other glowing faults, it interferes with the reliable steering and handling of a vessel in crowded or restricted waters."

When the United States Congress, in March 1847, voted subsidies to the Law and the Aspinwall interests to establish steam packet lines on the Atlantic from New York to the Isthmus of Panama and on the Pacific from Panama to Oregon, the stated objective, i.e., the peopling of the West Coast, was evidently far from being the only reason. Gold had not, at that time, been discovered in California, and there was no urge or incentive for emigration to the Pacific Coast, but the United States did feel the need of checkmating the designs and advances of British diplomacy in Central America. It was said that the law would "provide ships built for mercantile pursuits but also [built] with full regard to their fitness as ships of war." Some enthusiasts imagined that the two subsidized lines on the Atlantic and Pacific would cut into the business of the British-owned Pacific Steam Navigation Company as well as that of the Royal Mail Line.

British Dominance of the South American Trade

As were many others of the British steam navigation lines, the Pacific Steam Navigation Company, which became one of the most powerful steamship companies in the world, was the brain child of an American. William Wheelwright, of Newburyport, Mass., described as a "shrewd, energetic, far-seeing Yankee," while acting as the American consul at Guayaquil, Ecuador, saw great commercial possibilities in a line of steam vessels operating on the west coast of South America. He visited the United States and endeavored to interest capital to embark on the proposed venture, which, however, in the opinion of all competent to pass on the matter, could not be made profitable "without a subsidy like that which the British Government is paying Samuel Cunard and the Royal Mail Line." Wheelwright and his American friends and backers visited Washington, but were rebuffed by the administration and told that Congress would grant no such subsidy. Wheelwright, although "turned down cold" by his own government, was still determined to see a fleet of steam packets in service on the west coast of South America, so he went to England and laid his plans before British merchants. He met with a cordial reception from both private capitalists and the government. A British company was formed; it secured a liberal subsidy and, with Wheelwright as directing head, built a fleet of steamers in England "after the designs and model made in America." Marvin has written:

> If the authorities at Washington had been as willing to listen to Mr. Wheelwright as were the authorities at London, that great line of steamers would have been built in this country, officered and manned by our own seamen, and controlled by our own merchants. In that case, American and not British influence would today (1902) be dominant along the west coast of South America, in whose development the Pacific Steam Navigation Company has been for sixty years a most important factor.

American Steamship Lines from New York to California and the West Coast via the Isthmus of Panama

The mail steamship service bill enacted by Congress on March 3, 1847, authorized the secretary of the navy to make contracts for such service, in addition to the north transatlantic (Collins) line, for another growingly important trade route (New York to California and Oregon by way of the Isthmus of Panama), with sailings once in two months or oftener, from New York to Chagres or Cristobal on the Atlantic side of the Isthmus and from Panama to Astoria on the Pacific side, with stops at San Diego, San Francisco, and Monterey. The stated object was "to aid in populating the Pacific Coast and reduce the length of journey" from about 175 days by sailing around Cape Horn to an estimated 30 days by steam vessel via the Isthmus of Panama.

On April 20, 1847, the Navy Department awarded a contract for the Atlantic portion of the service to A. G. Sloo of the established Sloo Line, who on September 3 assigned it to the principal capitalists interested in the new venture (George Law, Marshall Roberts, and Bowes McIlvaine, of New York), and they organized the United States Mail Steamship Company. The contract with the government required that the steamship company was to build five steamships, each of 1,500 tons and of 1,000 I.H.P., which were to copy in dimensions and scantlings the U.S.S. *Missouri* of the navy. The paddle-wheel machinery was to be direct acting and placed well below the water line as a protection against enemy shot. The U.S. Government, therefore, insisted upon the uneconomical policy of duplicating war vessels in all prime essentials in the design and construction of merchant vessels, and this attitude is indicative of the handicaps that E. K. Collins encountered when building his transatlantic liners to conform with the desires and demands of the Navy Department. The vessels of the United States Mail Steamship Company were to be employed in coastwise service between New York and New Orleans, with calls at Charleston, Savannah, and Havana en route and sailings twice each month. From Havana one of the steamers was to carry the New York (and East Coast ports) and the New Orleans mail to Chagres at the Isthmus of Panama. The subsidy to be paid for this service was stated at $290,000 per year.

The firm of Howland & Aspinwall (or William H. Aspinwall and associates), of New York, was given the contract on November 16, 1847, for the Pacific service, and the Pacific Mail Steamship Company (or "Aspinwall" line) was formed. (Howland and Aspinwall were well known sailing ship owners and operators, having been the owners of the *Rainbow* of 752 tons, the reputed pioneer extreme clipper built in 1845, and the sensational clipper *Sea Witch* of 908 tons, launched about two years later, which was "the fastest ship of her inches and of her time"; both vessels operated in the Pacific.) The Pacific Mail line agreed to build three steamships, two of not less than 1,000 tons each and a third of about 600 gross tons, all of which, like the vessels of the United States Mail line operating on the Atlantic side, were to be built as first-class war vessels under the specifications and supervision of the Navy Department. The contract called for a monthly service from Panama on the Pacific side of the Isthmus to Astoria, Ore., and the subsidy originally stipulated for this service was $199,000 per year for ten years. It is surprising that the United States Government, breaking away from tradition and the experience of the British, made contracts for its Atlantic Coast to Pacific Coast mail and steamship service with two separate companies. Moreover, the two services at the Isthmus were not efficiently connected, and in the early days a tremendous amount of chaos due to bad planning by the government was in effect. Caravans were first used to cross the Isthmus, but "this inefficient and dangerous mode of transportation was supplanted in 1855 by the Panama Railroad, which was incorporated on April 7, 1849, and was controlled by the Aspinwall interests." This railroad, which should have been financed by the U.S. Government, was in fact built with capital supplied chiefly by interests of the United States and the Pacific Mail lines and by the British Government through the Royal Mail Line. It has been said of these two American steamship lines (the United States Mail in the Atlantic and the Pacific Mail on the West Coast), which enjoyed government subsidies for a decade: "These two services together did not draw as much support from the United States treasury as the Cunard Line drew from the treasury of Great Britain. Both concerns were 'protected industries,' but the British protection was very much earlier (eight years), more generous, and more persistent."

The United States Mail Line, with government cognizance and Navy Department approval, from the first ignored the specified size of the steamers (as did Collins in his transatlantic line). Instead of building five ships that would aggregate 7,500 tons, the line built two that totaled 5,160 tons and purchased the *Falcon* of 891 tons, built by W. H. Brown, New York, in 1846. (This was advertised as a new steamship of 1,000 tons.) The George Law interests in New York increased the size of the first two steamers that they built over what was specified in their contract by 72 per cent; Edward K. Collins built his first four steamships 39 per cent (by government measurement) over the stipulated size and, it was said, "fully 50 per cent or more if the vessels had been properly measured and their entire volume to the weather deck computed in strict harmony with the regulations in effect." Collins, however, built 11,131 tons (or some 12,500 tons if properly measured) in lieu of the 8,000 tons that his contract obligated him to construct at once. Law built only 69 per cent of the agreed-upon new tonnage and only 40 per cent of the units and bought a small and unsatisfactory steamer (used in later years as a towboat) to inaugurate the needed mail and passenger service. The pioneer vessels of the United States Mail Line, the *Ohio* of 2,432 tons (built by Bishop & Simonson, New York, in 1848) and the *Georgia* of 2,727 tons (built by Smith & Dimon, New York, in 1849), departed in every respect from the dimensions and engineering equipment specified, but we are told authoritatively that the vessels proved to be "excellent commercial paddle steamships." These George Law (or United States Mail) steamers, according to contract, should have been in service by October 1, 1848; however, the first of them, the *Ohio,* did not sail from New York for New Orleans until September 20, 1849. Much has been said of the leniency of the government with Collins, but in the case of the steamers that ran to the south, a special favoritism was in evidence from the start. The attorney general so construed the law that the company was paid its full subsidy per annum from the date of the contract instead of a pro rata one, and in addition money was advanced the United States Mail line from time to time to complete the steamships building. If it had not been for the discovery of gold in California, the Gold Rush of 1849-1851, and a trade boom that continued for three years, with a steady and greatly increased volume of passenger and freight traffic each year during the ten-year life of the contract tremendously in excess of the original estimate, both the Atlantic and Pacific branches of the New York-San Francisco steamship service via the Isthmus of Panama would inevitably have shown heavy losses far beyond what the stipulated subsidy would have counterbalanced, and all the operations of these vessels on both the Atlantic and Pacific United States coast lines were protected from foreign competition.

The *Illinois* of 2,123 tons, built by Smith & Dimon, New York, was added to the United States Mail Line in September 1851 (this vessel is registered in American Lloyd's in 1860 as owned by C. Vanderbilt), and a number of other vessels were put in the service subsequently as trade warranted and the voyages became predominantly from New York to Chagres via Havana. (The original steamers *Ohio* and *Georgia* were very obviously too large to do coastal packet work between New York and Charleston and Savannah.) By 1852, it is said, the line had nine steamers operating in the service, although J. E. Saugstad, in a report on SHIPPING AND SHIPBUILDING SUBSIDIES, says that only two of the vessels met contract requirements. At this time, the line was making money, for the statement of earnings for the six-month period April-September inclusive (1852) shows as follows:

Revenue		Expenses	
Fleet commercial operations	$836,879	Cost of operation including insurance	$746,326
Mail government subsidy	145,000	Operating profit	235,553
Total	$981,879	Total	$981,879

Depreciation at the rate of 10 per cent per annum on a total cost of the fleet of $2,806,000 is $140,300 for six months, and this deducted from operating profit reduces net earnings to $95,253 for the half year (or at the rate of $190,506 for the year), or 6.8 per cent on the original cost of the fleet of vessels—but not on the capital invested (a strange method of computing and reporting earnings).

The Pacific Mail Steamship Company was the only one of the contractors with the United States Government to take its obligation very seriously and have resources to build the required ships and put them in service practically on time. Instead of constructing two steamers of 1,000 tons each and one of 600 tons, the Aspinwall interests built three vessels ranging from 1,057 to 1,099 tons in two shipyards at once, and although the contract was not placed with them until November 16, 1847 (about seven months after a contract for the Atlantic service was placed), yet their new steamers *California, Panama,* and *Oregon* passed the naval inspection on October 5, November 28, and December 9, 1848, respectively, and shortly thereafter sailed for the Pacific, the first vessel put in the service leaving New York for the West Coast on October 6, 1848, the day following the approved naval inspection and only 10 months and 20 days after the government contract for the service had been signed.

The following steamships were the original (pioneer, or earliest) vessels built for the new East Coast (Atlantic) and West Coast (Pacific) Isthmus of Panama lines to establish mail, passenger, and freight service between New York and Atlantic ports and California, Oregon, and Pacific American West Coast ports:

	United States Mail S.S. Co.			Pacific Mail S.S. Co.		
Name of steamer	OHIO	GEORGIA	ILLINOIS	CALIFORNIA	PANAMA	OREGON
Year built	1848	1849	1851	1848	1848	1848
Builder	Bishop & Simonson, New York	Smith & Dimon, New York	Smith & Dimon, New York	W. H. Webb, New York	W. H. Webb, New York	Smith & Dimon, New York
Tonnage	2,432	2,745	2,123	1,057	1,087	1,099
Length—feet	248	249	267	203	200	203
Beam—feet and inches	46	49	40	33-10	34	34
Depth of hold—feet and inches	31-9	23	29-6	20	20	20
Draft—feet	16	17	15	14	13	14
Type of engines	Side-lever; paddle wheels; 690 N.H.P.	Side-lever; paddle wheels; 700 N.H.P.	Oscillating; paddle wheels; 640 N.H.P.	Side-lever; paddle wheels; 250 N.H.P.	Side-lever; paddle wheels; 250 N.H.P.	Side-lever; paddle wheels; 250 N.H.P.
Diameter of cylinder—inches	2 of 90	2 of 90	2 of 85	1 of 70	1 of 70	1 of 70
Stroke—inches	96	108	108	96	96	96
Number of decks	3	2	3	2	2	2
Description	4-masted	4-masted; square-rigged on fore	2-masted; iron diagonal bracing	Bark-rigged	Bark-rigged	Brig-rigged

The pioneer vessel of the East Coast, or Atlantic, leg of the mail and passenger steam packet service to California and Oregon was the *Falcon,* which sailed from New York to

Chagres and the Isthmus of Panama in September 1848—some seventeen months after the contract had been signed for the service and a year before the first of the new ships was ready to sail. The "make-shift" or "pinch-hitting" two-and-a-half-year-old *Falcon,* as before stated, was purchased by the United States Mail Steamship Company in an emergency, and until gold was discovered in California in 1848 "there was considerable doubt as to the ability of the contractors to carry out their assignments with the established rate of pay." The *Falcon* (891 tons) was 212 ft. long, 30 ft. beam, 14 ft. deep, 11 ft. draft; she was a bark-rigged one-decker with inclined engines, having two cylinders of 60 in. diameter and 60 in. stroke. The S.S. *California* of the Pacific Mail, built by William H. Webb, was the first of the steamers to round the South American continent, and she sailed from New York for San Francisco on October 6, 1848. When the vessel arrived at Panama (January 17, 1849), the Gold Rush to California was starting, and she and her two sisters, following (by the sheerest luck), commenced their service on the Pacific during a period of unprecedented boom. The *California* reached San Francisco, the principal terminal of the Pacific Mail line, on February 28, 1849, with the first mail to be carried by steamship to California and the West Coast from New York and Atlantic ports.

In 1851 the service was extended to Astoria, new vessels were acquired, and the line applied to Congress for an additional subsidy, which was authorized in the naval appropriation act of March 3, 1851. In return for a subsidy of $348,250 per year, the contractor agreed to provide a semi-monthly instead of a monthly service on the West Coast, thus matching that on the Atlantic side and employing six steamers instead of the originally specified three. On this basis, the Pacific Mail line operated regularly and profitably, and the United States secured a very dependable, efficient, and eminently satisfactory semi-monthly high-speed service for mails, passengers, military forces, and supplies to its new possessions on the West Coast. These Pacific steamships, with their regular and frequent passages, could not be considered expensive inasmuch as up to 1852 postal revenues alone equaled 58 per cent of the subsidies paid. The time of transit from East to West Coast via Cape Horn was reduced by merchant sail, with the introduction of fast sailing vessels and clippers in the trade, from 150-200 days to 90-140 days (record 89 days), but steamers and the Isthmus of Panama route reduced the time of the journey to some 40 days or less. Sailing ships could not compete with steamers on the "Isthmus route" because of the great calms in the Bay of Panama and very unfavorable sailing conditions that prevailed off the west coast of Central America, and passengers practically deserted the sailing ships, which followed the only all-the-way water route from an East Coast port to San Francisco via Cape Horn, for "the shorter and safer steamship service." While crude and rather uncertain at first at the overland switch at the Isthmus, it improved tremendously when the Panama railroad commenced to operate in 1855. Connections were made at Panama with the services of the British Royal Mail and the United States Pacific companies, thus providing an interlocking system.

Without government subsidies, the United States Mail (East Coast) and Pacific Mail (West Coast) steamships would not have been built, and development of California, Oregon, and Washington would have been retarded. Hutchins says:

> The ships built, which cost a total of $5,124,777 [stated in Saugstad report], were of a type which would have been useful in war for cruising against enemy merchant ships or for transport service. Whatever may have been the weaknesses of the policy, it is evident that in the absence of substantial aid regular service by such large vessels could not have been established. It is also evident that these lines, which were free from serious foreign competition and enjoyed a notable monopolistic position among domestic owners, were able to secure such economies and patronage that on the abandonment of the subsidy in 1859 they were able to continue operations. For these reasons the subsidies to the Pacific lines may be said to have been the most successful of those given at this time.

The conditions, however, were entirely different in regard to the Atlantic and Pacific subsidies, and the U.S. Government was equally incompetent in regard to both. The country was fortunate in that Aspinwall took the contract for the Pacific Mail service, for he proved to be an excellent and responsible executive in steam as he was in sail. However, he and his associates in Pacific Mail were just as amazingly lucky as Collins in the Atlantic was "unprecedently unlucky." Aspinwall's proposition was to carry an unbelievedly big and profitable volume of business over a protected route, where the government, outside of paying a moderate subsidy for service, was neither harmful nor helpful. The Pacific Mail, greatly to its surprise, had a rich bonanza virtually thrust upon it by a kindly fate. With Collins, conditions were entirely different. He was in a highly competitive business, which constantly became more involved, difficult, and less profitable, and he had to fight the owners of American sail—who considered him a renegade—and the British Government's subsidized Cunard Line. Collins had no California Gold Rush over a protected route to help him out, and after one-half of his spendid marine tonnage disappeared through appalling "acts of God," then his country deserted him, and he (as well as his line) was doomed as was American glory and prestige in the North Atlantic and later on the Seven Seas.

We are told that for many long years after the start of the Gold Rush and the pioneer voyage of the S.S. *California* of the new Pacific Mail steamship line from Panama to San Francisco in February 1849, all sailings north were made at capacity (both passengers and freight) and that the steamer *California,* after her maiden run in this Pacific coastal service, made her passage in three weeks' time (20 to 22 days) each way, which suggests that Hutchins' stated time of transit of "between 21 and 30 days" from New York to San Francisco is incorrect. Records indicate that "in the course of ten years, twenty-nine steamers of 38,000 tons total register were built at a cost of $8,300,000 for the Law and the Howland & Aspinwall lines alone." It is estimated that, "in the first ten years, these steamers carried 175,000 persons to California and brought back $200,000,000 in gold."

It is said that the three vessels built by the Pacific Mail line, following the original trio, were "the *Columbia* 718 tons, the *Tennessee* 1,295 tons, and the *Golden Gate* 2,067 tons." These vessels were accepted by the navy prior to the end of July 1851, thus bringing the number of ships in service up to the six as specified in the contract. The *Columbia* of 777 tons (195 ft. long, 29 ft. beam, and 13 ft. deep), a side-wheeler with engines of two cylinders (75 in. diameter and 60 in. stroke) was built by Westervelt & Mackey for the line in 1850, the same year that the bigger *Golden Gate* of 2,067 tons was constructed by W. H. Webb, New York. This vessel was 265 ft. long, 40 ft. beam, and 30 ft. deep and was fitted with oscillating engines with two cylinders, each 85 in. diameter by 108 in. stroke. The *Tennessee,* according to the private records of W. H. Webb, was built in 1848 for the N. Y. & Carthagena S.S. Co. and was a side-wheeler 210 ft. long, 34.4 ft. beam, and 22 ft. deep. The American Lloyd's Register of American and Foreign Shipping (1860) lists the *Tennessee* as a paddle steamer of 1,275 tons, 210 ft. by 33 ft. by 19 ft., with a vertical engine 72 in. by 9 ft. stroke, built in 1853 by J. A. Robb, of Baltimore, for the N. Y. & Carthagena S.S. Co.

The Pacific Mail S.S. *California,* on her pioneer voyage from New York to San Francisco, reached Panama when 102¾ days out after 56 days 16½ hours of steaming via Rio de Janeiro, the Strait of Magellan, Valparaiso, Callao, and Paita; after stops at Acapulco, San Blas, Mazatlan, San Diego, and Monterey, she reached San Francisco 144¾ days out from New York after 75 days 21½ hours of steaming. The *Yankee Blade* of about 2,000 tons, built in New York in 1853 to run between Panama and San Francisco, is credited with a run from New York to Panama via the Strait of Magellan in 47 days of steaming, the fastest on record to that time, but this vessel was unfortunately wrecked in the Pacific on October 1, 1854, soon after making this fast passage.

Another interesting American wood side-wheel Pacific Mail steamer that crossed the Atlantic early and attracted much attention in England and Australia was the *Golden Age* of 2,281 tons, built by W. H. Brown, New York, in 1853. She was bark-rigged (270 ft. long, 41 ft. beam, 25 ft. deep, and 17 ft. stated draft), with three decks, and her machinery was described as "vertical 540 N.H.P., cylinder 83 inches diameter with 12 ft. stroke of piston." The *Golden Age,* according to the British contemporary press, had "accommodations for one thousand passengers" and was "magnificently fitted up." She crossed the Atlantic in 1853 and then went from England to Australia, making the quickest passage on record. From Sydney, she ran to the Isthmus of Panama in 39 days and for many long years rendered good service for the Pacific Mail Steamship Company. Thus an early side-wheel American wood steamer successfully circumnavigated the globe on her maiden voyage from New York to San Francisco via Panama.

It is now well known that neither the Atlantic nor the Pacific legs of this New York to California and Oregon steam packet service (even with the Panama railroad, which was completed on January 27, 1855, and established an economic connecting link between the two lines) could possibly have made any money under the original supporting subsidy contracts had it not been for the discovery of gold in California and the consequent rush to the gold fields, with an associated demand for goods and an intensified and artificial freight as well as passenger traffic. Because of these amazing and unnatural conditions, however, both lines were profitable, even though coal cost the Pacific Mail $30 per ton and ran on one occasion as high as $50 per ton. The line of steam packets on the Pacific was also particularly handicapped, as there were no shops anywhere on the coast for repairing ships and their machinery; such facilities as were needed in the operation of a steamship line, the Pacific Mail Steamship Company itself had to establish. It speaks well for builders and designers of steamships (such as W. H. Webb, of New York) that the vessels they produced—after rounding the South American continent—were able to operate steadily and reliably on a length of run up and down the West Coast of North and Central America practically equivalent each way to a transatlantic crossing, with no outside or shore mechanical assistance and no periodic expert conditioning, which every other steamship line obtained and demanded as essential if maintained service was to be had or even expected. No British builder of ships and manufacturer of machinery could point to such a record as that established by W. H. Webb in the late forties and the fifties with his wood side-wheel steamships in Pacific coastal service and later in the transpacific run between San Francisco and Asiatic ports.

The following is a list of the side-wheel ocean-going steamers built by W. H. Webb, of New York, for the Pacific Mail Steamship Company coastwise service during the years 1853-1864 inclusive and after the construction for this company of the steamships *California* and *Panama* in 1848 and the *Golden Gate* (2,067 tons) in 1850:

Name of Steamer	Year Built	Tonnage	Dimensions in Feet			Remarks from American Lloyd's Register of Shipping
			Length	Beam	Depth	
SAN FRANCISCO	1853	1,850	276	39.5	23.5	Side-wheel steamer. Webb records show a beam of 39 ft. 10 in.
CONSTITUTION	1861	3,575	340	45	30	Side wheels. Beam engine. 105-in. cylinder by 12-ft. stroke. Brig rig. Iron-braced on frame; 3 decks.
GOLDEN CITY	1863	3,642	340	45	30	Side wheels. Beam engine. 105-in. cylinder by 12-ft. stroke. Bark rig; 4 decks.
SACRAMENTO	1863	2,647	271	41	24	Side wheels. Beam engine. 105-in. cylinder by 12-ft. stroke. (Builder stated as Webb & Bell.) Webb's personal records give dimensions as 300 x 41.6 x 28.
HENRY CHAUNCEY	1864	2,800	320	43	27	Side wheels. Beam engine. 104-in. cylinder by 12-ft. stroke. Brigantine - rigged; 3 decks. Iron-strapped; 3 bulkheads.

The *Constitution* and the *Golden City* were "tremendous vessels" for their day, and all of the Webb-built wood steamers, it was said by contemporary authorities, were "as perfect in their class as his clipper ships, which were fully the equal to the product of any American builder and far superior to the very best of the sailing ships built abroad."

Webb continued to build for the Pacific Mail Steamship Company until 1872, his largest vessel constructed for that line being the transpacific steamship *China* of 3,836 tons in 1866-1867 and the last the *Nevada* of 1,900 tons, launched in 1872 (length 288 ft., beam 40 ft., depth 21 ft.); both were wood side-wheelers. In 1863, Webb also built for the Pacific Mail Steamship Company the two wood screw-propelled vessels *Mariposa* and *Monterey*. These steamers, bearing the now popular names in the Pacific, were of 1,300 tons, had two decks, drew 14 ft. of water, and had direct engines, with cylinders 50 in. diameter by 42 in. stroke.

The Pacific Mail company acquired in its early days the *Carolina*, a barkentine-rigged two-deck screw-propelled wood steamer of 680 tons, built in 1849 by T. Birely & Company, Philadelphia; this vessel was 150 ft. long, 28 ft. beam, 21 ft. deep, and 16 ft. draft and had direct engines, with two cylinders 44 in. diameter by 36 in. stroke. Other important steamers added to the Pacific Mail fleet and built during the early fifties were:

Name of Steamer	Year Built	Builder	Tonnage	Dimensions in Feet			Remarks from American Lloyd's Register of Shipping
				Length	Beam	Depth	
JOHN L. STEVENS	1852	Smith & Dimon, New York	2,182	275	41	26	Brigantine-rigged; 3 decks; oscillating engines; 1 cylinder 85 in. diameter.
SONORA	1853	J. A. Westervelt & Son, New York	1,616	264	36	24	Topsail schooner-rigged; 3 decks; side-wheeler; vertical engines 365 N.H.P.; 2 cylinders 50 in. diameter by 120 in. stroke.
ST. LOUIS	1853	J. A. Westervelt & Son, New York	1,621	264	36	24	Topsail schooner-rigged; 3 decks; side-wheeler; vertical engines 365 N.H.P.; 2 cylinders 50 in. diameter by 120 in. stroke.
ORIZABA	1854	J. A. Westervelt, New York	1,450	246	35	18	Side-wheeler; 2 decks; engine 320 N.H.P.; cylinder 65 in. diameter by 132 in. stroke.

The firm of Howland & Aspinwall, which was behind the Pacific Mail Steamship Company, owned some iron screw-propelled vessels constructed early in the sixties. The *Economist* of 588 tons was built at Dumbarton, Scotland, in 1860, and the sizable *Atlanta*, which Howland & Aspinwall also owned, was of 1,988 tons and was constructed in Glasgow in 1863. This vessel was 338 ft. long, 34 ft. 6 in. beam, and 22 ft. depth; she was bark-rigged, with two decks and six watertight bulkheads, and her screw was driven by an engine with two cylinders each 60 in. diameter by 48 in. stroke.

The Pioneer Steamship Passage from New York to San Francisco—the S.S. CALIFORNIA, *October 1848-February 1849*

The pioneer steam-propelled vessel to make the passage from New York to San Francisco (or from any East Coast North Atlantic American port to any California or North Pacific West Coast port) was the S.S. *California* of 1,057 tons (length 203 ft., beam 33 ft. 10 in., depth 20 ft.), owned by the Pacific Mail Steamship Company (Howland & Aspinwall), New York, and built by William H. Webb, New York. The machinery of the vessel was built by Stillman, Allen & Company (Novelty Iron Works), New York, and consisted of paddle side-lever engines of 250 rated (nominal) horsepower, with cylinder 70 in. diameter by 96 in. stroke. The steam pressure was 10 pounds per square inch and the revolutions of the paddle wheels about 14 per minute. This historic voyage was under the command of Capt. Cleveland Forbes, and the wood side-wheel steamship went through the Strait of Magellan (a dangerous course for sailing vessels), made only one coaling stop on the Atlantic side and three on the South American Pacific side en route to Panama, and then called at four Mexican ports, also San Diego and Monterey, on the run up the West Coast to San Francisco, the port of destination, which was reached in 144¾ days from New York and after a scant 76 days of steaming. The following is an abstract log of the passage taken from the official sources:

		Date	Elapsed Time from New York Total	Steaming
			Days Hours	*Days Hours*
Left	New York	Oct. 6, 1848		
Arrived	Rio de Janeiro*	Nov. 2, 1848	26-19	26-19
Left	Rio de Janeiro	Nov. 25, 1848	49-22	
Arrived	Valparaiso†	Dec. 16, 1848	70-14	47-11
Left	Valparaiso	Dec. 22, 1848	76-23	
Arrived	Callao (Peru)	Dec. 27, 1848	81-15	52- 3
Left	Callao (Peru)	Jan. 10, 1849	96-00½	
Arrived	Paita (Peru)	Jan. 12, 1849	97-14	53-16½
Left	Paita (Peru)	Jan. 14, 1849	99-17	
Arrived	Panama	Jan. 17, 1849	102-17	56-16½
Left	Panama	Feb. 1, 1849	117-21	
Arrived	Acapulco (Mexico)	Feb. 9, 1849	125-21	64-16½
Left	Acapulco (Mexico)	Feb. 11, 1849	127-18	
Arrived	San Blas (Mexico)	Feb. 13, 1849	129-22	66-20½
Left	San Blas (Mexico)	Feb. 14, 1849	130-19	
Arrived	Mazatlan (Mexico)	Feb. 15, 1849	131-18	67-19½
Left	Mazatlan (Mexico)	Feb. 15, 1849	132- 1	
Arrived	San Diego (Calif.)	Feb. 20, 1849	136-17	72-11½
Left	San Diego (Calif.)	Feb. 20, 1849	136-23	
Arrived	Monterey (Calif.)	Feb. 23, 1849	139-19	75- 6½
Left	Monterey (Calif.)	Feb. 27, 1849	144- 3	
Arrived	San Francisco (Calif.)	Feb. 28, 1849	144-18	75-21½

*Passed Bermuda on Oct. 9, crossed the equator on Oct. 24, and passed Fernando de Noronha on Oct. 25, 1848.
†Entered the Strait of Magellan on Dec. 7 and left the strait on Dec. 12, 1848.

Comparison between the Performance of the Steamship CALIFORNIA *and Fast Passages Made by Sailing Ships between the Same Ports*

A. New York to San Francisco

Name of Vessel	Date Leaving	Date Arrival	Total Elapsed Time Port to Port	Comment
			Days Hours	
CALIFORNIA (steamship)	Oct. 6, 1848	Feb. 28, 1849	144-18	Steaming time 75 days 21½ hours.
ANDREW JACKSON (clipper ship)	Dec. 25, 1859	Mar. 23, 1860	89- 4	Capt. John E. Williams, Sandy Hook to pilot ground.
FLYING CLOUD (clipper ship)	Jan. 21, 1854	Apr. 20-21, 1854	89- 8	Capt. Josiah P. Creesy. Points of commencing and ending passage indefinite.
FLYING CLOUD (clipper ship)	June 2, 1851	Aug. 31, 1851	89-21½	Capt. Josiah P. Creesy. Claimed anchor to anchor.

B. New York to Equator

Name of Vessel	Date: Leaving	Date: Arrival	Total Elapsed Time Port to Port (Days Hours)	Comment
CALIFORNIA (steamship)	Oct. 6, 1848	Oct. 24, 1848	18	Steaming time reported as 17 days 18 hours.
GREAT REPUBLIC (clipper ship)	Dec. 7, 1856	Dec. 23, 1856	15-19	Record claimed by Capt. Joseph Limeburner.
TINQUA (clipper ship)	Nov. 24, 1852	Was at Lat. 2° 33′ N., Long. 31° 10′ W. on Dec. 7, 1852, having run to within 153 miles of equator in 13 days. Capt. J. D. Whitmore.		

C. New York to Rio de Janeiro

Name of Vessel	Date: Leaving	Date: Arrival	Total Elapsed Time Port to Port (Days Hours)	Comment
CALIFORNIA (steamship)	Oct. 6, 1848	Nov. 2, 1848	26-19	Left New York 7 P.M., arrived Rio 4 P.M. (difference of time 2 hours); distance reported 5,100 miles "in 26 days."
PHANTOM (clipper ship)	Boston Jan. 6, 1853	Passed Rio Jan. 29, 1853	23	Capt. Alvin H. Hallet. Passed port close in shore, but did not enter harbor.
ADELAIDE (clipper ship)	New York Jan. 27, 1855	Passed Rio Feb. 21, 1855	25	Capt. Joseph Hamilton. Reported "opposite Rio, 25 days out from New York."
SNOW SQUALL (clipper ship)	Feb. 21, 1856	Mar. 21, 1856	29	Captain Gerard. Left New York the afternoon of Feb. 21 in 1856 (a leap year); arrived Rio morning of Mar. 21.

D. New York to Valparaiso

Name of Vessel	Date: Leaving	Date: Arrival	Total Elapsed Time Port to Port (Days Hours)	Comment
CALIFORNIA (steamship)	Oct. 6, 1848	Dec. 16, 1848	70-14	Steaming time 47 days 11 hours.
SEA WITCH (clipper ship)	Apr. 13, 1850	June 11, 1850	59	Capt. George Fraser; a "world's record."
ECLIPSE (clipper ship)	Jan. 5, 1852	Mar. 8, 1852	62	Capt. Joseph Hamilton; a "fast run between the ports."

E. Rio de Janeiro to San Francisco

Name of Vessel	Date: Leaving	Date: Arrival	Total Elapsed Time Port to Port (Days Hours)	Comment
CALIFORNIA (steamship)	Nov. 25, 1848	Feb. 28, 1849	94-20	Steaming time 49 days 2½ hours.
WITCHCRAFT (clipper ship)	June 10, 1851	Aug. 11, 1851	62	Capt. William C. Rogers; a "record voyage."
SPITFIRE (clipper ship)	Dec. 16, 1853	Feb. 20, 1854	65	Capt. John Arey; "best time made by any loaded ship except WITCHCRAFT."
HURRICANE (clipper ship)	Feb. 8, 1852	Apr. 15, 1852	67	Capt. Samuel Very, Jr.; a "smart passage of 67 days."

F. Valparaiso to San Francisco

Name of Vessel	Date		Total Elapsed Time Port to Port	Comment
	Leaving	Arrival		
			Days Hours	
CALIFORNIA (steamship)	Dec. 22, 1848	Feb. 28, 1849	67-19	Steaming time 28 days 10½ hours.
TELEGRAPH (clipper ship)	Mar. 13, 1854	Apr. 16, 1854	34	Capt. Kimball Harlow; a "fast run up the Pacific Coast."

William H. Aspinwall, a New York merchant trading to Panama, had gambled when he took over the rights to run a steamship line from the Isthmus to Oregon. This venture, undertaken before the discovery of gold, was called daring, even with the aid of a $200,000 government subsidy. The fuel bill, it was figured, would exceed the amount of the subsidy, coal being as high as $50 a ton. There were no dry-dock or machine shop facilities on the West Coast, and the passenger and cargo business to the Pacific Northwest was quite slim and could hardly be expected to make the enterprise profitable. However, Aspinwall ordered built three wooden side-wheel steamers. The keels of the *California* and *Panama* were laid at the New York shipyard of William H. Webb, while another New York builder, Smith & Dimon, started construction on the *Oregon*. The Novelty Iron Works, of New York, guaranteed its side-lever beam engines to drive the ships "at better than 10 knots." The vessels were to carry approximately 20,000 sq. ft. of canvas, and the staterooms and saloons were laid out to carry some sixty first-class passengers "in the greatest comfort."

Before the last of the trio had been delivered and shortly after the *California* sailed on her maiden voyage, the Gold Rush to the West Coast started, and the side-wheelers were on the richest steamship route in the world. The *California,* when she steamed out of New York Harbor on October 6, 1848, bound for the Golden Gate by way of the Strait of Magellan, carried provisions for a year, and her bunkers held 500 tons of coal. The voyage to San Francisco was full of adversity. Off the Virginia Capes, the *California* was hove to, a storm spanker holding the vessel's head up to the wind, with her engine stopped. The ship's high-pressure crosshead had cracked. Instead of returning, the vessel continued on her way to Panama. Captain Forbes was seriously ill before the Brazilian coast was sighted, and the ship finally put into Rio de Janeiro after, however, first missing that port owing to faulty navigation. The captain recovered from his illness (hemorrhage of the lungs), and the vessel proceeded; in the Strait of Magellan the *California* bucked head winds for 40 hours, but finally reached Valparaiso to load coal.

At the next port, Callao, Peru, 75 passengers were taken aboard for San Francisco—a mistake which became apparent on January 17, 1849, when the *California* anchored at Panama after a passage of about 103 days, and 1,500 eager passengers were discovered camped on the shore, many of whom had paid for staterooms in the new Pacific Mail ship. As the *California* headed up the Mexican coast, she had hundreds of prospectors aboard and far more than the maximum number of passengers that she was designed to carry. Officers and crew were forced to sleep on deck, and bunks were set up in the public rooms. Drinking water was scarce, and food supplies ran low. Out of Acapulco the hardships of the passage reached a climax. Stowaways were found in the fireroom, and several of the crew had to be put in irons. Later, the crew mutinied, and the engine stopped. When discipline was regained, the *California* ran out of coal. Passengers were put to work chopping furniture and fittings, as the steamer bucked head winds and a rolling sea. With the woodwork of her saloons and her tables and chairs consumed, the liner reached Monterey, where she took on cords of wood to carry her to the gold port of San Francisco. She arrived in February after an eventful and unprecedented voyage of almost five months' duration.

The following is a record of the first five round voyages of the S.S. *California* when operating between Panama and San Francisco:

Voyage No.	Left Panama	Arrived San Francisco	Length of Passage Between Ports	Left San Francisco	Arrived Panama	Length of Passage Between Ports
			Days			*Days*
1	Feb. 1, 1849	Feb. 28, 1849	27	May 1, 1849	May 23, 1849	22
2	June 25, 1849	July 16, 1849	21	Aug. 2, 1849	Aug. 24, 1849	22
3	Sept. 17, 1849	Oct. 9, 1849	22	Nov. 2, 1849	Nov. 22, 1849	20
4	Dec. 6, 1849	Dec. 28, 1849	22	Jan. 15, 1850	Feb. 4, 1850	20
5	Mar. 2, 1850	Mar. 26, 1850	24	Apr. 1, 1850	Apr. 23, 1850	22

There are records indicating that the S.S. *California* made nine more round trips between San Francisco and Panama or other Central American ports prior to January 1852. While in the run between San Francisco and Panama, she apparently operated on a three-week schedule, which included all stops and detention at ports en route. She evidently continued in service, running up and down the Pacific Coast, for many long years. In 1860, Holloday & Flint organized the Mexican Coast Steamship Company and operated the S.S. *California* under a liberal contract with the Juarez Government of Mexico, which was confirmed by the Emperor Maximilian in 1865. In 1868 the *California* again appears in the reserve tonnage of the Pacific Mail Steamship Company. In 1870 the steamer was thoroughly reconditioned and, in 1872, was sold to the Goodall, Nelson and Perkins Steamship Company. The S.S. *California* took part in the festival of February 28, 1874, celebrating in San Francisco Harbor the twenty-fifth anniversary of her first arrival at that port, during the Gold Rush. She was gaily decorated with flags and garlands of flowers and "moved impressively around the bay with a big crowd aboard." It is said that the *California,* making her last trip as a steamer, arrived at San Francisco on November 17, 1875, from San Diego. She was then over twenty-seven years old. Evidently, her machinery was removed, and she was converted into a sailing vessel. In 1876-1877, she was referred to as both a bark and a barkentine. Captain Davis was in command, and one report places her in the Australian trade. The San Francisco ALTA of January 17, 1895, carried this news item:

> A dispatch has been received in this city reporting the total wreck of the bark *California* on the rocks near Pacasmayo, Peru. The *California* is the first vessel that came around the Horn with a delegation of miners who had decided to cast their fortune in the new El Dorado. . . . She left Port Dadlock some weeks ago with a cargo of lumber. . . . All the crew of the vessel was saved.

This statement is in some respects incorrect. The *California* did not carry miners around the Horn on their way to the gold fields; for she left New York before news of the discovery of gold in California had reached the East Coast, and technically speaking, the vessel did not go "around the Horn," but passed through the Strait of Magellan (December 7-12, 1848). The *California* did pick up at Panama, during the last days of January 1849, passengers journeying to the gold fields, many of whom had left New York on the pioneer steamer *Falcon,* dispatched by the newly formed and subsidized United States Mail Steamship Company from New York on December 20, 1848, and advertised to reach Chagres (the Atlantic port at the Isthmus) in time for transportation of the mail and passengers across to Panama on the Pacific side to connect with the S.S. *California,* bound for San Francisco.

The *California* was built to accommodate "50 to 60 passengers in the first cabin and 100 to 150 emigrants in the steerage." When she reached San Francisco, after taking 75 passengers aboard at Callao, Peru, and "being loaded to the utmost with frenzied passengers who tried to board the steamship at Panama," the vessel carried a total of 365 passengers and a crew of 36 (officers and men), a total of 401 persons—i. e., about sixty-three per cent in excess of her "maximum capacity."

That William H. Webb, of New York, built good wooden hulls is attested by the fact that the *California,* after twenty-seven years of service as a deep-sea steamship and over forty-six years of active sea life, came to her end not by foundering but by poor, or unfortunate, navigation and by being pounded to pieces on the rocks of the Peruvian coast.

New York, the Center of Steamship Construction—Webb, a Famous Builder of Wood Vessels of War for Foreign Governments

All of the steamers for the Pacific Coast and most of the coasting steamers in the Atlantic service were built in New York. Hall says:

> In the ten or twelve busy years before the [Civil] war, 10,000 men went to work in the shipyards of (Greater) New York every day, and Webb and one or two others had each more than 1,000 men. The row of shipyards on the East River side of New York City had at the same time 20 or 30 great vessels on the stocks in different stages of construction. Unlike the sailing vessel industry, which was distributed along the coast, the production of steamers was concentrated at a few points in the large cities, where there were engine shops and banks with heavy capital, of which New York, Philadelphia, Boston, and Baltimore were the principal. . . . Taking the whole period from 1830 to 1861, there were built in the four principal cities of the Atlantic Coast about 80 seagoing steamers for the coasting and California trades and on foreign orders, aggregating 120,000 tons in register and costing about $29,000,000. Five-sixths of this tonnage was produced at New York City.

Early American side-wheel steamers attracted the attention of foreign powers, and the speed and strength of steamers designed and built for the transatlantic and deep-sea coastwise service brought many orders to the United States for steam frigates and men-of-war. Among the most noteworthy early steam war vessels built in New York to go abroad was the *Kamschatka,* constructed by William H. Brown in 1838 for the Russian Government. This vessel, described as a "sharp and fast frigate," was twice as big as the first of the Cunarders that made their first transatlantic crossings in 1840. She was 227½ ft. long, 45½ ft. hull beam (66 ft. over guards), 24½ ft. deep, and of 2,282 tons.

The success of the New York to Chagres and the Panama to California and Oregon side-wheel American wood steam vessels and the ability of the Pacific Mail Line steamers to round South America without damage on their initial runs from New York to the Pacific gave New York-built side-wheel steamships, for ocean service, as fine a reputation as New York's incomparable Hudson River and Long Island Sound steamboats enjoyed. W. H. Webb, on his merits as a designer and builder of wood steamships, gained a great reputation both at home and abroad, and for a decade he led the world in both originality and quality in the creation of vessels of war. Webb actually built battleships and ironclads of wood of 6,000 to 7,200 tons displacement and obtained large and profitable orders for steam-powered war vessels from Russia, France, and Italy. An historian has said that, during the fifties and early sixties, "New York shipbuilders won contracts in competition with the world's leading naval architects and constructors for the building of war vessels for Russia, Italy, France, Portugal, Turkey, and other foreign governments, which brought millions of dollars to that city."

W. H. Webb built the following warships for foreign powers after Congress had, by its rescinding of protection and encouragement to the deep-sea steam merchant marine of the country, repudiated its own steam-powered carriers engaged in foreign trade and given the leadership and associated volume of ocean commerce to Britain, making it truly the Mistress of the Seas, and this after American wood steam as well as sail had by sheer merit of design, construction, and performance toppled Britain from its throne in the mercantile realm and driven it from competitive trade routes such as the North Atlantic:

Name of Vessel	Owner	Year Built	Type of Vessel	Displacement	Tonnage	Length	Beam	Depth
				Tons		*Feet*	*Feet*	*Feet*
JAPANESE	Imperial Russian Government	1858	Screw steam corvette	2,000	1,400	214	35.8	17.6
GENERAL ADMIRAL	Imperial Russian Government	1859	Steam frigate	7,000	5,000	313.7	54.6	33.7
RE d'ITALIA	Royal Italian Government	1862	Screw ironclad ram	6,000	4,250	283	55	33.7
	(the first ironclad steamer to cross the Atlantic Ocean)							
RE DON LUIGI de PORTUGALLO	Royal Italian Government	1863	Screw ironclad ram	6,000	4,250	283	55	33.7
ROCHAMBEAU (originally named DUNDERBERG)	French Government (sold by W. H. Webb to Emperor Napoleon III)	1866	Screw ironclad ram	7,200	5,250	377.4	72.1 (main hull 59.5)	22.8
	(largest, speediest, and most powerful war vessel of her day)							

It is interesting to note that all of these warships were built of wood and that those constructed in the sixties not only were protected by iron armor but also were designed and built strong enough of wood to function as rams. W. H. Webb was undoubtedly the world's greatest genius of all time in the scientific designing and building of wood hulls. This list of Webb-built naval steamers is eloquent testimony to the ability of American designers and builders of steam vessels not only to have competed with but also, actually, to have led the world in merchant as well as naval marine steam engineering if a united and patriotic Congress, at the crucial period in the late fifties, had given them a chance. It is also significant that during the Civil War (with Confederate commerce raiders driving American sailing ships from the trade routes of the world and with the navy of the northern Union unable to protect it and clear the seas of this British-created and supported southern menace to American commerce) Webb built two fast and powerful screw wooden ironclads of over 6,000 tons displacement for the Royal Italian Government. These armor-plated propeller frigates, *Re d'Italia* and *Re Don Luigi de Portugallo,* were said to be capable of a speed of over 15 knots per hour, and it is reported that the *Re d'Italia* "made 14 knots on her first trip with steam up in only four of her six boilers."

Later in the war, Secretary Welles did place an order with William H. Webb for a "monster ironclad" for the United States Government, but this vessel was far too large to be built quickly, and the war was over before she was ready for delivery. This armored battleship, the largest warship in the world and originally named the *Dunderberg,* was a wooden hulled, "long and powerful ram, lying low in the water, with a 7 ft. 9 in. high shot-proof armored casement amidships 3 ft. thick, set at a 35° angle to house and protect the working of big caliber guns." It is said that she was 380 ft. length, 59½ ft. beam (72 ft. 10 in. extreme), 22 ft. 10 in. depth of hold, and 21 ft. draft, that "the portion of the bow which formed the iron-pointed and faced ram was 50 ft. in length," and that "the side armor of the massively built wood hull was 4½ inches thick." It is reported that the armor placed on the vessel weighed a thousand tons, and the displacement has been recorded at 6,900 tons (the builder's records state 7,200 tons). The ship's engines (two of them) were built by John Roach, New York, and developed 5,000 horsepower, giving the big ironclad a speed of 15¾ knots per hour and making her the "fastest armed vessel in the world." When the Civil War ended, the United States Government, claiming that it had no need for such a large, powerful, and expensive vessel, authorized her builders to sell her abroad, so Webb disposed of the battleship to the emperor of France (Napoleon III), and she was renamed the *Rochambeau.*

If the North had utilized its steam warship-building knowledge and facilities rationally and completely during the war and taken prompt steps to curb the southern-British commerce-destroying activities, there would have been no record of the *Alabama* and similar depredations, and American sailing ships would have continued on the trade routes of the Seven Seas without molestation instead of being driven to foreign registry or lay-ups in foreign ports for the duration of the war.

United States-built Steamboats for River and Inland Water Trade

The United States has always, from the days of the *Clermont* (1807), led the world in the production of side-wheeler (and stern-wheeler) steamboats for river, sound, and inland water trade. A few of the leading boats built in New York for the Long Island service in the two years 1835-1836 are stated herewith:

Name of Steamer	Year Built	Registered Tonnage	Length	Beam	Depth of Hold
			Feet	*Feet*	*Feet*
PRESIDENT	1835	615	183.8	32.3	11
BENJAMIN FRANKLIN	1835	468	160	31.5	10
MASSACHUSETTS	1836	676	202	29	12
RHODE ISLAND	1836	588	212	27.8	10.4
NARRAGANSETT	1836	576	212.5	27	10.4

The *Albany,* built at New York in 1832 for the Hudson River service, was of 588 tons and measured 272 ft. length, 26.2 ft. beam, and 8.3 ft. depth of hold. The unfortunate *Home,* built in New York in 1837, was in reality an inland waters steamboat and unfitted for the turbulent deep-sea trade (with its hogging and sagging stresses) in which she was placed; she was of 537 tons register, 211 ft. length, 22½ ft. beam, and 11½ ft. depth of hold, being an unusually narrow vessel for her length and tonnage, and with far too high a ratio of length to depth to operate successfully at sea. All of these steamboats were very fast vessels for their day. Later, Robert L. Stevens introduced the clipper type of river (or sound) steamboat. He made improvements in both hull and machinery and laid the foundation for a class of river and sound light-draft steam vessels that have never been equaled in the world for speed, capacity, strength, longevity, and economy, with reliability of operation. When the *New World* was built for the Hudson River service, she was the "longest and fastest vessel in the world," being 380 ft. in length, 50 ft. beam of hull, and 85 ft. over guards, and she carried 600 passengers in 347 staterooms. It has been said by authorities that, "in speed, these Hudson River boats have never been beaten." The *Daniel Drew, Mary Powell,* and others, it is reported, made "from 25 to 28 miles an hour and sustained that speed over long stretches of the river." It is to be regretted that, from the fifties to the end of the century, America's marine mercantile steamer construction was practically confined to vessels for navigating rivers and inland waters and to paddle-wheel propulsion.

Henry Hall, in his report to the superintendent of the census in Washington, D.C., written under date of November 30, 1882, said:

To England and America jointly is due the honor of applying steam practically to locomotion on the sea. There was a time when America led the world in the amount of steam tonnage employed, the vessels of the Mississippi River valley alone exceeding the whole steam tonnage of the British Empire; but since that time, England has surpassed her, especially in deep-sea navigation, and several other European countries have also become active in that branch of enterprise. America, however, remains the foremost country in the amount of native steam tonnage locally employed. . . . The steam tonnage of the United States comprises 5,139 tugs, yachts, paddle-wheel steamboats and ocean and lake propellers aggregating 1,221,207 tons. . . . There are only 13 vessels in the whole fleet of more than 3,000 tons register [and one was the *Solano*—a California paddle-wheel transfer boat of 3,547 tons]; about 45 vessels range from 2,000 to 3,000 tons register. They are coasting propellers and paddle-wheel steamboats on Long Island Sound and the Hudson River and comprise also about half a dozen of the larger Mississippi River steamboats. . . . Of the whole [i.e., entire steam-powered] fleet [of the United States], about 175 are employed on the deep sea and not over 30 in foreign trade.

The Congress of the United States, in the last half of the fifties and during the Civil War, had done a thorough and lasting job of driving American merchant steam vessels from the Seven Seas. A quarter of a century after the ocean-going steamers of the United States had been deprived by Congress of the support and encouragement given such vessels by Britain (and all other marine powers), a United States Government investigation reported that the country possessed only twelve deep-sea vessels of over 3,000 tons and "not over 30 steam vessels," all told, engaged in foreign trade.

Ericsson in England and the United States—the Slow but Successful Development of Screw Propulsion

The paddle wheel for driving steam vessels effectively developed rapidly with the years in the United States, but for small craft rolling and pitching on the open seas on the British trade routes, paddle-wheel propulsion left much to be desired. A premium was offered in England in 1825 for the best device for propelling a ship without paddles. In response, a naval officer suggested a screw with two blades projecting from an axis at an angle of 45°, but experiments proved the idea to be unsatisfactory. In 1836 two plans for screw propulsion were presented, one by F. P. Smith, of London, and the other by Capt. John Ericsson, of Sweden, then resident in London.

The British took kindly to the Smith "invention," which was on the principle of the Archimedean screw—a spiral wrapped around an axis. The idea was tried out on a 34-ft. boat, which, it was said, made a speed of 8 miles an hour, and when a part of the blade of the propeller accidentally broke off, the boat "immediately shot ahead at a sensibly greater speed." A British stock company was formed to perfect and exploit the "Smith screw propeller" and in 1839 built the *Archimedes*, a vessel 125 ft. long over-all, 22 ft. beam, and 13 ft. deep, which drew 9½ ft. of water and registered 237 tons. It is said that the *Archimedes* "sailed around England and Scotland, calling at ports of note to show herself and try to interest shipowners and investors," but Smith had nothing either new or of practical worth. His propeller accomplished nothing of value in the realm of steam navigation, and the British Admiralty, which was at no time as much interested as were the mercantile marine shipowners in the finding of a better means of propulsion than the paddle wheel for deep-sea vessels, turned down the "Smith screw propeller," declaring it to be of no value for naval work.

Ericsson ran tests on the Thames River as early as April 1837 with a small boat 45 ft. long and 8 ft. beam and fitted with his idea of a screw. He was optimistic that he would succeed in getting British Admiralty and mercantile approval of his "invention" and plans for marine propulsion and, in the sale of the "right of use" to many, make a good deal of money for himself. Ericsson would never have been able to build his boat and run the Thames River trials if it had not been for Francis B. Ogden, the American consul at Liverpool, who, thinking well of Ericsson's idea, at an early date had encouraged and financed the Swedish engineer. (The British experimental boat was named *Francis B. Ogden* as an expression of Ericsson's appreciation of his American backer.) Ericsson worked hard to interest the British, but failed. They did not think much of the "unknown foreigner," his idea of marine propulsion, or of the results obtained.

Capt. Robert F. Stockton, of the American Navy, happened to be in London in 1837 and was appealed to by Ogden to look over the Ericsson screw. "I have been convinced from the start," Ogden said, "that the Ericsson screw can be made of both commercial and naval value and that a perfected screw will ultimately completely replace paddle wheels as the general means of propulsion of ocean-going vessels." Captain Stockton made an investigation of the Ericsson screw and made tests of the *"Ogden"* on the Thames. It is said that he had "a bold turn of mind and a genius for practical mechanics"; he assuredly did see great possibilities in the idea of the screw propeller for naval use, but felt that much work had to be done on the Ericsson screw before it would be "perfected" and "ready to be fitted on a steamship as a sole means of propulsion." Captain Stockton tried to make a deal with Ericsson for the American rights to his "invention" and was influenced to give the Swedish engineer an order (on Stockton's personal account) to build two boats with steam machinery and a propeller for practical demonstration in the United States.

One experimental Stockton-owned boat, of which we have a record, was built of iron by Laird, of Birkenhead (who later constructed the famous Confederate commerce raider *Alabama*). This experimental boat, named the *Robert F. Stockton,* was launched in 1838 and was 70 ft. length, 10 ft. beam, 9 ft. depth of hold, and 6 ft. 9 in. draft. Two propellers, 6 ft. 6 in. in diameter, were fitted on a single shaft, one ahead of the other. After tests to show that the machinery was properly built, Captain Stockton had his boat rigged as a two-masted topsail schooner and sent to the United States under sail in command of Captain Crane, an American, with a crew of four men and a boy. This was the first iron vessel to cross the Atlantic Ocean. The screw, as suggested for practical use by Ericsson, was thus introduced in America by Captain Stockton, but this was thirty-five years after John Stevens, Jr., of Hoboken, N. J., had used a screw with a measure of success in driving a steamboat and sixty-four years after David Bushnell, of Saybrook, Conn., had used a screw propeller successfully in his submarine. The screw steamer *Robert F. Stockton* was decidedly an experimental vessel, and she had many faults that had to be overcome before the Ericsson screw could be considered of commercial value. Stockton's second screw boat built under Ericsson's supervision, the *New Jersey* (apparently a sister to the *Robert F. Stockton*), arrived from England in the fall of 1839 and, after further development on this side, saw service as a tugboat on the Delaware and Raritan Canal and on the Delaware and Schuylkill rivers.

Ericsson, after being "turned down cold" by the British Admiralty for a second time (following its knowledge of the trials run on the Mersey by the *Robert F. Stockton*), energetically sought "to push his invention" in England for commercial use. He succeeded in building two screw canal boats, the *Novelty* and the *Enterprise,* but whereas the latter was subsequently used for a while as a towboat, the craft were not successful, and Ericsson finally decided to abandon his endeavors to perfect and make practicable his "invention" in Britain. He, therefore, came to the United States in 1839 and continued his work of development here in an encouraging and most helpful environment—both mechanical and psychological.

It was in the United States that the idea of the screw propeller not only had originated but also was to be developed for practical use in both the mercantile marine and naval service.

In 1840-1841, the world's first seagoing steamer driven by a screw propeller and built for either mercantile or naval service was designed and constructed in New York. This vessel, the *Clarion* of 250 tons, fitted with a 6 ft. 4 in. diameter Ericsson wheel, was placed in service between New York and Havana. In 1842, Philadelphia built four screw steamers of 200 tons each to run to Albany and Hartford and two of 80 tons each for trading between Philadelphia and Baltimore. By December 1843, forty-two vessels in America had been fitted with screws, including the *Vandalia* (1841) and nine other vessels on the Great Lakes, four for the Hudson River, four for Long Island Sound, and a number for the coastwise service. The Navy Department, as a whole, felt—as did the British Admiralty in the forties and most of the fifties—that not only was wood (which would resist the pounding of enemy guns) a better material than iron for the construction of warships but also the side paddle wheel was by far the best means of propulsion for naval vessels because of its superiority in maneuvering. However, American naval line officers, constructors, and engineers were a unit in desiring to place the propelling machinery of warships below water, and as certain officials in the Navy Department well knew that screw propulsion was superior to the generally accepted type of paddle-wheel drive to the degree that the machinery could be placed low in the hull and protected, Captain Stockton, backed by Ericsson and with some political influence, was successful in inducing the United States Government to build one of the three warships ordered in 1839 as a propeller-driven vessel. That this decision was made by the government with a measure of reluctance is proven by the fact that in the late forties and early fifties the Navy Department insisted that the Collins liners and other subsidized merchant vessels built as naval auxiliaries, under government-approved designs and supervision, should be side-wheelers. It is surprising and significant that, until a few American naval officers had elaborated on the self-evident fact of the superiority from a machinery protection standpoint of screw propulsion for warships, this decidedly meritorious phase of the proposed new form of propulsion had received no consideration by the super-conservative British Admiralty.

The screw-propelled vessel ordered built by the United States Government in the appropriations bill of 1839 was the 31-gun sloop-of-war *Princeton,* and she was the first war vessel in the world driven by a screw propeller. The *Princeton,* built at the old Southwark Navy Yard in Philadelphia, was 164 ft. length, 30½ ft. beam, 21½ ft. depth of hold, and of 673 tons register; with 200 tons of coal aboard, she drew 19 ft. 4 in. of water. The machinery and propeller for this vessel were built only after a great deal of experimentation and observation of the performances of the early built American screw-driven mercantile craft. Her construction, therefore, was slow, but Ericsson, with much American technical help and strong support, designed for this important vessel a special, peculiar screw, which had an 8 ft. diameter "drum" with six blades, an extreme diameter of 14 ft., and a weight of 12,000 pounds. The *Princeton* cost $212,000 and was a successful steamer. On her trial trip, she attained a speed of "13 miles an hour." The vessel saw a good deal of deep-sea service. She made cruises to the Mediterranean and various parts of the world and took part in the Mexican War.

After 1842, the propeller was quite generally adopted in America for deep-sea coasting steamers, superseding about 1850 the paddle wheel, which, however, continued to be used for light-draft river and Long Island Sound service. In spite of all the experiments made in England with the Smith and the Ericsson propellers, it was not until Americans put the screw to extensive practical use on the Atlantic seaboard and Great Lakes that the British awakened to the advantages of the screw, and it was three years after American naval authorities had extolled the use of the propeller for warships and clearly pointed out its unquestioned advantages that the British Admiralty decided not to build a screw-propeller warship but to try out the mechanism on the frigate *Rattler.* The screw propeller was quickly adopted for tugs in the United States, and the famous seagoing iron steamer *R. B. Forbes* of 300 tons, designed by young Sam Pook, of Boston (when a twenty-year-old boy), and built at East Boston just before the mid-century, was a twin-screw vessel driven by two engines and a most useful and successful steamer in towing big ships at sea, in getting them to port, and in rendering assistance to windjammers when in distress off the coast. At about this time, Robert Bennet Forbes, of Boston, built and urged the construction and operation of screw-propelled steamers—both single and twin—for deep-sea ocean as well as coastwise work, and it is most unfortunate that the United States Government did not co-operate with him and encourage his plan to run a subsidized line of screw mail steamers between the United States and Europe. Before the Civil War, however, Forbes's protegé, Samuel H. Pook, then the most brilliant independent naval architect in the United States and the designer of a host of the finest and fastest of a big fleet of speedy clippers, designed four seagoing iron screw steamers, each over 200 ft. long, the *Massachusetts, South Carolina, Mississippi,* and *Merrimack,* which were built by Harrison Loring at South Boston in 1860-1861 to run between Boston, Charleston and New Orleans. It is apparent that if it had not been for the Civil War and if the United States in the late fifties and throughout the sixties had been a really united country and not politically split (with the South and West opposed to the Northeast and the states that harbored the country's shipping interests), then progress would have been made in America as well as in Britain in the development of iron shipbuilding and marine engineering, with emphasis on screw propulsion for deep-sea work.

It is remarkable that in England paddle-wheel towing boats "lingered in use" well into the twentieth century. It is also strange that, whereas Britain, as early as 1825, felt the need of some form of marine propulsion superior to the paddle wheel and offered premiums to encourage invention, the screw propeller—used by Stevens in the United States in the first decade of the nineteenth century, advocated by Smith and Ericsson in 1836, and well tested in British waters in 1837-1840—was very slow in being adopted by either the British mercantile marine or the admiralty and that the government-subsidized and dominated Cunard Line refused to build screw vessels instead of paddle-wheel steamers for transatlantic service until the sixties, when the world in general had reached the point of considering the paddle wheel antiquated for ocean steam navigation.

The introduction of the screw propeller, in the early days, involved difficulties diametrically opposite to those brought about comparatively recently with steam-turbine and electric drives. During the twentieth century, the problem has been to gear down from the economic speed of engine shaft to that of screw shaft; whereas in the early days it was necessary to introduce some sort of gearing between an engine that gave only about twenty-five revolutions per minute and a screw shaft that had to be turned about three times as fast. This was one reason why the screw, after it had been commercially introduced and demonstrated in the United States, tried out with success on small steamers in actual service in the merchant marine, and fitted to a sizable sloop of war (where it performed with satisfaction), was not more generally adopted for the propulsion of steamers of the larger class. Again, the paddle wheel was better for light-draft river and sound vessels and for maneuvering in narrow channels and confined waters.

New York, the great center of shipbuilding in the forties and of engineering and steamship building in the forties, fifties, and sixties, is located at the junction of the Hudson (North River) and Long Island Sound (East River), and the infancy of steamer operation was on these waters. New York "stood solidly" for paddle-wheel steamers, but so did Cunard and other experienced British steamship interests prior to the Civil War. The splendid success of Webb with paddle-wheel drive on steamers that rounded the South American continent and ran for years with no shore repair-shop attention convinced Webb and New Yorkers generally that the paddle wheel was the most reliable means of propulsion—particularly for wood vessels. Although Webb built (1862-1866) the largest screw-driven steamers of their day (the 6,000- to 7,200-ton displacement ironclad rams for the Italian and French governments), he put paddle wheels on his merchant steamers built during the same years. There is no doubt that the accusation made by Charles H. Cramp, of Philadelphia, is partly true: "New York interests would not consider any other than the paddle wheel, with its walking beam engine, and they persistently proclaimed its superiority over all other types and they carried with them the shipowners, shipbuilders, shipping men, and mariners." (New York did build many fine side-wheelers, with oscillating engines and without the walking beam.) However, if Congress had subsidized and encouraged ocean steam packet lines to run in competition with the British, the screw would have been more favored for deep-sea transocean work, and if the U.S. Government had built a modern iron screw-propelled navy and encouraged the erection of iron shipbuilding plants and engineering works to produce such craft, the call would have developed for propeller-driven fast mail and passenger steamers. After that demand had been met and the iron screw mercantile marine developed, slower iron screw cargo vessels would naturally have followed and been built on this side of the Atlantic as they were in Britain.

Steam Wins through Subsidies and Ability to Arrive As Well As Depart on Schedule

An anti-protectionist historian, John R. Spears, has maintained that the subsidies paid steamships, even in the early days of their introduction and development, were uneconomic and harmful and that steamships could have been built and operated in the United States in competition with British steamships—and this without government assistance—if Americans had known how to build marine engines and steamships and been disposed to enter the field of steam navigation. Spears's prejudice against subsidies runs away with his good judgment, and all of his arguments are made to bolster a bigoted stand. No steamships in the earliest years of their introduction could compete with sailing ships in deep-sea work; big coal consumption greatly reduced and in some runs almost eliminated cargo carrying, and the cost of repairs and of an engineering as well as deck staff and crew was high and even prohibitive, for the vessels were still fully rigged and had to carry sailors to man them and handle the canvas. But, as far as sailing schedules and conformity with them were concerned, steamers from the start had an overwhelming advantage over sailing vessels for carrying mail and passengers or express freight when time was an important element.

Sailing packets came into public favor in 1818 and succeeding years because they operated on an advertised schedule of day and time of departure. It is true that sailing packets were driven harder and, therefore, generally made better time on their passages than other vessels, but for long years packets had the same models and were rigged the same as other sailing vessels of their size and period. The packets held a great advantage, however, over regular (or general) traders and transients (or sailing tramps) because of their advertised time of sailing; the greater the regularity of departure of the ships of a packet line, the greater this advantage proved to be—not only in revenue from passenger fares but also from freight, for merchants willingly paid a premium on their freight bills for the guarantee of a stipulated sailing date. To all the advantages of an advertised departure, steam packets added a scheduled arrival, which was of greater importance than the benefits accruing from a regular and known date of sailing. With both a stipulated date of departure and a scheduled date of arrival, which was relatively closely maintained, steamers from the start had a monopoly of mail carrying, of urgent passenger travel, and of express freight.

Much has been made of the very occasional transatlantic crossings eastbound when, with unusually favorable winds and seas, an American sailing packet made a faster passage, port to port, than a competitive steam packet. A case in point is that of the ship *Palestine* of the New York-London Black X (or Morgan) Line. The *Palestine* was a fine, fast 1,751-ton full-rigged sailing packet (built by J. A. Westervelt, New York, in 1854), which landed her passengers at Portsmouth in 14 days from New York, squarely beating the Cunard steamer that sailed at the same time. There are records showing that for many years—indeed as long as sailing vessels, as packets or clippers, sailed the Western Ocean—such ships with a strong favorable wind overtook steadily plodding steam packets, passed them, and ran their hulls down; but such experiences, whereas numerous in the early days of steam (with its 8-knot-per-hour speed), became fewer as the speed of steam vessels gradually increased to 10, 12, 14, and 16 knots. High speed (up to over 18 knots per hour for the clippers) under canvas for a few hours or some 13 knots per hour for a few days was an entirely different matter from the all-important and prime factor of passage time from dock to dock. And again, the sailing vessels made their fast Atlantic crossings eastbound because of the prevailing westerly winds, but that was only one leg of the round-trip voyage; the records of sailing packets westbound show how easy it was for even slow steam to prove its overwhelming superiority over sail on the run from Europe to America.

On the westbound crossing, a slow pioneer steamer making a 15-day run equaled the fastest time made under extraordinary, favorable conditions by a sailing packet, but the *Yorkshire* (the fastest of all Western Ocean sailing packets), which made this record passage under canvas of 15 days, pilot to pilot, and 16 days, city to city, took 58 days to cross on one occasion, and the average length of her westbound runs for eighteen years (1844-1862) was 29 days, or about twice as long as the crossings of early steam packets and nearly three times as long as those of Collins steam liners. It was not average time of passage that gave, at the start, the advantage to steam transatlantic sailing packets so much as the possibility of unusually long voyages of the sailing ships, which individually made fast westbound crossings of 16 days (*Yorkshire* and *Harvest Queen*) to 25 days, port to port (not light to light or point to point as timed by the steamers), and showed average lengths of crossing of 28 days (*Amazon*) to 40 days, but occasionally made long drawn-out passages of from 70 to 85 days. It was the ever present possibility of a long, tedious crossing westbound that doomed sail on the North Atlantic for all types of transportation where speed was desirable and when a time of arrival that could be forecast within a reasonable margin was necessary.

Until the British, for mail and military naval reasons, subsidized the Cunard Line, no steamships could be made to pay in competition with sail on the North Atlantic—notwithstanding the great benefits that steam enjoyed from the first as far as the time factor was concerned. In the early days, mail itself paid little or nothing; passenger rates had to be kept competitive with those of the sailing packets (and generally lower because the average passenger disliked the vibration, noise, and dirt of the steamers). A steamer's cargo space, for which a premium could be obtained in freights because of rapid and reliable delivery, was very small due to the fact that so much of the ship's displacement (weight) had to be utilized for machinery, coal, fresh water for the boilers, and supplies, and the latter category was much greater in steam than sail because of the machinery and required larger crew. Private capital could not stand the losses associated with deep-sea steam navigation, but government subsidies, paying heavily for carrying the mail and for the privilege of using the steam mail liners as naval auxiliaries, not only made the operation of steam packets practicable and profitable on the North Atlantic but also developed a network of steam packet routes on the Seven Seas connecting the important ports of the world.

The British Government, by subsidizing steam packets, developed the marine engine in Britain, and as a result coastal lines and shipping services—for the promotion and protection of which no subsidies were required—came into being and expanded rapidly. Britain was through as a nation of wood shipbuilders; it had neither the necessary timber for building hulls nor the trees to spar its sailing ships. Moreover, Britain did not have the art either of designing or building wood ships (and this outside of the element of cost) that could compete with the product of American shipyards. As long as Britain felt that it was a shipbuilding nation of the first rank, it refused to enter into any true and honest reciprocal shipping arrangement with the United States, and when in 1849 Britain abolished, to a pronounced degree, its restrictive and marine protectionist policy, it merely longheadedly operated to its own selfish advantage. Britain not only bowed to the inevitable but also, as a rapidly fading marine power, capitalized conditions for its economic gain and political glory and looked with a great measure of confidence to a marine era of iron and steam. That the British policy and the optimism associated with it were justified and wise is told in the pages of history by the actions of the United States Congress and the political breakdown in America.

Britain Fosters Iron Shipbuilding and Screw Propulsion, While the United States Fails to Encourage and Protect Its Deep-Sea Merchant Marine

Iron for building small light-draft boats for commerce, such as canal boats and barges, was used in Britain many long years before the metal was considered a satisfactory substitute for wood in the construction of vessels for ocean trade. Following the American War of the Revolution and during the period of the Napoleonic Wars in Europe, wood shipbuilding in Britain became very expensive, timber and planking, which had to be imported, were scarce, and the ironmasters of Britain turned experimentally to iron as a domestic substitute, which they felt had advantages over wood and in the use of which there seemed to be a field in which they could develop a sizable trade. It was the canal era in Britain, and canals were being dug throughout the length and breadth of a land that topographically was well adapted for their use. The industrial era had made imperative some improved means of transport other than that of horse-pulled vehicles over dirt or cobbled roads—both in the handling of raw materials and the distribution of finished goods—if the mines, mills, and factories were to produce to meet the demand. Before railroads were built, industrialism was dependent upon canals in Britain for its development and growth. Iron was vital for the construction of machines, engines, boilers, and mechanical appliances upon which industrialism was built, so it is not surprising that the ironmasters, after their success in rolling plates for making boilers, etc., should think of using such material as a substitute for the outside planking of canal boats that brought materials to and took them from the works, mills, and mines. Canals had shallow water, and the boats were of light draft. The thickness of an iron plate of requisite strength was much less than that of wood planking; therefore, more pay load of any heavy material could be put on an iron-plated than on a wood-planked boat at a stated maximum draft of water, and iron as a boat (or ship) building material started out with this pronounced economic advantage, which would be in evidence as long as the craft was operated. It is claimed that iron plates were used as a substitute for outside planking in the construction of canal boats in Britain as early as 1788; that, whereas the practice was not generally adopted, "it proved practical qualities of value and interesting possibilities." When shapes were rolled and iron boats could be assembled in sections and "knocked down" for shipment abroad for service in wild foreign lands where wood boats could not be built, iron as a shipbuilding material in imperialistic Britain received a "boost." However, while private capital gradually favored iron as a shipbuilding material, it is a surprising fact that the government, because of the antagonism of the admiralty toward its use, did nothing to foster iron shipbuilding in Britain for many long years.

It was the British ironmasters themselves who promoted the use of iron for shipbuilding, and sensing a great trade possibility, they formed an association for the sole purpose of developing iron shipbuilding by technical research, co-operation, and propaganda. Iron, they affirmed, was lighter than wood for shipbuilding purposes and occupied much less space; an iron ship carried both more deadweight and more cubic feet of paying cargo than a wooden vessel of the same outside dimensions. Iron vessels were gradually built for salt water as well as fresh water service. A few iron steamers were constructed and a few sailing coasters. The first iron sailing vessel is said to have been the *Vulcan,* built on the Clyde in 1818. In 1838, Jackson & Gordon built at Liverpool an iron bark of 271 gross tons named the *Ironsides.* It is claimed that this little vessel was "the first iron sailing ship to be employed in the oceanic trades" and that she sailed across the Atlantic Ocean to Brazil in 1839 on her maiden voyage. The first steamer constructed of iron was the *Aaron Manby,* a small side-wheeler about 50 ft. long, built at Horsley, England, in 1821. The first screw steamer of any importance was the experimental *Archimedes,* an iron vessel of 237 tons, constructed in England in 1839. Whereas the *Great Britain,* built at Bristol, England, in 1843, was the first iron steamer and the first screw-propelled vessel to cross the Atlantic, it was not until 1850, when the Inman liner *City of Glasgow* began to run regularly between Liverpool and Philadelphia, that iron screw steamers took a recognized place in deep-sea transport as an economic and reliable type of carrier.

The Trade Association of Ironmasters of Britain advocated iron as a shipbuilding material and steam for propulsion, but for long years the British Admiralty would have nothing to do with either, and the conflict between the British Navy (the government) and British ironmasters (private capital) waxed hot for decades. It was a fight between tradition and superconservatism on the one hand and progress and ultimate national economic advantage on the other. Finally, British shipowners, businessmen, and farsighted patriotic politicians and statesmen stepped into the picture and around the middle of the nineteenth century forced the British Government and its prejudiced die-hard admiralty to take up and foster iron shipbuilding and marine steam engineering and co-operate with British private capital—the ironmasters, shipowners, and trade associations—for the economic well-being and glory of Britain and its overseas empire.

That the British Admiralty fought the ironmasters and the marine steam engineering industry of Britain up to the time that private British capital sent two wooden steamers across the Atlantic Ocean to the United States and inaugurated a steam packet service between the two countries in 1838 is proven by the fact that as late as 1837 Admiral Sir John Ross of the Royal Navy affirmed that the only favorable feature of steam propulsion for warships was that a vessel so equipped would undoubtedly, because of her boiler furnaces, find it easier to heat shot red hot. He concluded his adverse report with the following scathing sarcasm: "The insignificance of an admiral's flag flying at the miserable mast of a steamboat cannot be denied; nor indeed the generally insignificant aspect of a fleet of this character, compared to the gigantic and noble structures of present warfare."

At about this same time, the British Admiralty was combating iron as a building material for warships for use in the British Navy, declaring that oak was a better defensive material to resist enemy shot than iron. In 1840 the admiralty conducted "conclusive experiments" at the Woolwich arsenal, which, it was declared, definitely proved that iron was not suitable for the construction of the hulls of warships and that "oak was superior to iron in resisting iron shot." We are told that by tests the admiralty found that "a plate of heavy iron 4½ inches thick was pierced by a shot at close range." It was argued that no ship could be built that would float with outside plating of this weight; therefore, iron was unsuited for warship construction. The opinions and prejudices of the super-conservative British Admiralty influenced warship construction for years throughout the world and did much to discredit and discourage the iron industry, iron shipbuilding, and the marine steam engineering in the United States. However, even though the admiralty was highly respected and almost revered in Britain and it was generally acknowledged that the British Navy was the backbone of the British Empire and the foundation of trade and prosperity, British private capital fought the admiralty in the use of iron as a shipbuilding material and in the utilization and development of steam as a propelling power. Britain had to import timber, planking, and masting to build wood sailing ships. Iron and coal were to be found in abundance at home; therefore, common sense as well as economics and patriotism suggested to private capital the development of the art of building iron steamers in Britain, which, it was felt, ultimately could be made to compete for world trade with American wood sailing ships.

The British Trade Association of Ironmasters spent money to develop its industry and utilized funds for co-operative research and propaganda. Shipowners who could not build wood ships in Britain as cheaply as those built in the United States were receptive to a change in a shipbuilding material that was British and that held the promise of being ultimately cheaper and more permanent. British shipowners, finding it impossible to compete with the United States in the operation of sailing ships on the open deep-sea trade routes, encouraged British marine steam engineering as well as British iron shipbuilding, and private capital brought pressure to bear on the government for help in developing industries which, it was felt, would within a quarter of a century make Britain independent of the rest of the world in regard to essential shipbuilding materials and both supreme and economically unassailable in the production and operation of iron steamships that would dominate the ocean trade of the world. British private capital, working through politicians and statesmen, influenced the admiralty to change its mind in regard to both iron ships and steam propulsion, but after steam was used in British warships, it took years for private capital to convince the admiralty of the superiority of the screw propeller to the paddle wheel, particularly for warships. This early and mid-century prejudice of the British Admiralty in favor of wood hulls and of the side paddle wheel over the screw greatly influenced the trend of steamship building in America when the United States, in the late forties, decided to subsidize mail steamers that had to be built with plans approved by the U.S. Navy Department, whose views at that time merely reflected those of the British.

The prejudice of the British Admiralty in favor of wood construction for warships continued to show itself long after it had been demonstrated that iron was a superior as well as a more economic material for shipbuilding in Britain. When the claim of the admiralty that oak was superior to iron in resisting shot was no longer officially used and ships protected by iron armor were being built, the superiority of copper-sheathed wood vessels to iron in keeping the seas and maintaining speed, with clean bottoms, was dwelt upon, and as late as 1873-1874 the British Navy laid down the wood corvettes *Amethyst, Diamond, Encounter, Modeste,* and *Sapphire.* These British wood warships, known as the five "Corvettes of 1875," were of especial interest to the American marine fraternity; for whereas steam-propelled, they were full ship-rigged, and their wood hulls were built to use sail extensively at sea while cruising on their stations in far-off foreign waters.

Lindsay, the British historian, says that the repeal of the old Navigation Laws caused British shipowners to turn to the iron screw steamer; they were unable to compete with the Americans in the building of wood vessels and the use of sails and had to take up the new type of ship or abandon the seas. The British had trouble with the screw in their wood ships because of weak stern construction, and this was one of the prime reasons for building iron vessels if ships were to be fitted with screw propellers. Whereas iron boats had been built since 1820, the first iron vessel of historic interest and importance was the *Great Britain,* a screw steamer built in 1843 for the Great Western Steamship Company, of Bristol. (This was twelve years before the British Admiralty permitted the Cunard Line to build "an experimental government-subsidized steamer of iron"—the paddle S.S. *Persia* in 1855.)

Nelson Dingley, Jr., wrote that at the time Great Britain repealed her old Navigation Laws in 1849 and accepted the United States's "invitation to participate on equal terms" in certain ocean traffic, "experiments in iron shipbuilding and steam propulsion were going on in that country which, as early as 1855, began to work a revolution in marine architecture. . . ." He adds, "This revolution from wood to iron and sails to steam at once began to deprive the American merchant marine of its world leadership." The New York JOURNAL OF COMMERCE, in 1857, warned Americans that the English were using all of their advantages of marine machinery building and iron construction and that British merchants, captains, engineers, and sailors were "carrying on our trade and taking the bread from our mouths." And it was at this time that a divided country and a southern and inland group in Congress acted to withdraw all steamship subsidies, bankrupt American steamship companies, and kill the American foreign trade steam merchant marine. If the congressional spirit of the late forties and very early fifties had continued and expanded during the next fifteen or twenty years to promote, encourage, foster, and protect marine engineering and the building of iron plants, machinery, and iron ships, Britain would never have regained its commercial dominance on the Seven Seas, and Columbia, not Britannia, would have continued "to rule the waves"—as the United States assuredly did as far as the merchant marine was concerned at mid-century and during the dawn and the few years of growth of the brief clipper ship era.

It is said that, in 1857, 121 British steam vessels were receiving government subsidies, but the number of steamers, all told, under the British flag was stated as 2,132. The number of lines and steamers that the United States Congress would have been required to subsidize in the 1850's to keep America in the van in steam navigation, as it was in wood sail, would have been small compared with the number of wood and, later, iron steamers—for both domestic and foreign service—that such a policy of developing deep-sea steam navigation would have brought into existence in the United States. America had all the natural advantages that Britain possessed in iron ore and coal, and America's resources in metals and fuel were practically unlimited. Moreover, as the fifties advanced, timber for shipbuilding was rapidly becoming exhausted in the United States (considering both quality and economic transportation from forest to shipyard), so the time was ripe on this side of the Atlantic, as it was in Europe, to switch from wood sail to iron steam and, for ocean propulsion, from the paddle wheel to the screw.

The SCIENTIFIC AMERICAN, in its issue of October 7, 1848, commented on the difference between the development of steam navigation in Britain and in America. From the earliest days, according to this publication, England's practical experience "has been gained in building seagoing steamers," whereas "hitherto our steamboats have been built for short and comparatively unstormy voyages," and "navigation of the Atlantic is quite a different affair from that of the Hudson or the Erie." On May 16, 1857, an editorial in the same publication read:

> There are no less than thirty steamships now running between New York and different ports of Europe. These are regular steamers carrying passengers and merchandise, besides which there are a number of transient ones that carry cargo only. But ten of them are American vessels, while the Boston, Portland, and Philadelphia lines are entirely European. The Atlantic trade is departing from us. . . . The whole number of steamships engaged upon the routes between Philadelphia, New York, Boston, Portland, Halifax, and Quebec on this side of the Atlantic and the ports of Havre, Bremen, Hamburg, Southampton, Liverpool, and Glasgow on the other side is fifty-one. Of these, only seventeen have paddle wheels; all the others—thirty-four—are screw propellers with iron hulls. They are the most economical of steamships; their steam power is but small in proportion to their tonnage; they make very regular and quick passages, carry large cargoes, charge but little more freight than sailing vessels, and merchants prefer them for carrying goods. These are the steamers that are fast "routing out" our sailing craft in the Atlantic trade.

Three years later (March 31, 1860), the same technical periodical said:

> Today, nearly all the mail and passenger, besides a great deal of the goods, traffic is carried by foreign ships, the great majority of which are iron screw steamers. These facts are indisputable; how can we account for them but upon the theory that iron screw steamers are the cheapest and best for the traffic? . . . We have not a single new Atlantic steamship on the stocks, from one end of the country to the other, while in Great Britain there are 1,600 tons of new iron screw steamers building for the American trade.

As long as the SCIENTIFIC AMERICAN confined its remarks to statements of fact, it was on solid ground, but when it attacked American shipowners for conditions for which they were in no way responsible, it was shortsighted, superficial, and unjust in its censure. In 1857 it called on American shipping merchants "to exhibit more practical wisdom and enterprise" or they would "ultimately be vanquished in this contest," and in 1860 it exhorted them "to examine the question candidly for themselves, for," the editor said, "the Philistines are upon them." Why such tirades against American shipowners? It was the Congress and the government of the United States and the federal legislature and the administration that were directly and solely responsible for conditions, and it was these men, representatives of the people of the United States (and not the shipowners or even the shipbuilders), who should have been admonished. In 1845, Congress, after a belated start and eleven years behind Great Britain, passed its first mail subsidy bill, but it was not until two years later that legislation was enacted that caused Edward K. Collins, a successful transatlantic sailing packet owner and operator, to commence the building of a line of subsidized steam packets. These vessels, entering the service in 1850, not only were eminently successful but also beat all foreign competition in size, quality, and speed. Up to 1854, Congress gave a measure of protection to mail steamships, but after that time, its attitude rapidly underwent a change and became increasingly belligerent and hostile toward any plan of granting any measure of financial support to American steamships running in competition with highly subsidized British and other foreign lines.

Furthermore, at no time did the United States encourage its inventors in the realm of steam propulsion or do anything whatsoever to promote engine and boiler building, the working of its ore resources, the erection of rolling mills, or the production of iron plates and shapes. No assistance or support of any kind and no stimulation, direct or indirect, were given to workers in metal and the erection of iron shipbuilding plants, and when the SCIENTIFIC AMERICAN was chiding American shipowners for their backwardness and stupidity in not adopting the iron screw steamship, there was not a single iron shipbuilding yard in the Americas. In a report made to Congress in 1852, it was declared that, when the Collins liners were laid down in 1848, there were no machine shops in this country in which castings of the size required could be made. "It is not to be supposed that engines of such vast dimensions could have been constructed in a country where there were, as yet, no workshops adapted to the purpose as cheaply as in a country where every appliance of the kind already existed and where the prices of labor are proverbially low." In 1848 it was publicly stated that England had had the practical experience of thirty-six years in building seagoing steamers. This was somewhat of an exaggeration, but most of Britain's earliest steam vessels had to operate on the ocean. It has also been said that England was building iron ships in 1820. Whereas Britain built small vessels of iron in the twenties and thirties and the history of the art goes back to the eighteenth century, its first long-voyage iron ocean steamship was the screw-driven *Great Britain,* designed by Brunel for the Great Western Railway Company and built in 1843, and moderately substantial iron shipbuilding plants in England date back to 1835.

In 1852 the steamer *Victoria* was built of iron, from the design of Brunel and Scott Russell, for the Australian Royal Mail Steam Navigation Company. It was said that this vessel was modeled on "the wave line theory" and was intended to attain a speed of 10 knots. Contemporaries reported that "instead of the clumsy, ponderous hulls of British sailing vessels, one finds in the *Victoria* smoothness, gracefulness, and sweet lines." E. Keble Chatterton says: "It is, therefore, not altogether surprising that she won the £500 prize offered by the colonies for the fastest voyage to Australia, her time from Gravesend to Adelaide being 60 days, including two days' delay at St. Vincent."

In 1853 the large steamship *Himalaya* was built at Blackwall, London, for the Peninsular and Oriental Line. This vessel was built of iron and, it was claimed, made a record run to Gibraltar "at a speed of 13½ knots per hour." She was evidently promptly purchased by the British Government.

The mammoth steamship *Great Eastern* was built with long-distance voyages around the Cape of Good Hope to India or to Australia in mind. It was Brunel's idea that the steamer would carry a very large number of passengers and an enormous cargo all the way from Britain to Australia without having to coal anywhere on the voyage. Her design calls for a vessel 680 ft. long, 82 ft. 8 in. beam, and her tonnage is given at 18,915. She was propelled by both paddles and a screw propeller and was fitted with six masts and five funnels. Her construction began on May 1, 1854, at Millwall-on-the-Thames, but she was not launched until the last day of January 1858, the first attempt to persuade her to enter the water being unsuccessful. The difficulties of construction ruined her builders and original owners, but the vessel was sold to a new company for £160,000. The *Great Eastern* was never used for the service for which she was designed and was a financial failure from the start, although she was useful during the period 1865-1873 in laying the Atlantic submarine telegraph cables. This mammoth steamship, built far ahead of her times, was beached and finally broken up in 1888.

In the Boston DAILY TRAVELLER of August 31, 1857, L. W. Jenkins writes:

> The English have the advantage of us in regard to iron ships as well as wire rigging on account of the cheapness of material. Iron ships are increasing in number in England, and in many respects they are superior to wood, but they cannot be built here until iron becomes cheaper. An iron ship in England costs only about the same as a first-class wooden ship, but in the United States would probably cost three times as much as a wood-built ship. The depreciation of an iron ship is much less than one of wood, and when the iron vessel is worn out, the old material will go far toward paying for new. There is no one thing which we so much need as the ability to produce iron as cheaply as England. We have the crude materials in abundance, cropping out of the surface of the earth instead of being compelled to dig hundreds of feet deep for it, but we need the skill and the labor which is requisite.

The United States needed a sagacious and somewhat paternal form of government to perceive rightly and act effectively in regard to the use of its natural resources for the good of the nation. The political division in the country, culminating in the Civil War, killed the American deep-sea steam merchant marine in its infancy, stopped what would have become an apparent need with a natural demand for iron rolling mills and iron ship-fabricating plants to build iron (and steel) screw steamships, and caused the development of the marine machinery building industry to stop at a point where there was practically only one plant capable of building large marine steam engines (and that plant specialized in and evidently was restricted to the production of paddle-wheel machinery). The senators and congressmen of the South and of those states approaching a state of rebellion refused to appropriate funds that would either build ships of war or cause by subsidy contracts the building of powerful, fast, and sizable merchant steamers whose construction would have contributed to the prosperity of the seacoast states from Delaware east. Such vessels would have added great strength to the navy of the North in case war developed, a state of affairs that certain legislators, with steadily increasing candor (and threats), affirmed "was possible at no very distant date." The Civil War itself ruined American shipping, and although a temporary impetus was given to the construction of warships in the North, the war led to a cessation of merchant shipbuilding. It caused owners to sell and transfer their vessels to foreign flags, and it changed the currents of commerce, with the British taking advantage of every opportunity to promote their maritime interests at the expense of the United States.

Basil Lubbock, the British marine historian, in THE COLONIAL CLIPPERS, has written:

> It was the introduction of iron, as the chief material for the building of ships, that contributed more than anything else to the supremacy of the British mercantile marine. Iron killed the competition of our American cousins, who, as long as wood was the chief factor, were able to give us a hard fight as to which would lead the world in shipbuilding. Yes, it was the advent of iron, more than the north and south war, more than the sinkings of the *Alabama,* more than any slump in freights or foolish shipping legislation on the part of the United States, and more even than our adoption of free trade, which made the British nation the carriers of the world.
>
> Many people think . . . that iron also sounded the knell of the sailing ship; . . . yet sail continued to flourish for 50 years after the advent of iron. . . . It was the deterioration of the man before the mast which the advent of steam brought about, and the cutting of freights induced by coal.

the cry for bigger ships and more luxury, and also that soulless modern institution, the company manager, which drove sailing ships down and down in the trade of the world; these and the growing desire for mechanical speed, which have invaded almost every department of life, killed the windjammer.

That the screw-propelled steamer was making itself felt as early as 1855 in the transatlantic "ferry," notwithstanding the subsidized Cunard Line and British Government opposition to it and preference for side-wheelers at that time, is indicated by the fact that the various transatlantic steam packet lines then in operation were using steamers propelled as follows:

Line	Service	Number of Steamers: Side-wheeler	Number of Steamers: Screw
Cunard	New York-Liverpool	4	—
Cunard	Boston-Liverpool via Halifax	4	—
Collins	New York-Liverpool	4	—
Havre	New York-Havre	6	1
Bremen	New York-Bremen via Southampton	2	—
Scotch	New York-Glasgow	—	3
Cork	New York-London via Cork	—	2
Belgium	New York-Antwerp via Southampton	—	5
Philadelphia	Philadelphia-Liverpool	—	3

Total of 9 lines; 20 side-wheelers of 47,600 tons and 14 screw steamers of 30,500 tons.

Outside of the big subsidized British and American liners, the competitive merchant marine of Britain had taken up the iron screw-propelled steamer not only seriously but also enthusiastically, and in 1855 the first iron Cunard steamship, the *Persia,* a side-wheeler of 3,300 tons, appeared in the Liverpool-New York service, and Britain discontinued building large wooden steamships. Whereas the propeller drive increased rapidly in popularity when installed in iron hulls, the British Government-subsidized Cunard Line continued to build iron paddle steamships for its North Atlantic service until 1862, when the 3,871-ton brig-rigged two-funnel side-wheeler *Scotia* was placed in the run as "the last British transatlantic paddle steamship." The first liner operating on the North Atlantic to be fitted with compound engines was the *Italy* of 4,169 tons of the National Line, which entered the trade in 1870. Triple-expansion engines were first used in steamships running in the Atlantic "ferry" when they were fitted in the North German Lloyd Steamship Company's *Aller* of 5,381 tons, built by the Fairfield Shipbuilding Company at Glasgow in 1885. The first steel transatlantic steamer was the Allen liner *Buenos Ayrean* of 4,005 tons, built in 1879, and the first steel Cunarder and the first steel liner in the New York run was the *Servia,* which entered the Atlantic service in 1881. The Inman American Line steamships *City of Paris* and *City of New York,* each of 10,500 tons, introduced twin-screw propulsion on the North Atlantic in 1888, and the American-built *St. Louis* and *St. Paul,* constructed in 1895, were the first transatlantic liners to be fitted with quadruple-expansion engines.

The early transatlantic steamships were heavily canvased. The first steam vessel to be called an "Atlantic greyhound"—being built primarily for speed and the carrying of passengers and mail—was the British Guion liner *Arizona* of 5,164 tons, which appeared in the service in 1879. She lowered the eastbound passage record that year to 7 days 8 hours 11 minutes and the following year established a westbound record of 7 days 10 hours 47 minutes. The *Arizona* had four pole masts and a little fore-and-aft canvas; whereas the Cunard S.S. *Servia,* which followed her, carried yards and used her canvas quite a good deal on her crossings. It was not until 1888-1890 that steamships appeared with twin screws and pole masts, with no canvas, and the day of sail was absolutely over on the Atlantic "ferry." It took eleven years for the British to build iron steamships that were able to lower the time of an Atlantic crossing one day below that of an American wood paddle-wheel Collins liner, seventeen years before a passage was made in under eight days, thirty years to beat seven days, and thirty-seven years before the *City of Paris* (of 10,500 tons and over 20,000 I.H.P.) lowered the passage record each way to below six days.

"High and Holy Protection," Followed by the Cleavage of the Country and Congressional Repudiation of the Policy of Fostering Deep-Sea Steam Navigation

The registered steam tonnage of the United States engaged in the deep-sea carrying trade during the period 1847-1855 was as follows:

Year	Tonnage	Year	Tonnage	Year	Tonnage
1847	5,631	1850	44,942	1853	90,520
1848	16,068	1851	62,390	1854	95,036
1849	20,870	1852	79,704	1855	115,045

Starting far behind Britain, the United States was close at Britain's heels by 1851 (62,390 tons to Britain's 65,921 tons) and thereafter held its position abreast of England as long as Congress gave any measure of encouragement to building and operating steam packets. At the time of the loss of the *Arctic* and *Pacific,* it was generally agreed on both sides of the Atlantic by fair-minded travelers and observers that, "ship for ship, American steam vessels are very much superior to British ships." An historian writes, "In the early fifties, American steamships, as a rule, were newer and swifter than the British ships and better adapted to modern commercial requirements." The Collins New York-built steam packets outclassed the best steam vessels designed and built in Britain as much as the New York- and New England-built clippers outsailed and were superior to the best merchant sail that Britain could produce. Dr. David A. Wells, in OUR MERCHANT MARINE, says: "During the single year 1849-1850, we increased our ocean steam tonnage one hundred and thirteen per cent, and the seagoing qualities and performances of our vessels were so admirable that the Cunard company, which had then been in operation ten years, was obliged to bring out new ships to compete with them."

In 1845 and 1847, when Congress passed certain acts intended by subsidies to stimulate the forming of American steam packet mail lines, the politicians of the South and West were generally not antagonistic to the measures (because of the attitude of Britain in fostering foreign trade by steamship to the detriment of American merchant sail) but even acquiescent, with a few congressmen from outside of the northeastern maritime states even favorably articulate. Senators of Georgia, North Carolina, Tennessee, Michigan, and Illinois championed ocean mail subsidies, and Senator Bayard, of Delaware, in debating the subsidy to the Collins Line, said:

> I am willing to trust American skill and industry in competition with any people on the globe, when they stand nation to nation without government interference. But if the treasury of a foreign nation is poured into the lap of individuals for the purpose of destroying the interests of my country, or for building up a commercial marine at the expense of the commerce and prosperity of the United States, I, for one, will count no cost in countervailing such governmental action on the part of Great Britain or any foreign power.

Senator Jones, of Tennessee, referring to the Collins Line subsidy in 1852, said that he would regard it as a national misfortune if the enterprise should fail and that he was willing "to vote large and liberal allowances." Senator Shields, of Illinois, rightly asserted that it was impossible for American private enterprise to succeed against British enterprise "backed by the money and energy of the British Government." Still another western senator, representing constituents far from the Atlantic seaboard, eloquently urged that the Collins subsidy was "a question of protection—of high and important and holy protection—in the best sense of the term; the protection of our country, of our expatriated seamen, of our commerce, of our interests, of our honor, of our soil, of all that gives dignity and character to nations; protection against defeat, disgrace and dishonor."

Although some resentment was evident in the South and interior of the country away from the ocean, where maritime matters were not close enough to be understood, the southern seaboard in 1852 was definitely in favor of ship subsidies to protect and promote foreign trade. One of the many petitions made of the Thirty-second Congress (March 15, 1852) for increased subsidy payments to the Collins Line of transatlantic steam packets came from the merchants and shipping interests of the one-time very important port of Charleston, S. C., who made their request "not as residents of Charleston but as patriotic citizens of the United States." This was the rather general feeling in and the attitude of the country as a whole in 1852—the American merchant marine, at a period of infancy of steam navigation, must be fostered and protected by the United States Government so that it could live and develop in competition with the heavily government-subsidized steamship lines of Britain and other foreign powers. In 1853 a movement that gradually became organized sprang into existence for canceling steamship subsidies, a caustic tone of hostility toward the steamship interests was expressed by some of the country's legislators in Congress in 1853-1854 (which grew in intensity and bitterness as time advanced), and the prime target of a steadily increasing destructive criticism of ship subsidies from the South and parts of the West was the contract with the Collins Line. This quick change of attitude on the part of certain lawmakers of the land was due not to the steamship lines themselves but to those national political conditions that led, in 1861, from sectional vocal antagonism to armed hostilities and the Civil War. Winthrop L. Marvin, writing of this period, says:

> It was the grave misfortune of the American steam marine at this critical period to be drawn into the maelstrom of sectional strife. The slavery controversy in the early fifties was becoming more and more the overmastering element in national politics. It so happened that the merchant shipping of the United States, and especially the steam shipping, was owned chiefly in New England and New York, where the antislavery agitation was most vehement. Moreover, the subsidized mail steamers all sailed from northern ports except a line from Charleston to the West Indies. It was a plausible argument that the entire country was contributing to the support of an interest by which only the northern seacoast directly profited. [The fact that the Collins Line subsidy had operated to lower transatlantic freight rates from $36 to $19 per ton, thus benefiting the entire nation, was intentionally ignored by partisan critics.] Besides, . . . these great, swift, strong mail steamers would be a formidable addition to the sea power of the North if the unhappy quarrel between the states should ever drift on to the arbitrament of war.

It is of interest to note that the expense of a navy always worried southern senators, congressmen, and politicians from the days of Jefferson, with his "little navy" and a "democratic navy-solely-for-defense" ideas, down to the time of an armed conflict between the maritime North (with New England, New York, and the Delaware) and the "plantation" South, which owned practically no shipping. In 1847, when Congress was asked to appropriate funds to build ten war vessels, it felt that an economic solution was found by compromise when it authorized contracts for the building of only four steam warships (the *Susquehanna, Powhatan, Saranac,* and *San Jacinto*), but arranged so that several steam merchant vessels would be built and subsidized to carry mail, for "these vessels will be built under the supervision of the Navy Department and will be quickly convertible into effective war vessels if needed; meanwhile, they will be engaged in peaceful commercial pursuits, and the country will be freed of the expense of maintaining and operating them except for a relatively small sum that will be paid for valuable service rendered in carrying the mails [passengers and express goods] with dispatch." Congress had been fretting since the early days of the republic about spending money for the building of naval vessels "that were a constant and great item of expense and subject to losses by catastrophe in times of peace." President Polk (in office 1845-1849), a Democrat and a southerner, in his message to Congress referring to the Ocean Mail Law of 1845 and the supplementary law of 1847, said:

> The enlightened policy by which a rapid communication with the various distant parts of the world is established, by means of American-built steamers, would find an ample reward in the increase

of our commerce, and in making our country and its resources more favorably known abroad; but the national advantage is still greater—of having our naval officers made familiar with steam navigation, and of having the privilege of taking the ships already equipped for immediate service at a moment's notice, and will be cheaply purchased by the compensation to be paid for the transportation of the mail, over and above the postage received. A just national pride, no less than our commercial interests, would seem to favor the policy of augmenting the number of this description of vessels.

As early as 1841 (i.e., four years before Congress acted favorably in the matter, but two years after the British Government had made a contract with Samuel Cunard to found a transatlantic steam packet mail service and seven years after the British had subsidized their first steam packet lines running to continental ports), Senator Thomas B. King, of Georgia, another southern Democrat, had urged an annual appropriation of a million dollars for the rapid carrying of mails and, prior to the enactment of the 1845 ocean mail legislation, had emphasized the ambitious acts of the British aimed at monopolizing deep-sea trade. He also laid special stress upon the naval phase of the subject, saying:

This movement shows clearly that the time has arrived when we must decide whether we will yield this essential branch of navigation, and this indirect means of extending our naval armaments, to our great commercial rival or whether we shall promptly extend to our enterprising merchants the necessary means to enable them to bring American energy, enterprise and skill into successful competition with British sagacity and capital. Of all the lines of sailing packets which cross the Atlantic, not one is owned in Europe, and it is not to be doubted that American merchants, properly encouraged, will assuredly excel in steamships as they have in sailing vessels; and when we reflect that this may be accomplished to the mutual advantage and advancement of our commercial and military marine, it would seem that no statesman ought to hesitate for a moment to give his support to a measure which is demanded alike by prudence and the necessities of our position.

Here again a southerner stressed the naval, or marine military, phase of government subsidies for specially built, fast, and strong seagoing merchant steamships such as the Collins Line put in transatlantic service in 1850. Southern statesmen in the forties were generally favorable to the idea of keeping the Stars and Stripes in the vanguard of the flags of all nations engaged in commerce on the Seven Seas. The change in the sentiment of Congress in regard to the encouragement and support of deep-sea steam mail packets within a short term of years was as tremendous as, to a superficial observer, it seemed surprising. In 1845-1847, the southern and interior states led in the advocacy of marine development and a protected nationalism, with independence of any and all foreign powers and a desired United States commercial leadership on the Seven Seas. In 1852 it was generally felt that as a nation the United States could not afford to let Britain, with government-subsidized steamships, organize, operate, and enjoy arrogant monopoly of the world's trade routes. A superior Atlantic steam packet service was deemed to be worth as much to the United States as an inferior steam mail service was worth to Britain. From 1853 on, what had been an unimportant minority in Congress opposed to ship subsidies grew rapidly and became more sinister. The threat of possible adverse legislation stopped the growth of the American deep-sea steam navigation, for shipowners would not undertake new commitments in that field when they saw an almost solid South, backed by much of the agricultural West, assailing the ocean mail appropriations with increasing truculency and political power. In 1856, because of the hostile pressure of this group, Congress reduced the Collins Line subsidy from $858,000 to $385,000, withholding $473,000 a year from a line that had put the United States in the lead in mercantile marine steam navigation; that had launched a new and bigger steamer—the *Adriatic*—on April 7, 1855, which was designed to be the queen of the seas and fully capable under Collins' unrestricted management of proving her right to the title; that had been patriotically planned and energetically operated for several years with the glory of the United States flag its prime actuating thought; and that had never paid its stockholders a dividend. Certainly no one could accuse the Collins Line of profiteering or the owners of the steamship company or its vessels of lining their pockets with United States subsidies.

The new crack Collins liner had not been in the water a month before a bill was introduced in Congress "abolishing the present ocean steam service." With the expressed attitude of Congress toward the Collins Line and toward a policy of eliminating (after certain contracts in existence expired) all subsidies for steamship service, the Civil War between the states had started, not as in 1861 by the batteries of Charleston firing on the northern merchant steamer *Star of the West* but as a fratricidal and sectional war of conflicting political and economic ideas, with the South attacking the ocean mail fleet and being determined to destroy it because it was owned and manned by northerners. The fact was conspicuously in the minds of many of the legislators of the South that the mercantile steamship fleet of the country would be available for use by the navy of the North if the slavery question were not soon settled to the entire satisfaction of the South and if it should become necessary, as many southerners predicted, to resort to arms. After the loss of the *Arctic* and *Pacific,* it is true that the mail service of the Collins Line was detrimentally affected temporarily, but the *Atlantic* and *Baltic* were kept in operation, the larger and still faster *Adriatic* had been launched before the catastrophe to the *Pacific,* and Collins, by leasing vessels, made an heroic attempt to comply with the terms of his contract—and succeeded as far as the resources of the line and the attacks of the U. S. Government would permit. If the Collins Line had been under the British flag, the company would have been helped financially and in every other possible and practical way during the period of emergency; but at the very time that the Collins Line required paternal, sympathetic help and substantial encouragement, not only that company—then in temporarily most unfortunate circumstances—but also the entire deep-sea steam navigation of the United States received a solar plexus blow, below the belt, delivered by a discordant, shortsighted, and, in substance, an essentially unpatriotic Congress, from which American steam navigation never recovered and, moreover, was never given a chance to recover.

The attitude of Congress toward the young American deep-sea steam merchant marine, which in the first half of the fifties had caught up in tonnage with the British in spite of the fact that they had had a ten-year start of the United States, is reflected in the following depressing record. From 1848—the year the Cunard Line entered the New York service—to 1855, the tonnage of American steamships registered for deep-sea trade increased over sevenfold (from 16,068 tons to 115,045 tons, a gain of 98,977 tons in seven years, or an average of 14,140 tons per year), but fell off rapidly during the next three years as follows:

Year	Tonnage	Year	Tonnage
1855	115,045	1857	86,873
1856	89,715	1858	78,027

This decline of 37,018 tons in three years (or an average of 12,339 tons per year) was not a reduction in new tonnage, but a reduction in the tonnage of all vessels—old and new—afloat and registered for service.

In the years when the United States withdrew protection and support from its steam merchant marine and "left it to perish," Britain and other aspiring marine powers following its example steadily increased their ship subventions and extended their subsidized steamship lines over the trade routes of the globe. According to the official post-office report, Britain paid $3,699,853 to its ocean steamship lines in its fiscal year ending 1851 and $4,537,223 in 1861. France, in 1858, "following the British practice of marine protectionism," offered $620,000 a year for twenty-six steamship packet voyages between Havre and New York ($24,000 a voyage), $940,000 a year for steam service to Brazil, and $1,300,000 a year for a steamship line to the West Indies and Mexico. Germany, about the same time, subsidized the North German Lloyd to operate a line of steam vessels in the American service.

Henry Hall, in his report to the United States Government, said:

By 1857, there were regularly employed in the British steam mail service, under pay from the government, 121 large vessels, registering 140,000 tons, carrying 8,140 men as officers and crew and receiving $5,335,000 a year as compensation for carrying the mails, while in her whole merchant service there were 1,670 steam vessels, registering 666,000 tons. Besides the liberal subsidies which were paid, the British government aided in the development of steam by ordering the construction of a multitude of war vessels—a policy which enabled the builders of machinery and vessels to prepare an expensive plant and train up a large force of competent engineers and mechanics. This was an advantage, as it created the facilities for building the heaviest class of steam shipping and solved many problems in regard to propelling power with which Americans afterwards had to contend.

In the late forties and early fifties, legislators in Congress had declared with an almost unanimous voice that no sacrifice could be too great "to protect the American ship and the American sailor from the aggressive designs of our commercial rival and ancient enemy"; but in 1858 a group of southern senators, who were destined soon to become very famous, led the political battle against the northern shipping interests and the principle of national protection and government encouragement to our maritime interests—given in order that American vessels could compete upon fairly even terms with the steamers of foreign powers engaged in deep-sea trade. Representative of the newly developed attitude of the group of southern legislators, rapidly becoming more numerous and articulate, were the words of Senator Jefferson Davis, of Mississippi, who declared on June 9, 1858: "I see no reason why, if we can get our mails carried in British vessels across the Atlantic, we should establish a line of American vessels merely that we may compete with them in a race across the Atlantic." On the same day, Senator Robert Toombs, in debate, said: "I would as soon have my letters carried in British as in American bottoms, and I would prefer that they should carry them if they did it cheaper." Senators Hunter and Mason of Virginia, Mallory of Florida, and Benjamin of Louisiana talked in a similar vein, and all of these men were very prominent leaders in the Confederacy formed by the seceding southern states in 1861. Davis became president; Hunter, secretary of state (a position held later by Toombs); Benjamin, attorney general; Mallory, secretary of the navy; and Mason, commissioner to England.

The economic advantages—direct and indirect—to the country of subsidized steam packet lines handling mail, passengers, and freight were ignored. The southern planters and legislators were quite willing to have British ships rather than northern-owned American vessels transport their cotton and other agricultural products across the seas, but they, seemingly with intent, disregarded the historic fact that, when British-subsidized vessels obtained a monopoly in any trade, the shippers and passengers using the ships were made to pay not only the government subsidy but also a heavy price for the service rendered and to a degree that in the forties was described as "all the traffic will stand." The South chose to forget that the Cunard Line, with no steam packet competition in the New York-Liverpool run, made shippers pay a transatlantic freight rate of £7½ per ton and that the entrance of the subsidized line of Collins steam packets into the trade brought this rate down to £4 a ton (or nearly one-half). This reduction in freight expense benefited not the northern shipowners, for they lost income by it, but the country as a whole and particularly the South, which shipped and received such a large part of its goods through New York.

It should be mentioned in passing that the opposition to government subsidy of steamships and particularly the antagonism to payments made the Collins Line did not entirely lodge in the southern slave and inland states, for the owners of sailing packets quite naturally objected to the subsidizing by Congress of a line that ran in competition with their old, established, and highly considered packet services. Moreover, E. K. Collins, who had organized the New York-Liverpool Dramatic Line of superior, large, and fast sailing packets and owned —or controlled—and managed this famous line from 1836 to 1848 (and had been so successful that he was acknowledged as the outstanding and most capable packet operator in New York), was considered by the owners of rival lines somewhat of a renegade. Not only New York sailing packet owners but also clipper shipowners of New York, Boston, and Baltimore and others interested in sailing ship trading to foreign ports objected, as individuals and as owners of private capital, to any favors being granted to steam navigation that would increase competition and make their operations less profitable. The influence of these objecting owners of sailing ships was, however, very slight politically, and their attiude was a natural and expected one.

In 1858 the British Government was paying the Cunard Line a subsidy of $866,700 (the amount of government financial help to the line was said to be $900,000 a year). In 1856 the Collins Line received only $19,250 per round voyage, which on the basis of twenty voyages per year was $385,000, or about 43 per cent of the amount paid the Cunard Line, and the U. S. Government served notice that it was the definite intent to discontinue such payments entirely as soon as it was legally possible to do so. By this act and expressed attitude, the Congress of the United States deliberately and inevitably destroyed the American steam mercantile marine in all deep-sea competitive foreign trade and threw the entire Atlantic postal service into the hands of the British. Marvin, in THE AMERICAN MERCHANT MARINE, has said:

> This startling reversal of a great national policy that had been entered upon with such high patriotic motives by a united country eleven years before was part of the heavy price which the United States has had to pay for the national crime of Negro slavery. But for the rise of the embittering controversy between the states, which smothered for a time the old sense of nationality, the protection to American steamship lines which President Polk and a democratic Congress initiated would not have been abandoned in the very crisis of the struggle between America and Britain. Within three years, the southern men who were chiefly instrumental in bringing about the downfall of the American merchant marine had left the Senate chamber forever and had sworn a new allegiance and were living beneath a new flag.

These southern legislators had dealt their country a terrific blow, from which it never recovered. The slavery quarrel, obscuring all else, had hopelessly estranged the North and the South, and the shortsighted, bigoted politicians of the South were content to see in the subsidy protection of northern steamships only the "aggrandizement of the northern states [and the increase in their marine military power], where the antislavery sentiment was strongest, at the expense of the agricultural South."

The "Wood Paddlers" of the Pacific Mail Lines in the San Francisco Oriental Service, 1867-1879

At the close of the Civil War, the United States, looking toward the west, sought to improve American transport relations with Japan and China and supplement the services provided by the New York-San Francisco via Panama steamships and the Union Pacific Railroad. The development of a great trade with the Orient through the port of San Francisco was considered possible, so Congress passed an act in 1865 authorizing subsidies to be paid for an American transpacific steamship line that would furnish the service desired. The only response to the advertisement of the postmaster general for bids was that of the Pacific Mail Steamship Company, which was well established on the Pacific Coast because of the subsidized service that it had enjoyed (1848-1858) between Panama and northwestern coast ports (primarily San Francisco). The transpacific contract, dated August 28, 1865, and which ran for ten years, called for a monthly service with 3,000-ton steamers between San Francisco and the Orient via Hawaii, for which the sum of $500,000 would be paid by the government annually. It has been said: "Such a service was bound to be costly because of the great distances involved, namely, 1,990 miles from San Francisco to Hawaii and 3,478 miles from there to Yokohama, and of the expense of maintaining fuel depots; but the government felt that the benefits would eventually justify the expenditure."

The Pacific Mail Steamship Company in the sixties and seventies did not have the energetic, resourceful management that it had enjoyed in 1847. Evidently, conditions in the shipyards and engineering shops in New York had deteriorated rather than improved as a result of the Civil War, money was tight, credit conditions bad, and skilled mechanics scarce, all of which accounted for delays in the construction of the new ships, and it was late 1869 before the required four steamers were all engaged in the transpacific service. A contract for one vessel was placed with W. H. Webb and one with Henry Steers, both of New York, in late 1865, followed much later by contracts to Steers to build the required third and fourth vessels; so the deliveries of the steamers were greatly spread out, and the last of the quartet (the *America*) did not leave New York for the Pacific Coast until a little over two years after the first of the fleet (the *Great Republic*) had started on her voyage to San Francisco.

The following are the dimensions and certain particulars of the first four wooden paddle-wheel steamships built for the transpacific trade and the Pacific Mail Steamship Company:

Name of steamer	GREAT REPUBLIC	CELESTIAL EMPIRE Renamed CHINA	NIPHON Renamed JAPAN	AMERICA
Date of launching	Nov. 8, 1866	Dec. 8, 1866	Sept. 17, 1867	July 23, 1868
Builder	Henry Steers, Greenpoint, L. I., New York	W. H. Webb, New York	Henry Steers, Greenpoint, L. I., New York	Henry Steers, Greenpoint, L. I., New York
Registered tonnage—tons	3,882	3,836	4,352	4,454
Length over-all—feet	380	380	383	383
Registered length—feet	360.3	360	362	363
Extreme beam—feet	49	49	50.5	50.5
Registered beam—feet	47.4	47.4	49	49.3
Registered depth of hold—feet	22.8	22.9	23	23.3
Load draft—feet	20.8	20.4	20	20
Cleared New York	May 19, 1867	July 1, 1867	Apr. 11, 1868	May 28, 1869

From the first, the difficulty of the Pacific Mail line was length of run and coal consumption, but we are told that "in order to reduce expense and speed up the service, the company's ships were soon placed on the direct 4,800-mile route from San Francisco to Yokohama, thus saving three days westbound and four days eastbound." An Hawaiian service was established under the act of 1867 (to replace that formerly provided by the Pacific Mail company), which involved a subsidy payment by the government of $75,000 a year under a ten-year contract. In order to perform the required service, the Pacific Mail line acquired the S.S. *Colorado* of 3,357 tons (length 340 ft., beam 45.6 ft., depth 22.6 ft.), built by Webb, of New York, in 1864, and the *S. S. Alaska of* 4,012 tons (length 346 ft., beam 47.6 ft., depth 23.5 ft.), built by Steers, of New York, in 1868. The costs of the company's six transpacific "wood paddlers," all of which were of the same general type, as shown in the statement of the Pacific Mail Steamship Company of May 1, 1871, were as follows:

Name of Vessel	Cost	Name of Vessel	Cost	Name of Vessel	Cost
GREAT REPUBLIC	$1,058,235	JAPAN	$1,049,435	ALASKA	$964,138
CHINA	1,006,282	AMERICA	1,017,942	COLORADO	750,000

The total cost of the fleet of six steamers, as stated, was $5,846,033 and the total tonnage, 23,893 tons; the cost, therefore, represented about $245 per ton. That these steamships, with a tonnage ranging from 3,357 to 4,454 and averaging 3,982 tons, were large for their day is evident from a comparison of their size with that of contemporary vessels in the leading British mail lines, as follows:

Name of Line	Name of Vessel	Year Built	Ton-nage	Type of Propul-sion	Name of Line	Name of Vessel	Year Built	Ton-nage	Type of Propul-sion
Cunard	SCOTIA	1862	3,871	Paddle	Royal Mail	RHONE	1865	2,738	Screw
Cunard	RUSSIA	1867	2,959	Screw	Royal Mail	DANUBE	1865	2,000	Paddle
Peninsular and Oriental	MONGOLIA	1865	2,833	Screw	Royal Mail	NEVA	1868	3,025	Screw
Peninsular and Oriental	DECCAN	1868	3,429	Screw	Royal Mail	NILE	1868	3,039	Screw

All of the British steamships mentioned were built of iron, and six out of eight (75 per cent) had screw propulsion.

Only one of the four wood steamships originally ordered by the Pacific Mail Steamship Company for its oriental service was built by W. H. Webb, but this vessel, the *China,* had four transverse bulkheads forming five watertight compartments; the other three vessels, built by Henry Steers, had only two such bulkheads. All of the six liners of this impressive fleet of "wood paddlers" were fitted with the same size and type of walking beam engines built by the Novelty Iron Works, of New York, and no other firm bid on the construction of the machinery. Each of these engines consisted of a single cylinder of 105 in. diameter and 12 ft. stroke, rated at 1,500 horsepower, and driving paddle wheels 40 ft. in diameter. There were four horizontal tubular boilers operating at 20 lbs. pressure, and the weight of the machinery was stated at 880 tons. The vessels, which were capable of crossing the Pacific from San Francisco to Yokohama or return in 17 days at a speed of about 12 knots per hour, were operated on a 23-day schedule and at a limited sea speed of 9½ knots per hour "to reduce the coal consumption on the long 5,000-nautical-mile course" and permit of carrying the available quantities of paying freight. Apparently, at this reduced speed, the steamers burned about forty-five tons of coal per day, or around a thousand tons on a single transpacific crossing. The *America,* however, performed an amazing feat in steaming from New York to Hong Kong around the Cape of Good Hope without refueling; she left New York with 2,160 tons of coal aboard in her bunkers and lower holds and burned 1,936 tons. During the first fourteen days out of New York, she burned only 26 tons of coal per day and steamed 2,520 nautical miles, or about 7 miles per ton of coal.

The building of such large mail steamers of wood and the fitting of them with paddle wheels as late as 1866-1868 naturally caused considerable criticism of the Pacific Mail line. The *Scotia* of the Cunard Line (which had been long wedded to the paddle wheel) was that line's last vessel with this type of propulsion and was built in 1862, and the last side-wheeler of the Royal Mail Steam Packet Company, the *Danube* (a relatively small steamer), was built in 1865; both were, of course, constructed of iron.

The reasons for the Pacific Mail's persistency in the use of wooden paddle steamships were: (1) There were no iron shipyards and no qualified, properly equipped machine shops in the United States that could build four 4,000-ton iron screw steamships for the 5,000-mile transpacific run; (2) the Novelty Iron Works, which was a large stockholder of the Pacific Mail Steamship Company, had developed, through the years, what was said to be a satisfactory design for side-wheel machinery "that for reliability of service, particularly in a long-distance trade, could not be equaled by any other engine shop or by any other type of propulsion." Moreover, Allan McLane, president of the Pacific Mail, maintained that, notwithstanding the development and trend abroad, the members of his company "were perfectly satisfied with such wooden hulls as they were building and with beam engines," and he even argued that the great cargo capacity and comparatively inexpensive construction of the company's big new liners made them "more economical than would be iron screw steamers built in the United States." John H. Kemble says that the Pacific Mail paddlers "received almost universal praise for their cleanliness and efficiency as well as their seagoing qualities," and an experienced traveler, after voyaging on the vessels, wrote, "There are no steamers afloat which for elegance, comfort, and spaciousness compare with those of this line." The record of the steamships is amazing. Wood hulls 380 ft. long and 50 ft. beam, operating with heavy machinery on one of the world's longest trade routes and traversing, at times, seas in which hurricanes and dreaded, violent typhoons were encountered, never showed any signs of structural weakness.

The 4,012-ton wood paddle steamship *Alaska* (practically a sister of the Pacific Mail's original quartet of San Francisco-Japan-China liners), which was launched at the Steers (Greenpoint) yard four months before the *America* and which entered the Pacific Mail transpacific service as a regular liner in 1871, was caught at the dock in Hong Kong September 22, 1874, by a terrific typhoon that snapped her mooring lines. The vessel, helpless with her shaft out, was blown across the bay to the opposite shore, following which stranding and pounding, the gale shifted suddenly, and the vessel was driven back to the Aberdeen side, where she struck broadside on the rocks and was hammered savagely by the seas. It is said that the "staunch hull went through a terrific pounding in the night without damage." In the morning, the vessel was "hard and fast aground with her port bilge exposed at low tide." Twelve hundred tons of coal and stores were taken out of her, and she was floated by the help of pontoons. In an incredibly short time, the battered wood steamship was in service again, for she steamed through the Golden Gate with mail, passengers, and cargo from the Orient on February 16, 1875, or only four months and twenty-four days after her experience with the destructive typhoon. It is apparent that a wood hull that could stand such a severe test must have been unusually well built, and British marine surveyors prejudiced in favor of iron reluctantly admitted that "no iron vessel could have stood the abuse that the *Alaska* was subjected to and come out of it so well and with such a small repair bill and short time of lay-up for reconditioning." The *Alaska* ran in the transpacific service in competition with iron screw steamers until 1879, which was the last year of transpacific sailings of the "wood paddlers," and she was serving as a store ship at Acapulco, Mexico, in 1885.

Whereas the "giant Pacific Mail wood paddlers" for thirteen years plied back and forth across the wide Pacific, braved all seas, and successfully withstood such abuse as the pounding of the *Alaska* on rocks during a terrific typhoon, two of their number proved vulnerable to the attacks of fire. The *America* was destroyed by fire in the dead of night on August 24-25, 1872, when fast to her mooring buoy in Yokohama Harbor; the fire was evidently of incendiary origin, but 59 lives were lost (53 of them Chinese steerage). The *Japan* was burned at sea, also at night, December 17-18, 1874, en route to Hong Kong from Yokohama. When 175 miles from her destination, a fire in her coal bunkers, due to spontaneous combustion in coal put aboard wet, got out of hand, burned furiously, and totally destroyed the ship, with a loss of 415 lives (391 of them Chinese steerage), $328,508 in specie, and 620 tons of cargo.

The First Iron Screw Steamers in the Pacific and Early American-built Vessels of This Type

In June 1872, Congress authorized an extension of the transpacific mail service to give two sailings per month and duplicate the existing service except that the additional sailings, to obtain the further subsidy offered of $500,000 a year, should be made by American-built iron screw steamers of at least 4,000 tons, officered by American citizens and fitted for possible naval use. The Pacific Mail was the only bidder for the new service and entered into a contract to give two sailings a month after October 1, 1873, for which service the government was to pay a subsidy of a million dollars a year. The stipulated time for the new contract to take effect, with half the vessels in the service being large American-built iron screw steamships, was impossible of attainment and must have been known to be so when the contract was negotiated. The required iron-hulled screw vessels were naturally slow in making their appearance, but in 1872 the company had increased its fleet of wood paddle-wheel steamships in the transpacific service to six, the before-mentioned *Alaska* of 4,012 tons and the *Colorado* of 3,357 tons (a vessel that had originated the service) having been added to the "big new four packets" directly built for the new service in harmony with the terms of the government contract. However, these four big steamships were of 16,524 tons, or 37.7 per cent more than the 12,000 tons that the company was obligated to build and place in the service; the tonnage of the sextet of "fine new wood paddlers," built in 1864-1868, aggregated 23,893 tons, or 99.1 per cent more than (twice as much as) the steamship company had contracted to place in the San Francisco oriental run in order to be entitled to the stated original subsidy of half a million dollars a year.

Undoubtedly, the management of the Pacific Mail line knew that in 1872 there was no ship, marine engine, and boiler building plant available in the United States to design and build satisfactorily and economically, with dispatch, the kind and size of transpacific steamships desired; for the operating company felt that 4,000-ton iron screw steamers with a speed of 13 knots per hour were needed for the run and that "compound engines with high-pressure boilers were necessary in order to obtain the required low coal consumption" per day and per mile. While being taunted for slowness in taking definite steps to comply with the terms of the contract and charged with deliberate procrastination, the company ran into difficulties and was accused of internal graft, the waste of funds, extensive use of propaganda, etc. The use of oriental crews affected its prestige and political standing, but the charge of "corrupt lobbying" was what really hurt, and it was claimed that the president of the company had expended "between $565,000 and $900,000 for bribes and fees." The Pacific Mail Steamship Company was accused of operating extravagantly, void of good business procedure and sound financing and auditing practice. On March 3, 1875, the contract made in June 1872 was repealed by the government and the subsidy placed at the old figure of $500,000 per year, although at that time chartered iron steamers were being used in the service and two big steamships being built in a new American yard for the transpacific run were nearing completion. Furthermore, the original contract was not renewed when it expired shortly thereafter, but the company could not have been so horribly inefficient, with its record of good and reliable service, and even though unable to pay dividends for many years, it managed not only to survive but also to expand. However, in 1882, out of the twenty steamships that it operated (most of them modern), "only two were in the oriental service," nearly all of the rest being employed in the coastwise and protected trades between San Francisco and Panama or between New York and Colon.

The action of Congress in 1874-1875 in regard to the Pacific Mail subsidy contract was childish as well as void of both principle and national dignity. The country was set by the ears by charges that bribery had played a part in getting the Congress to vote the Pacific Mail grant of 1872. As a result of the ensuing scandal, a sensitive Congress of politicians rescinded the subsidy as passed and two years afterwards—still smarting from indignities and insinuations of graft and considering itself primarily and not the country—abandoned the postal subsidy system upon the expiration of the Pacific Mail company's contract of 1865. Meloney well says:

Instead of hamstringing the reputation of the guilty pork-barrelers and jailing them and making the Pacific Mail company live up to its contract [as far as was humanly possible considering national conditions and available or obtainable building facilities in the United States], we acted like banderlogs. What we did was as foolish as it would have been for Britain to have abandoned India simply because she had found it necessary to indict Warren Hastings [as guilty of "peculation," who later had to defend himself for seven years against the charge of "high crimes and misdemeanours" and who, in 1795, was acquitted, his reputation clear, but ruined in fortune]. Ever since that time ship subsidy, no matter what its garb, has been to American politics what the wraith of Elsinore is to Hamlet.

However, the Pacific Mail subsidy scandal of 1874-1875 is a poor excuse for the unpatriotic actions of the Congresses of the United States throughout the 1890's and early twentieth century. Many members of the House of Representatives, on four different occasions, were influenced by organized foreign propaganda, lobbying, etc., and either rejected or refused to act upon sound merchant marine tonnage bounty bills that had passed the Senate and that were greatly needed to encourage United States shipping and shipbuilding and put American ships once more on the trade routes of the Seven Seas. Whereas graft of any kind—in crude cash or in camouflaged and non-negotiable forms—is damnable (as is the swinging of votes by any kind of social or economic influence as well as by party dictation), the question arises as to why it was deemed less objectionable by congressmen to be "influenced" by the hired lobbyists of foreign steamship companies than by the maritime interests of their own country who were working for the well-being and prestige of the United States.

In 1873 the first iron screw steamers operated under the Pacific Mail and the United States flags in the transpacific service, the line chartering the British vessels *MacGregor* and *Quong Se.* The following year, two additional leased British screw steamers (*Vancouver* and *Vasco Da Gama*) and the pioneer Pacific Mail iron screw steamers *Granada* and *Colima* made their appearance in this service. It was 1875 before the steamships *City of Peking* and *City of Tokio,* ordered by the Pacific Mail line to comply with the government requirements as stipulated in the post office appropriation act of June 1, 1872 (and required by the subsidy contract to be in service by October 1, 1873), had been completed and placed in the run.

In the early seventies, there were only three iron shipbuilding plants in the United States that could build 2,000-ton iron screw merchant steamers and only one (Roach's new yard built on the Delaware in 1872-1873) that was equipped to construct steamers up to 5,000 tons. These three iron shipbuilding companies, all located on the Delaware, were:

		Largest Iron Screw Steamers Built Prior to 1882		
Name of Firm	Location of Yard	Name	Tonnage	Year Built
John Roach & Son	Chester, Pa.	CITY OF PEKING	5,079	1874
		CITY OF TOKIO	5,079	1874
		CITY OF RIO DE JANEIRO	3,548	1878
		CITY OF PARA	3,532	1878
		CITY OF SAN FRANCISCO	3,019	1875
		CITY OF NEW YORK	3,019	1875
		CITY OF SYDNEY	3,017	1875
		COLIMA	2,906	1873
		LOUISIANA	2,840	1880
		COLON	2,714	1873
Harlan & Hollingsworth Company	Wilmington, Del.	EXCELSIOR	3,264	1882
		GRANADA	3,000	1872
		ACAPULCO	3,000	1872
William Cramp & Sons	Philadelphia, Pa.	OHIO	3,101	1873
		INDIANA	3,101	1873
		ILLINOIS	3,101	1873
		PENNSYLVANIA	3,101	1873
		CHALMETTE	2,983	1880

Henry Hall, in his report to the government on the shipbuilding industry of the United States, dated November 30, 1882, stated that at that time there were only thirteen American steam vessels "of more than 3,000 tons register." Of the thirteen vessels mentioned by him, ten are listed above, and three were wooden steam vessels, two being the transpacific wood paddlers *China* and *Alaska,* before mentioned, and the third was the San Francisco Bay paddle-wheel transfer boat *Solano* of 3,547 tons. Apparently, Hall omitted the *Excelsior* of 3,264 tons, which continued to operate until the first World War of the twentieth century, and he makes no mention of the *City of San Francisco* (3,019 tons) and the *Granada* and the *Acapulco*, each of approximately 3,000 tons.

The plant of John Roach & Son at Chester, Pa., which represented an investment of about a million dollars, contracted, as soon as it was equipped to handle the work, to build the two 5,000-ton iron screw steamships for the Pacific Mail line. In its first year of operation (1873), it built six iron steam vessels—four screw and two side-wheelers—aggregating 10,209 tons, but two vessels built for the Pacific Mail (*Colima* and *Colon*) totaled 5,620 tons, or 55 per cent of this tonnage. The following year, this firm went boldly forward and built for the Pacific Mail two large transpacific liners, which were each 64 per cent larger than the four transatlantic liners built by the Cramps in 1873 and held for some time the record of being the largest vessels built or owned in America. A description of these early American iron single-screw ocean-going steamers, whose appearance in deep-sea trade was delayed about twenty years because of domestic politico-economic conditions, is of interest:

Vessels	CITY OF PEKING and CITY OF TOKIO	CITY OF RIO DE JANEIRO and CITY OF PARA	OHIO, INDIANA, ILLINOIS, and PENNSYLVANIA	CITY OF SAN FRANCISCO, CITY OF NEW YORK, and CITY OF SYDNEY	GRANADA and ACAPULCO	COLIMA and COLON
Builder	Roach	Roach	Cramp	Roach	Harlan & Hollingsworth	Roach
Year built	1874	1878	1873	1875	1872	1873
Registered tonnage	5,079	3,548; 3,532	3,101	3,019	3,000	2,906; 2,714
Length—feet	419.0	368.5	335.0 (over-all)	352.0	330.0	312; 300
Beam—feet	47.3	38.4	43.0	40.0	39.0	40.0
Depth—feet	36.1	28.6	35.0	29.0	28.0	29.2
Engine—type	Compound	Compound	Compound	Compound	Simple	Compound
Diameter of cylinders—inches	51 and 88	42½ and 74½	57 and 90	51 and 88	54	51 and 88
Stroke—inches	54	60	48	60	60	42
Diameter of screw propeller—feet	20.25	16	16	20	16	16.25

With the hope that Congress would give high-class American iron screw steamships operating regularly in foreign trade some reasonable protection, a group of Pennsylvania capitalists formed the American Steamship Company in 1871 and decided to establish a regular Philadelphia-Liverpool steam packet service and build "four first-class steamships to be superior in sea speed, comfort and other desirable qualities to any foreign steamships then in service." The contract for the design and construction of these vessels was placed with the William Cramp & Sons company, of Philadelphia. They were named the *Ohio, Indiana, Illinois,* and *Pennsylvania* and became the pioneer steamers of what was popularly known as the "American Line." Augustus C. Buell has written: "That these ships were designed with the highest degree of ability and constructed with the utmost skill is sufficiently attested by the fact that they are all in serviceable condition at this writing (1903) and thirty years old. These ships broke the record in speed, which was held by the *City of Brussels,* and consumed less than half of the coal in doing it."

Buell also says that the Lynch Bill, introduced in Congress on February 17, 1870, was the pioneer effort for the resurrection of the American merchant marine and that it was the beginning of a parliamentary war between American shipowners on the one hand and the influence of foreign steamship companies on the other—a war that continued well into the twentieth century. The Pacific Mail Steamship Company, we are told, was granted a subsidy by Congress at this time, "but hardly had that subsidy begun to operate, when an exposure of certain methods by which it was procured brought about a great public scandal, which for the time being put a peremptory end to the whole policy." Continuing, Buell writes in MEMOIRS OF CHARLES H. CRAMP (published in 1906), "Whether the charge that the Pacific Mail subsidy was obtained by corrupt methods was true or not, the means in obtaining it were no more corrupt than those which have been employed by foreign steamship interests to defeat legislation in Congress favorable to American shipping from time to time ever since." The 3,000-ton ships for the new "American Line" continued to be built in 1871-1873 at Philadelphia without any worth-while promise of aid from the United States Government, which, according to Buell, "steadily maintained its attitude of neglect as to the national merchant marine, while hundreds upon hundreds of millions in the shape of guarantee bonds and public land grants were poured out by the Congress in favor of western railroads, but not one dollar for the merchant marine."

Henry Hall, referring to the pioneer Cramp-built American iron screw transatlantic liners in his authoritative government report, says (November 1882) that these vessels—the *Ohio, Indiana, Illinois,* and *Pennsylvania*—"have now been running nine years and are insured by English companies at the most favorable rates given to any iron vessels afloat." He adds, "As passenger boats, they fully answered all expectations; their average time from Cape Henlopen to Queenstown is 9½ days, and on the return 10 days 2 hours. Each carried 100 cabin and 800 steerage passengers, 1,740 tons of cargo, and 720 tons of coal on 20½ feet draught of water." Thirty years before this was written and more than twenty years before the Cramp iron screw steamships were built, the Collins Line wood side-wheelers of a smaller size were crossing the Atlantic between New York and Liverpool (not Queenstown on the southwest Irish coast) in faster time. The Collins steam packets were big coal consumers, for they had simple low-pressure instead of compound engines (which were not adopted until the seventies) and were driven hard as express liners; yet Lindsay, the British historian, writes that these wood side-wheel Collins liners, built 1848-1850, each carried 250 cabin passengers and 2,000 tons of cargo.

Of the real pioneer iron screw transpacific liners, which were the first vessels designed and built for that service, Hall wrote in the fall of 1882: "The *City of Peking* and the *City of Tokio* ran for a long time from San Francisco to China and were large carriers of cargo and small burners of coal." The *City of Peking* made the run from Hong Kong to San Francisco in 26 days and from Yokohama to San Francisco in 16 days 23 hours. The 5,000-ton iron screw "*Cities*" were permitted to show their natural speed, which was an average sustained of about 12¼ knots per hour, but the old wood paddlers, because of coal consumption, were arbitrarily held by the management of the line to a maximum sea speed of 9½ knots per hour and a 22- or 23-day crossing. (If one of the vessels made a relatively short passage due to sea conditions, she cruised around outside, as her captain would not disobey orders and bring her into port ahead of the specified schedule.) Hall also says that the *City of Rio De Janeiro* and *City of Para,* launched in 1878, were a private venture of the builder, John Roach, who organized with them a steamship line to Brazil. These two ships operated in this line for three years, following which they were withdrawn and sold to the Pacific Mail Company. In 1864, under a treaty with Brazil, the United States granted $250,000 a year and Brazil $150,000 a year to establish a line of mail steamers between Philadelphia and Rio de Janeiro. This line operated until 1875 and "folded up." The iron ships of the second Brazilian line evidently fared no better than the wooden vessels of the first line, and the causes were said to be the same: "The steamers could not be made to pay at the increased American cost of operation, occasioned by labor charges and high taxation," even if the line had not been handicapped from the first in a competitive sense "by the excessive cost of building its ships."

The Morgan Line (Southern Pacific Railroad Company), in the early years of the twentieth century, operated a large fleet of American steel screw steamships, in which were the following old "early American" iron screw steamers, representative of the largest vessels (excluding the 5,000-ton *City of Peking* and *City of Tokio*) built prior to 1882:

Name of vessel	ALGIERS	LOUISIANA	CHALMETTE	WILLIAMETTE	EXCELSIOR
Built for	Charles Morgan	Charles Morgan	Morgan's Louisiana & Texas Railroad & Steam-ship Co.	Morgan's Louisiana & Texas Railroad & Steam-ship Co.	Morgan's Louisiana & Texas Railroad & Steam-ship Co.
Builder	Harlan & Hollingsworth	Roach	Cramp	Roach	Harlan & Hollingsworth
Year built	1876	1880	1880	1881	1882
Tonnage	2,270	2,840	2,983	2,264	3,264
Length—feet	320.0	320.0	321.2	335.7	340.0
Beam—feet	39.0	39.0	42.2	39.1	44.0
Depth—feet	24.0	28.4	21.3	24.0	23.5
Type of engine	Single	Compound	Compound	Compound	Compound
Diameter of cyl-inders—inches	50	28-56	35-70	38-70	38-76
Stroke—inches	60	72	54	54	54

The S.S. *Algiers* had had her simple-cylinder low-pressure engine replaced by a compound engine, and the S.S. *Louisiana,* holding an enviable record for speed, had been fitted with a triple-expansion engine with cylinders of 24, 39, and 64 in. diameter, respectively, and 45 in. stroke, operating at 170 lbs. steam pressure. (The *Algiers* was laid up and the *Louisiana* sunk through an unfortunate accident in the Mississippi River in 1905.) The *Chalmette* and *Excelsior,* when some twenty-five years old or more, were being operated with the original engines and boilers and at the originally designed pressure of 80 lbs. (no cut in pressure being imposed by the United States steamboat inspection officials following their annual inspection and tests). The hulls of all of these iron ships were sound and in good seagoing condition, although they were at the time mentioned (1903-1907) twenty-five to thirty-one years old. It is evident that good iron hulls, screw-propelling compound engines, and excellent Scotch marine boilers were built in the United States during the period 1876-1882, even though the country was deplorably late in taking up seriously the production of seagoing iron screw steamers.

Statistics of United States-built and Owned Steam and Iron Vessels

The following table gives data regarding the steam vessels built and documented in the United States during the period 1812-1880 inclusive:

Years	No. of Vessels Built	Total Gross Tons	Average Tonnage		During the Period	
			Per Year	Per Vessel	Maximum	Minimum
1812-1820	120	24,131	2,681	20	7,291 tons and 28 vessels in 1819	457 tons and 4 vessels in 1812
1821-1830	385	65,209	6,521	170	12,279 tons and 66 vessels in 1826	1,419 tons and 12 vessels in 1821
1831-1840	1,019	175,695	17,569	172	33,455 tons and 158 vessels in 1837	5,325 tons and 35 vessels in 1831
1841-1850	1,662	371,032 (for 9½ yrs.)	39,056	223	52,526 tons and 175 vessels in 1848	23,543 tons and 108 vessels in 1841
1851-1860	2,480	730,352	73,035	294	95,155 tons and 280 vessels in 1853	35,305 tons and 172 vessels in 1859
1861-1870	3,056	900,684	90,068	295	147,500 tons and 498 vessels in 1864	60,986 tons and 264 vessels in 1861
1871-1880	3,343	766,292	76,629	229	101,930 tons and 404 vessels in 1874	47,514 tons and 265 vessels in 1877

In 1868, the first year that statistics are available in regard to the type of American-built steam vessels, 86 (or 36 per cent) of the total were propeller-driven, 88 were side-wheelers, and 62 stern-wheelers. During the twelve years 1869 to 1880 inclusive, the type of steam vessels built in the United States was as follows:

Year	Propeller	Side-wheel	Stern-wheel	Total	Year	Propeller	Side-wheel	Stern-wheel	Total	Year	Propeller	Side-wheel	Stern-wheel	Total
1869	134	69	76	279	1873	249	57	96	402	1877	113	45	107	265
1870	104	96	90	290	1874	235	63	106	404	1878	164	58	112	334
1871	96	78	128	302	1875	185	43	95	323	1879	157	57	121	335
1872	114	154	24	292	1876	187	53	98	338	1880	182	71	95	348

In 1879, more steam tonnage than sail was built and documented in the United States for the first time in its history, but it was 1885 before steam for all time gained the upper hand in construction; for in 1883 and 1885 the flurry of sailing ship construction, which commenced in 1881 and was strong during the period 1882-1884 and reached its peak of 137,046 tons in 1883 (when steam totaled 107,229 tons), caused the national total tonnage of sailing craft built (excluding barges and towboats) to exceed that of steam vessels. The relation of the number of vessels and the total tonnage built and documented in the United States of steam and sailing vessels for certain years during the period 1812-1901 is set forth herewith:

Year	Sailing Vessels		Steam Vessels		Year	Sailing Vessels		Steam Vessels	
	No.	Tonnage	No.	Tonnage		No.	Tonnage	No.	Tonnage
1812	—	84,691	4	457	1861	879	172,208	264	60,986
1821	507	55,856	12	1,419	1871	756	97,176	302	87,842
1831	677	80,231	35	5,325	1881	493	81,209	444	118,070
1841	685	100,117	108	23,543	1891	733	144,290	488	185,037
1851	1,123	221,146	245	78,326	1901	526	126,165	506	273,591

The year of maximum tonnage for sail was 1855, when 1,781 sailing vessels were built (381 ships and barks, 126 brigs, 605 schooners, and 669 sloops) totaling 510,690 tons, and the last year tabulated, which ended June 30, 1901, was the biggest year for steam, there being 506 vessels documented (354 propellers, 131 stern-wheelers, and 21 side-wheelers) aggregating 273,591 tons. The large number of stern-wheelers built throughout the era of marine steam in the United States indicates the relatively large use of steam in shallow-water river transportation. In 1899, 182 stern-wheelers were built as against 243 propellers for the entire country and in 1898, 170 stern-wheelers, 209 propellers, and 15 side-wheelers.

The reports of the U. S. commissioner of navigation record the number and tonnage of metal (iron and steel) vessels built and documented in the United States from 1838 on. The relation of the number of such vessels and their total tonnage—divided into steam, sail, and tow barges—as reported built for certain years during the period 1838-1901 is presented herewith:

Year	Number of Iron (or Steel) Vessels				Total Tonnage	Year	Number of Iron (or Steel) Vessels				Total Tonnage
	Steam	Sail	Barges	Total			Steam	Sail	Barges	Total	
1838	1	—	—	1	198	1871	23	1	1	25	14,202
1845	4	—	5	9	1,383	1881	40	1	—	41	26,035
1853	4	—	3	7	2,071	1891	81	3	6	90	109,089
1861	11	—	—	11	4,079	1901	101	12	7	120	262,699

The high year for iron (or steel) steam during this period was the last one (ending June 30, 1901), when 101 steamers were built totaling 236,128 tons; the previous high was in the preceding year when 81 steamers were built aggregating 167,957 tons. The largest number of iron (or steel) sailing ships was 12 (totaling 21,746 tons), but 11 of 29,168 tons were built in 1900 and 10 of 31,424 tons—the record high—in 1897. The greatest number of metal barges was 13, totaling 11,521 tons, built in 1897; but in 1893, 9 barges were built with an aggregate tonnage of 11,717 tons. There was but little iron shipbuilding in the United States prior to 1871, and in that year the tonnage increased from 7,226 tons in 1870 to 14,202 and advanced to 33,014 tons in 1874. It first reached 50,000 tons a year in 1883, 100,000 tons in 1891, 150,000 tons in 1899, and 200,000 tons in 1901. There was a little iron sailing shipbuilding in the United States (on the Delaware) in 1883-1884, but it died abruptly, and Bath, Maine, built steel sailing ships from 1894 to 1902. The reports of the U. S. commissioner of navigation, it is said, do not include warships, coast survey, revenue marine, and other government vessels nor, according to Hall, "vessels built on foreign orders."

The relation of the tonnage of United States steam vessels registered for foreign trade and enrolled for protected and inland services for certain years during the period 1823-1867 has been officially stated as follows:

Year	Tonnage			Year	Tonnage		
	Deep-Sea	Inland	Total		Deep-Sea	Inland	Total
1823	—	24,879	24,879	1851	62,390	521,217	583,607
1831	877	68,568	69,445	1855	115,045	655,240	770,285
1841	746*	174,342	175,088	1861	102,608	774,596	877,204
1847	5,631	399,210	404,841	1867	198,115	993,765	1,191,880

*Was 5,149 tons in 1839 and 4,155 tons in 1840.

During the period from 1868 on, data are available of the number of vessels as well as the tonnage; hence the relation of three prime classes of United States steam vessels is set forth comparatively for certain years during the period 1868-1901:

Year	Registered for Foreign Trade		Enrolled for Inland Waters		Licensed Vessels under 20 Tons		Total	
	No.	Tonnage	No.	Tonnage	No.	Tonnage	No.	Tonnage
1868	235	221,939	3,205	975,142	179	2,334	3,619	1,199,415
1871	176	180,914	3,151	903,543	240	3,180	3,567	1,087,637
1876	188	198,227	3,673	968,300	459	5,845	4,320	1,172,372
1881	135	152,769	4,227	1,105,955	498	6,274	4,860	1,264,998
1886	185	176,633	4,417	1,327,582	865	18,769	5,467	1,522,984
1891	271	239,995	4,904	1,753,417	1,041	22,852	6,216	2,016,264
1896	244	264,882	5,246	2,018,149	1,105	24,177	6,595	2,307,208
1901	355	429,732	5,542	2,462,084	1,517	29,147	7,414	2,920,953

Sail registered for foreign trade reached its all-time high in 1861 (the year that the Civil War began) with 2,540,020 tons, and the total sail—registered, enrolled, and licensed—of the United States merchant marine stood that year at its high of 4,662,609 tons, which, with a steam tonnage of 877,204 tons, gave a total marine tonnage of 5,539,813 tons. It was 1901 before this total national tonnage was exceeded, and the increase in steam and reduction of deep-sea sail tonnage during the forty-year period are significant.

Year	Steam		Sail		Total	
	Registered Deep-Sea	Total	Registered Deep-Sea	Total	Registered Deep-Sea	Total
1861	102,608	877,204	2,540,020	4,662,609	2,642,628	5,539,813
1871	180,914	1,087,637	1,244,288	3,194,970	1,425,142	4,282,607
1881	152,769	1,264,998	1,182,817	2,792,736	1,335,586	4,057,734
1891	239,995	2,016,264	765,955	2,668,495	1,005,950	4,684,759
1901	429,722	2,920,953	459,407	2,603,265	889,129	5,524,218

While the total mercantile marine tonnage of the United States was practically the same in 1901 as it was in 1861, the total foreign trade tonnage (sail and steam combined) had dropped 66⅔ per cent in forty years and was only one-third as large as it was when the Civil War started. Eugene T. Chamberlain, U. S. commissioner of navigation in 1901, calls attention to the fact that whereas there was a decline of six per cent between 1850 and 1860 in the carrying of American exports and imports in American bottoms, this was not evidence of a definite decline in American shipping in foreign trade before the Civil War; for during that decade United States sailing ships were conducting "a great and profitable business in carrying between foreign countries, especially between the East and Europe," and until the years of the Civil War, the United States was increasing its merchant marine tonnage, both sail and steam (generally used on rivers, sounds, and lakes), and, when hostilities commenced, led the world in both tonnage and the quality of its vessels.

The Real Causes Underlying the Decline of the American Merchant Marine and Also the Reasons for Its Continued Somnolence

John Roach, one of America's pioneer builders of iron ships as far as the size and importance of his product were concerned, after a "long experience as a boiler and machine builder in New York," purchased in 1868 the Morgan iron works of that city. (In 1872-1873, he founded the first sizable and "modern" iron shipbuilding plant in the United States at Chester, Pa., near the iron and coal mines.) Testifying before a committee of Congress, Roach said that the demand for naval ships during the Civil War had not given prosperity to the shipyards and engine works as was popularly supposed, and he asserted that, out of ten marine engine shops that were in existence in New York at the commencement of the war, his works was the only one remaining in existence. Much has been said of the use of iron in the naval ships built during the Civil War, but Nathaniel McKay, the shipbuilder, testifying before the same congressional committee, declared, "We have got to have some experience in building iron ships. We have built but few iron ships, and most of them were failures." This condition was due to the high cost of iron, no encouragement for capitalists to invest the necessary large sums in iron shipbuilding plants because of no reliable or maintained demand and no government support, and no incentive to train and produce the necessary skilled workmen. Indeed, Britain had to send iron shipbuilders to the United States (ship-fitters, riveters, chippers, calkers, etc.) to repair British iron ships in America, on both the East and West coasts, and it was these men and the shipbuilding emigrants who followed them on whom the United States depended for its iron shipyard labor throughout the entire nineteenth and the early years of the twentieth century.

The British supported the South during the Civil War, with the result that the Confederates had nineteen armed steam cruisers at sea to prey upon northern, or Union, which means United States, shipping. Although they captured 257 northern ships, they drove very many times this number into neutral, protective harbors, where the ships were laid up for the duration of the war; into foreign registry (nearly all of the purchasers being British); or merely out of commission, their owners, because of the insurance rates in effect and the risks involved, declining to send their vessels to sea. The call of young men to arms added to the general disagreeableness of life in the forecastle of American sailing ships in the late forties and the fifties (because of the great influx of a low grade of foreign sailors due to the unprecedented demand for seamen to man American packets and clippers) and contributed to the decadence of the American merchant marine; after the war, both capital and labor lost their sea-mindedness and looked to the land, to the development of the railroads, public utilities, industries, mining, and the big-scale agriculture of the West for their employment. John R. Spears has said:

> The whole seafaring population spent the war period in acquiring new habits, while the British shipbuilders were busy perfecting their arts and the British merchants were establishing themselves firmly in the trades from which the war drove the Americans. With the advent of the packet system, the "private venture" method of adding to a sailor's income disappeared and with it one strong inducement to the young men who thought of going to sea. Then the old custom of making the forecastle a schoolroom, with the ship's officers serving as instructors in navigation, died out. The very prosperity of the American merchant marine served to deteriorate the quality of American seamen, for the number of ships increased much more rapidly than the seafaring population. Foreign sailors were employed for lack of enough Americans. In time, even the number of experienced foreigners was insufficient. . . . While life at sea was becoming absolutely unendurable to a self-respecting American youth, the opportunities for a career on shore were becoming more alluring. The young men who might have become leaders in our seafaring population—who might, perhaps, have found a way to maintain our supremacy at sea—were forced to suppress a natural liking for salt water; so they took the farms which the government gave away too freely; or they raised cattle on the unfenced plains; or they located mines; or they became managers and owners of factories where "protected" goods were made; or they obtained power and fortune from the railroads. While the British were strengthening their hold upon the sea, the Americans were steadily losing the sea habit.

After the Civil War, the tonnage of United States sailing vessels registered for foreign trade, which totaled 2,540,020 tons as of June 30, 1861, was down to 1,294,637 tons five years later, and sail and steam combined had lowered from 2,642,628 tons in 1861 to 1,492,926 tons in 1866. It was reported that during the Civil War "Britain purchased 801,311 tons of United States merchant tonnage and other flags absorbed practically half that amount, the Confederate commerce destroyers sank 104,605 tons, the War Department accounted for 757,611 tons, and the Navy Department 215,978 tons"; but a large percentage of the vessels that were acquired by the government armed services during the war, while taken out of deep-sea trade at a critical period (and this, with the depredations of Confederate cruisers, played into the hands of the British), undoubtedly returned to merchant service. Whereas some two and a quarter million tons of deep-sea tonnage were taken out of the United States mercantile fleet as a result of the war, the reduction in tonnage during the period 1861-1866 was 1,149,702 tons. However, during the war, Britain had so strengthened its position and developed its trading status and possibilities, principally with steam and iron screw steamers, that the United States never made much of a recovery and generally continued to decline, as the following tonnage figures for total registered sail and steam (foreign trade) vessels clearly show:

June 30	Tonnage	June 30	Tonnage	June 30	Tonnage
1861	2,642,628	1878	1,629,047	1888	943,784
1866	1,492,926	1882	1,292,295	1891	1,005,950
1872	1,410,648	1884	1,304,221	1898	737,709

During the Civil War, the shipbuilding industry declined to an even greater proportion than United States shipping, and it became a mere shell. Capital that had been derived from maritime interests prior to the closing years of the fifties deserted the sea, at last realizing that the day of iron and steam had come; that the United States was not organized or prepared to construct the new iron screw-propelled ship economically and, moreover, could never hope to do so without government help. For continued strange political reasons, this was not forthcoming, and the subject of marine subsidies was anathema in Congress. Railroad construction, the development of iron, coal and oil lands, mining, public utilities, manufacturing, lumbering, and agriculture were the magnets that drew American capital inland and away from ships and ocean transport. Internal development had set in. The great new West—a land of opportunities to make money quickly and with practically no risk—was calling.

The United States gave encouragement to its railroads, protected its industries and agriculture, and was absurdly liberal in aiding every phase of domestic development, but it refused to protect its shipping and foreign trade. Britain, on the other hand, dependent on the outside world for food and for many raw materials essential to its industries, fostered and encouraged its shipping; protected its commerce and stimulated its iron shipbuilding engine works and the expansion of its steam navigation; developed foreign coaling stations and dry-docking and repairing plants; bought control of the Suez Canal (which the French had built) for its steamships and the promotion of trade to India, the Orient, and Australia; and, controlling the ocean commerce of the world, became a free trade nation. British ships, and not the customhouses of Britain, collected the British tariff, levying it on exports as well as imports (British ships handled both the incoming raw materials and supplies and the outgoing manufactured goods), for a nation that, because of its protective marine policy in the realm of steam navigation and its associated development of the iron screw foreign trade steamship, had grown to be the workshop of the world and the greatest—as well as the pioneer—industrial nation.

Spears, a vigorous opponent of subsidies, tariffs, and protection, has said, "The decadence of the American merchant marine was wholly due to natural causes. . . . When the American merchant marine lost the command of the sea and the British gained it, the result was due to the working of the immutable law of the survival of the fittest." The decline of the United States as a marine power was due not to "natural" but to very unnatural causes—vicious, political, and unpatriotic; to a divided country, which proved its lack of harmony by waging a civil war of four years' duration (1861-1865); and to almost unprecedented shortsightedness on the part of the legislators of a people renowned for inventive genius, versatility, vision, originality, and courage. If left to "natural" causes, the United States would have continued indefinitely its supremacy on the seas. Undoubtedly, Spears is right when he refers to the operation of "the immutable law of the survival of the fittest," but from the fall of 1854 on (throughout the Civil War and the years preceding and following it), the battle for "the survival of the fittest" on the ocean trade routes of the globe can be likened to that of a contestant "bound hand and foot" in the arena with a heavily armed and armored gladiator.

Even though the United States tonnage was to go on increasing up to the outbreak of the Civil War, in the last half of the fifties we had passed the "meridian of our greatness" on the seas, and the tonnage being built was not deep-sea steam; moreover, the day of iron and of iron screw-propelled ocean steamships had dawned, and we were not prepared for it either economically or politically. Right up to the beginning of the war, however, American wood sail proved its superiority, and in the late fall of 1860 the medium clipper *Andrew Jackson* established a westbound transatlantic sailing record of 15 days from Liverpool to New York after she had earlier in that year made an all-time westbound Cape Horn record from New York (or any East Coast port) to San Francisco of 89 days and 4 hours. At the mid-fifties, the United States was the Mistress of the Seas. Meloney says: "Ship for ship—clipper or ordinary merchantman [sail or steam]—the United States dominated the commerce of the world; but as 1857 was the evening of the clippers, so it was the afternoon of our merchant marine in foreign commerce. The following year saw the cessation of the postal subsidies the United States had been paying for a decade to maintain the starred flag on the North Atlantic in competition with Britain's subsidized Cunarders."

Britain consistently and wholeheartedly encouraged and developed its steam mercantile marine and caused it to use British materials and facilities, turn to iron (and steel) and screw propulsion for deep-sea work, and gain a predominating position in the ocean commerce of the world through British aggression and government support and protection given to its mail and passenger ships, with farsighted planning and a powerful navy available to achieve its objectives by force if diplomacy failed. Meanwhile, the United States shipping interests, kept alive by a coastwise service but "bound hand and foot" by what in a world sense was a succession of stupid and ignorant Congresses and administrations, had nothing to display in the unequal conflict except a vast amount of courage and persistency. Most unfortunately, these qualities could not be used with any hope of ultimate victory, but the very existence of them gave the arrogant British a measure of concern up to the end of the era of wood sail and, to some extent, to the end of the days of merchant sail. The predominating American characteristics also caused the British so much uneasiness during the first half century of iron and steam that they organized to discourage the United States from again becoming a deep-sea carrier, and they went so far as to organize, spend money, and lobby in Congress to defeat legislation aimed at making the United States once more a sea power capable of transporting part of its own goods over the ocean trade routes of the world.

Charles H. Cramp, the Philadelphia shipbuilder, has said that it was the action of the United States Government in its failure to support the Collins Line with subsidies that built up the Cunard Line on the North Atlantic and British steam shipping in general on the Seven Seas. He says that, while New York clung for far too long a time to side-wheel propulsion, yet the propeller originated and was developed in the United States, and wood screw steamers of quality were built on the Delaware from early days and before they were successfully constructed for practical service in Britain. Cramp has written:

> There was not a time in the history of steam navigation that we did not feel that we could equal or even excel the English builders of propeller steamships. . . . The ships of this country were right, of the best form and model, and they were in advance of anything in Great Britain as far as hull construction and design were concerned. . . . Philadelphia, at a very early period in the history of steam propulsion, advocated the propeller engine, and as far as the working of the propeller engine was concerned, the degree of workmanship and skill in its design attained there was never excelled in Europe.

Cramp also says that Philadelphia-built propeller engines in the early days were "generally small in power," and builders had no engineering shop facilities to develop their proven designs and build screw machinery for big ships; neither did they have shipyards prior to the seventies in which sizable (3,000-ton) vessels could be built of iron. When Cramp constructed the first iron screw transatlantic liners in the United States for the new Philadelphia line in 1871-1873, he decided to put compound engines in these 3,100-ton vessels; but on an exploratory visit to Britain, undertaken just after his firm had signed a contract to build the steamships, he found that whereas John Elder had reintroduced, with pronounced practical success, the old American idea of compound steam engines, "the consensus of opinion of the different shipyards on the subject of compound engines was, as a rule, unfavorable." However, he adds: "We found that the opposition was principally due to the fact that the change from the old type to the new involved important and radical modifications of boilers and of engines, so they hesitated to discard their old plans, patterns and methods, the value of which they were sure of, and to grope into an unknown field of augmented costliness."

It was the economical compound and multiple-expansion steam engine operating a propeller in an iron vessel that drove the sailing ship from the long-distance trade routes of the world. In the early seventies, however, the British were apparently just as reluctant to adopt the improvement in marine engineering as New York shipbuilders were to change from the tried and proven reliable side-wheel engines in the forties, fifties, and sixties, and as long as big steamboats were built for the Long Island Sound and Hudson River trade—well into the twentieth century—the same general type of paddle-wheel propulsion was used and defended as the best, notwithstanding the competition of twin-screw steamers with high-pressure boilers and triple-expansion engines. In Britain, it was the shipowners, backed by the influence of the British Government, who forced the ship-, engine-, and boiler-building companies to adopt the multiple-expansion engine. In the United States, the engine builders of New York were often shareholders in the steamship companies, and as the executives grew old in the sixties, they followed the beaten path and the line of least resistance. The U. S. Government's insistence in 1872 that the Pacific Mail Steamship Company, in order to obtain a desired subsidy, build iron screw steamers was the first official act to promote modern merchant steamship construction in the United States; but unfortunately at that time the government had done nothing, by inviting private capital to build sizable iron screw-propelled warships, to encourage and develop the building of iron shipyards and well-equipped engineering works in the country capable of constructing large vessels and their necessary machinery.

The first real encouragement given to American builders of sizable iron (or steel) screw-propelled vessels was in 1885, when the United States adopted the policy of building a modern navy (the White Fleet of small cruisers and gunboats). This was the first real, definite help given the American ship- and engine-building industry by the U. S. Government since the Civil War, and it consisted not of subsidies or of constructing building facilities but of orders for modern war vessels, their machinery and armament, in the filling of which private capital took all the risk. However, the government gave an opportunity to American builders of ships, engines, and ordnance and assisted them in their designs by purchasing for their use plans of the best and most modern foreign construction to guide American designers to equal or improve on the best that was being made abroad. We read that, when the United States commenced to build a new navy, "every English journal, from the London TIMES down, pooh-poohed the idea that a modern man-of-war could be built in an American yard, modern high-powered engines in an American machine-shop or modern breech-loading cannon in an American forge." British shipbuilders were sure that the orders for the new United States warships would have to be placed with them and expressed themselves as willing to build for us "on as favorable terms as were accorded to China, Japan and Chile."

To show how low the United States had sunk as a modern shipbuilding nation using metals instead of wood and screw propulsion instead of paddle wheels, officers of the United States Navy (and most of them since the Revolution have been Anglophiles in naval matters) strongly urged the building of the new naval vessels in England. Fortunately, Secretary Whitney took charge of the U. S. Navy Department in 1885 and decided that the new warships to be contracted for—hulls, machinery, armament, and equipment—must be built in the United States of domestic materials. Congress, through its Naval Committee, butted into the matter, but Secretary Whitney was courageous, knew the situation well, and demanded that he be not interfered with or handicapped in his efforts to influence American builders to obtain the needed capital "for the enlargement of their facilities to meet the national requirements." Whitney co-operated with American builders, who admitted their inexperience (caused by the fact that they had not been called upon to do anything of the type and size then required), but maintained that, given time to get ready and acquaint themselves fully with the art abroad, they would be prepared to offer in competition designs embodying the latest improvements and build as good vessels, engines, boilers, and guns as could be produced abroad. Whitney bought foreign plans to guide American naval architects and engineers in the preparation of their plans, and the designs of the warships of the new navy, from the first, were American and the vessels, their machinery and armament eminently satisfactory, the finished pioneer metal screw-propelled warships with modern ordnance of the U. S. Navy being considered by foreign authorities equal to anything of their type, size, and age afloat.

And why should not the United States, even if it had been asleep for some twenty years as far as the world's progress in warship design and construction were concerned, be capable of quickly sensing and understanding the trend and modern achievements! In the fifties and early sixties, the United States originated the modern battleship, revolutionized naval design and construction, and led the world in the production of vessels of war—as it had for more than half a century in the design, building, and operation of sailing vessels, both merchant and naval. An English naval expert, speaking of the *Goliath* (1898) as the latest and most powerful battleship ever constructed in Great Britain, says:

It is of historic interest that the modern ironclad, with its turrets and massive plates, had its root idea in the famous monitors first designed for the United States Government by Ericsson, who sought to combine invulnerability with very heavy ordnance. The earliest monitors had . . . revolving turrets and cannon that threw round shot one hundred and fifty pounds and upward in weight, . . . and that measure of offensive capacity was capable of destroying any other contemporary man-of-war. . . . Ericsson . . . gave the cue to naval designers all over the world, and his elementary principle has only been developed and modified during the years that have elapsed.

Whereas Ericsson made the plans approved by the United States Government for the building of the armored floating battery that became known as the *Monitor,* which successfully fought the armored *Merrimac* of the Confederate Navy, the armored revolving turret of the *Monitor* was not Ericsson's original idea, but was the invention of Theodore Ruggles Timby (1819-1909), who patented it in 1843. The builders of the *Monitor* and similar vessels paid Timby a substantial royalty for each turret built and installed in their armored ships, or floating batteries.

The commercial disadvantages of a monopoly of the United States ocean-carrying trade by foreign merchant fleets resulting from the government policies inaugurated in the mid-fifties and the congressional indifference to the national merchant marine since the Civil War have been rather constantly in the minds of an intelligent minority of the citizens of the country; but nothing of real import has ever been done about the matter except temporary measures adopted more or less hysterically in self-defense to cope with strangling conditions brought about in the twentieth century by world wars. From 1865 on, the country has heard that "something ought to be done for our merchant marine," but nothing really worth while, economically sound, and lasting was done up to the time of the United States entry into World War I in the second decade of the twentieth century. Agitation has developed at times into organized efforts to repeal the United States navigation laws to permit the free importation and registry of foreign-built vessels, so that a greater proportion of imports and exports would be carried in vessels flying the American flag. It is self-evident, however, that any increase in United States documented tonnage that would accrue from such a national policy would be gained at the expense of the destruction of American shipbuilding. A repeal of our navigation laws would please Britain immensely and permit that country, with its tremendous construction capacity, to unload its old and worn-out craft on American "bargain hunters" and replace such uneconomic vessels with modern steamers cheaper to run and capable of taking care of themselves with profits to their owners when subjected to any competition. It has been truly said that there is no advantage in any gain made if such has associated with it some greater loss, and "the experiment of trying to augment our merchant marine by a policy calculated to destroy our ship-building industry would not be conducive to the general public interests." The two world wars of this century should be expected to kill for all time the old and frequently recurring congressional bill to repeal the navigation laws, which has often passed one house but, fortunately, not both.

Measures have been proposed in Congress that would authorize a general American ship bounty based upon tonnage and distance actually traveled in foreign trade, but it has always failed of passage due to the clashing of diverse interests and "party exigencies," real or supposed, in the House of Representatives. In 1891, Charles H. Cramp, who about that time commenced to build the 10,700-ton American liners *St. Louis* and *St. Paul* at Philadelphia, wrote of the benefits that would accrue, directly and incidentally, to every branch of American life and industry from a national marine foreign trade tonnage law properly administered, and he asserted: "I have never hesitated and do not now hesitate, to declare that ten years of its operation would result in placing our merchant marine in the foreign trade on a footing second only to that of Great Britain in amount and vastly superior to it in character and quality of vessels." Cramp dwelt upon the helplessness of the United States, with neither a deep-sea merchant marine nor a navy, and its absolute dependence upon Britain for deep-sea transport. He said that if for any reason Britain was to withdraw from our trade the vessels that by virtue of our acquiescence do all our transatlantic traffic both ways, "our peerless nation would be laid helpless under an embargo compared to which that of Jefferson's administration would be but a mere trifle of annoyance," and he added: "What would our political independence be worth, if circumstances, likely to occur at any moment, should visit upon us the consequences of our commercial servitude to England? and in a less, though still important degree, to Germany?" The United States, Cramp properly declared, had done nothing whatever through the years since the Civil War "to lift this yoke from our necks," and it could not be done except by restoring our merchant marine to its former status on the high seas and by naval power. He also felt, after his years of experience in contact with our legislators, that the greatly needed change in American marine affairs would not come "until we have received a sterner lesson of our weakness and helplessness than anyone now anticipates." Continuing, we read:

This pitiable condition on the ocean is emphasized by the contrast of our unrivalled power, resource and enterprise within our own borders. It seems, indeed, the strangest anomaly of modern civilization, that the most enlightened, most ambitious, most energetic, most productive and internally most powerful nation on the globe should be externally among the weakest, most helpless, and least respected. The sole remedy for this situation is ships with seamen to handle them, whether for peace or for war; whether to carry our enormous exports and bring our immense imports and receive therefor the tremendous tolls which now flow into foreign coffers, or to vindicate the majesty and power of our flag abroad in the world to a degree befitting our status in the community of nations. There is no lack of raw material, no lack of skill to fashion it into the instruments of commerce. We have the iron and the steel; we have the men to work them into the finished forms of stately ships; we have the money to promote the most colossal of enterprises by sea. All we need is assurance of a steady national policy of liberal and enlightened encouragement based upon a patriotic common consent, and elevated above the turmoils of politics or the squabbles of parties. One decade of such a policy would make us second only to Great Britain on the high seas either for commerce or for defence; and two decades of it would bring us fairly into the twentieth century as the master maritime power of the globe.

About this time and for many years thereafter, bills introduced in Congress to provide a bounty based upon tonnage and distance traveled by American vessels in foreign trade, whereas passed by the Senate, were defeated in the House. Yet the scheme proposed was generally analogous to the system that gave great satisfaction and proved so nationally profitable to France and other powers. The tonnage and mileage bounty bills were intended to attempt to equalize to some perceptible degree the difference in cost of seafaring labor and subsistence—and the difference in depreciation based on initial cost of construction—as between American and foreign ships. The owners, managers, and agents of the steamship lines and tramps that were carrying the commerce of the United States on the Seven Seas (with the diplomatic and economic power of their countries behind them) were determined to do all in their power to defeat such bills, and it stands to our national disgrace that these foreign interests succeeded in preventing the rehabilitation and growth of the United States merchant marine in the 1890's and 1900's, just as surely and definitely as the senators and congressmen of the South and certain western and non-maritime states killed the American marine in the 1850's. Foreign steamship owners, who had been generally indifferent during the decades following the Civil War to the occasional halfhearted, amateurish, and impotent attempts of the United States to modernize and invigorate its merchant marine, became seriously alarmed at the Frye-Farquhar bills in the 1890's and the earnest efforts of Senator William P. Frye, of Maine, the champion of the American maritime interests throughout his political career, to re-establish the United States as a first-class marine power on the Seven Seas. Buell says:

These managers of foreign lines proceeded systematically. Whatever may have been the activity of their competition for the carrying trade of the United States, they were unanimous in their determination to prevent the growth of an American merchant marine. Acting under the guise of a pretended business combine, which for convenience they termed "The North Atlantic Traffic Association," they raised funds, hired lobbyists—among whom appeared ex-officials of positions as high as the cabinet—and by every possible means known to modern ingenuity thwarted every effort of those favoring American interests, both in and out of Congress. This combination has no reason for existence except that of organized and systematic lobbying against American interests in the corridors and committee rooms of the American Congress [and elsewhere outside the capitol].

In 1894 a marine tonnage bounty bill of great merit passed the Senate, but was defeated in the House. We are told that while the foreign interests could not control the Senate, "they appeared able to affect the action of the House of Representatives negatively, at least, if not positively." In 1896, with McKinley as president, a generally similar bill to encourage American shipping and shipbuilding again passed the Senate, and although there was a thorough Republican majority in the House of Representatives, elected on a platform of which one of the cardinal planks had been a definite promise to furnish aid to the American merchant marine, it failed to win in the House. Buell says that "the deflection was almost wholly among western Republicans," and he adds:

During the contest over the bill in the Congress under consideration, the tactics of the foreign steamship owners and managers, personally as well as through their hired agents, were a disgrace to the good name of American legislation. They threw off all disguise and openly lobbied on the floors and in the corridors and committee rooms of the House to prevent consideration of the bill. In that Congress there was every prospect that if the Senate bill could be brought up for consideration it would pass with some trifling amendments, which could easily be adjusted in conference committee. The whole strategy of the alien shipping interests was to prevent consideration, which they ultimately succeeded in doing by working upon the susceptibility or the apprehensions of certain Republicans from the far Western States.

In 1898 a merchant marine tonnage bounty bill, with the amount to be expended under its provisions limited to $9,000,000 in any one fiscal year, was again brought forward in Congress. It met the same kind of organized foreign hostility that, in conjunction with the Democratic Party political opposition, had beaten its two predecessors, and it shared their fate, passing the Senate and being denied consideration in the House. In the Congress that assembled in 1901, another tonnage bill to foster the country's merchant marine and encourage national shipping and shipbuilding was again brought forward for the fourth consecutive time. It too passed the Senate, but even though there seemed to be strong hopes that national patriotism would be sufficient on this occasion to resist the pressure, propaganda, and influence of the foreigners and that it would pass the House, the chairman of the Committee on Merchant Marine and the other advocates and friends of the bill failed to get a rule for its consideration. Strong efforts were steadily made to do so up to the closing week of the Fifty-seventh Congress, which expired March 3, 1903.

This record is one to make any American ashamed of his country's unpatriotic and senseless marine policies, parliamentary procedure and record. The colonials declared their independence of Britain in 1776 and fought the War of 1812-1814 supposedly to make their liberty secure; yet in the closing decade of the nineteenth and during the early years of the twentieth century, it was Britain that, as Mistress of the Seas (a title and power regained by it from the United States because of the un-American acts of Congress in the fifties and the disunity that led to the Civil War), dictated the policy of the United States in regard to its merchant marine and ruled that American shipping and shipbuilding should not be encouraged and fostered; that the United States must not become a marine power but continue to be dependent on foreigners, particularly Britain, for the carrying of its products, both exports and imports, on the high seas.

In 1898 the total tonnage of United States registered foreign trade vessels—both steam and sail, wood and iron—was only 726,213 tons; in 1861 it was 2,496,894 tons. In 1898, of the total national imports and exports, only 9.3 per cent was carried in American vessels; in 1861 the percentage was 65.2 per cent and in 1826, 92.5. Lloyd's Register in 1901 gives the gross tonnage of British steam vessels as 12,739,180 tons, that of Germany 2,417,410 tons, and of France 1,068,036 tons; while the tonnage of all the steam vessels in the United States, including those in coastwise trade but excluding the Great Lakes tonnage, was 1,003,795 tons. The report of the U. S. commissioner of navigation shows that, with a continued steady increase in the volume of foreign trade, American vessels in 1901 handled only 8.2 per cent of the country's total exports and imports.

William Brown Meloney, in THE HERITAGE OF TYRE (1916), says:

When in August 1914, the mailed fist of Bellona fell and paralyzed the commerce of the entire world, the United States flag had descended in the ocean scale below little Norway, below Italy, even below Japan [as well as below Britain, Germany, France, Austria-Hungary, and Russia]. With a foreign traffic of four and a half billions of dollars, exports and imports combined—more than one-tenth of the whole earth's business in a year—we possessed a merchant marine capable of transporting eight and nine-tenths per cent of it. We had registered for deep water [not only for foreign trade on the Seven Seas but also including all coastwise vessels] only eight hundred and ten steamers of 666,593 gross tons. . . . Before the European war was a week old, the United States began to reap the harvest of folly that it had been sowing during the preceding fifty years. . . . By the middle of August 1914, Americans for the first time in nearly two generations were realizing as a people that they were dependent upon the sea. The foreigner whom, for half a century, we had been permitting to do our carrying had either quit the job or, according to the dictates of the law of supply and demand, increased his charter prices to what were believed to be impossible figures.

While the United States had since the end of the Civil War been indifferent to its mercantile marine and the Congresses of the fifties had stuck a knife in its back, all other maritime nations had been encouraging the building of deep-sea steamships and fostering their merchant marines. At the outbreak of the war in 1914, the United States sea steam tonnage of 666,593 gross tons (both ocean-going and coastwise) can be compared with the following figures of the steam tonnage of the merchant marines of each of the belligerent nations:

Nation	Steam Tonnage: No. of Vessels	Steam Tonnage: Gross Tonnage	Nation	Steam Tonnage: No. of Vessels	Steam Tonnage: Gross Tonnage
Britain (including colonies)	10,123	20,523,706	Japan	1,103	1,078,386
Germany	2,090	5,134,720	Austria-Hungary	433	1,052,346
France	1,025	1,922,286	Russia	747	851,949
Italy	637	1,430,475	Belgium	173	341,025

Meloney well says that to have and to hold a merchant marine commensurate with the independence of American commerce and communications is a question which ranks with that of military preparedness in the defense of the nation. The war with Spain in 1898, when the United States had to rake and scrape through the merchant fleets of the world for vessels suitable for conversion into transports and naval auxiliaries, should have taught us a lesson, but apparently it did not; if Spain had been stronger and the war had not been so one-sided and short, the United States would have learned from it something of the importance of a national steam merchant fleet. Again, in 1907, when a fleet of U. S. war vessels was sent around the world to impress nations in the various parts of the globe, the people of the country remained in ignorance of the fact that this cruise definitely portrayed our national military weakness in far-flung fighting rather than our strength. Because of the fact that we possessed no suitable mercantile tonnage to provide our naval vessels with coal and supplies, the U. S. Government was obliged to charter some fifty-odd foreign merchant vessels as a consort to serve the fleet. If at any time during the around-the-world cruise of our naval fleet war had been declared on the United States, its alien colliers and supply vessels would, under international law, have automatically become either belligerents or neutrals. A strong navy in distant seas is impotent unless backed up by adequate vessels of the merchant marine; "a chain is no stronger than its weakest link."

As late as November 4, 1914, some three months after the first World War of the twentieth century commenced in Europe, the United States Congress was guilty of enacting the La Follette-Alexander seamen's law, which, notwithstanding its pretensions, is a piece of class legislation, pure and simple, in addition to being a law drafted in stupid ignorance of facts affecting international shipping. President Wilson signed the bill on March 4, 1915, four months after it had passed both houses of Congress and, by so doing, forced United States shipping from the Pacific. The Pacific Mail Steamship Company and the Great Northern Steamship Company (owner of the S.S. *Minnesota,* the largest cargo carrier afloat) were driven out of business, and The Dollar Steamship Company went under the British flag so that it could continue to operate. It has been said that this early war-time act of the U. S. Congress and Democratic administration (1914-1915) sank the nation to new depths of ignominy and gave the trade of the Pacific to Japan and Britain. Admiral Perry, whose guns forced Japan to trade with us, must have "turned over in his grave" and "his sea warrior's spirit groaned in the anguish of humiliation." Meloney writes:

> A British ministry that would enact any law as inimical to its national commerce as the La Follette-Alexander legislation might just as well resign. A Board of Trade that would tolerate the driving out of business of a British steamship corporation corresponding in size and importance to the Pacific Mail [to say nothing of the Great Northern Steamship Company, etc., and the loss of The Dollar Steamship Company] would be drummed out of office. . . . When the tale of this period comes to be written, historians will turn in vain to current records for a single clear-ringing, nation-stirring protest against the policies of the United States which produced the events of 1915. In vain they will search and hearken for the voice of a Washington, a Henry, an Adams, a Hamilton, a Monroe, a Webster, a Lincoln, a Cleveland, challenging the soul of a nation to be steadfast in its faith, true to its heritage and worthy of its destiny.

Charles H. Cramp, of Philadelphia, was prejudiced against New York ship- and engine-builders, although he admitted that firms such as those of Webb, Steers, Simonson, and Smith & Dimon had built wonderful, fine wood hulls for large vessels, both steam and sail. He did not hesitate to declare, however, that the attitude of the U. S. Congress and administration in regard to the Collins transatlantic line in the realm of subsidies, encouragement, and both moral and financial support not only wrecked Collins and killed American steamship operations in the North Atlantic when deep-sea steam propulsion was in its infancy but also actually operated to build up the Cunard Line and encourage other British steamship lines. When Cunard complained to the British Government that the Collins Line, with its "faster and bigger ships, splendid equipment and luxurious accommodations," enabled it "to command the cream and bulk of the passenger and fine freight traffic," he was told to "cut rates and get the business." With freight rates practically halved and passenger fares slashed, the Collins steam liners showed their superiority and continued to make faster runs and widen the spread between the American and British steam packets. As 1851 advanced, the British premier is reported to have ordered Cunard to keep operating and "carry freight for nothing if you have to"; then the historic British slogan was flung around with fervor by the British—on the steamers, in the shipyards and machinery building shops, in the government, admiralty, and Parliament: "Anything to beat the Yankees." The Cunard subsidy was jacked up to some $843,000 a year (excluding some extras added) from $413,000 (having earlier been $389,000 and $292,000); but after the United States had increased the Collins Line subsidy from $385,000 to $858,000 a year, it served notice of a reduction back to the original $385,000 and in 1858 abandoned the American postal-naval subsidy system. It was not the British that beat "the damned Yankees," who were driving steamships on the North Atlantic much as they had driven their sailing ships on the Atlantic and their clippers on the Seven Seas, but the United States Congress. The British could not beat Americans on the ocean, so "the Yankees" proceeded to "beat themselves"—to the great joy and lasting benefit of the British. It has been truly said that the United States triumphed in steam navigation as it had in sail and then laid aside the laurels; "like a banderlog people we climbed the tree and shook down the cocoanuts for strangers to gather."

After the United States retired from the North Atlantic, the British Government reduced the annual amount of the Cunard subsidy, but in 1871, apprehending the return of competition by a new American line that ordered four 3,000-ton iron screw steamers built on the Delaware to operate between Philadelphia and Liverpool, Britain generally increased transatlantic grants, and at the time of the American International Mercantile Marine Company merger in 1903, the British Government agreed to pay the Cunard Line a fixed subsidy of $750,000 a year, in lieu of the admiralty subvention of $75,000 a year and mail payments, to keep that steamship line "wholly and essentially British in ownership." When Germany challenged Britain's supremacy in transatlantic greyhound speed honors, Britain lent the Cunard Company $13,000,000 at a low rate of interest in order that the *Mauretania* and *Lusitania* could be built to "beat the Germans." All the foreign maritime nations built up their merchant marines and steamship mail service by subsidies. Britain has paid mail and kindred subsidies consistently since 1840 and paid subventions or bounties since 1872 to lines maintaining ships that can be converted into naval auxiliaries or troop ships. Germany, up to 1914, was paying the North German Lloyd and German East Africa lines $1,750,000 a year, in addition to liberal compensation paid many lines for "actual mail services rendered" as well as commercial bounties. France bought the position of the third maritime mercantile power in the world prior to the war of 1914-1918 by extravagant navigation and construction bounties and postal subsidies. It is said that no nation in history has ever paid so much to produce and maintain a merchant marine as France, but that France has no natural "sea genius" as have the Americans, British, Swedes, Danes, Norwegians, and Germans. Austria paid a building subsidy and operating bounties based on tonnage and mileage; Japan ranked second to France in direct subsidies to shipping; Italy and Russia paid liberal shipbuilding bounties; and Spain, as well as encouraging building by this means, paid operation, tonnage, and speed subsidies. Norway's subsidy expenditures in the early years of World War I were liberal considering its deep-sea tonnage, and Brazil paid $1,500,000 a year in postal subsidies, the principal beneficiary being the Lloyd Braziliero.

Ignoring the tremendous tonnage of both sail and steam in protected river, sound, and inland waters, the United States in 1860 was drawing near to Britain in the struggle for the world's ocean-carrying trade. In the general application of steam to the purposes of navigation, we had made as rapid and extensive progress as Britain up to this time, and its one point of superiority over the United States, which became evident in the late fifties because of Britain's very definite national policy, was in the application of steam to foreign trade, particularly for ocean express, mail, and passenger transport. Between April 1840 and the same period in 1850, Britain paid out £3,819,891 ($18,564,670) in mail subsidies to four steamship lines alone, and of this amount, £3,078,171 ($14,959,911) was paid to lines running to America (both North and South) and the West Indies. During the next decade (April 1850-April 1860), the total British payments for ocean mails, excluding contributions of Canada and Australia, amounted to £9,017,142 ($43,823,310), and it is figured that the increased payments to the four British lines before stated were £7,073,948 ($34,379,387), making a total paid in twenty years (1840-1860) of £10,893,839 ($52,944,057). This payment of some fifty-three million dollars by the British Government on ocean steamships during the first two decades of ocean steam navigation naturally exerted a powerful influence on the development of British steam navigation and on the improvement and extension of shipyards, engineering shops, and boiler works devoted to that particular type of marine construction. During this period of time, the total outlay of the United States in steamship subsidies was $13,900,000, of which $6,650,000 was, in fact, coastwise and purely domestic in its scope and intent, being encouragement for the inauguration and development of fast mail and passenger service between East and West Coast ports via the Isthmus of Panama, and only $7,250,000 (or less than 14 per cent of the British expenditures) was for the promotion and maintenance of modern mail and passenger steamship services engaged in foreign trade.

The following figures showing the growth and tonnage of the merchant shipping of the United States during the period 1838-1860, comparative with those of Britain, were presented by U. S. Commissioner of Navigation E. T. Chamberlain in his report of October 19, 1901:

	United States Tonnage			United Kingdom (Britain) Tonnage		
Year	Sail	Steam	Total	Sail	Steam	Total
1860	4,485,931	867,937	5,353,868	4,134,390	452,352	4,586,742
1838	1,802,217	193,423	1,995,640	2,308,800	74,684	2,383,484
Increase	2,683,714	674,514	3,358,228	1,825,590	377,668	2,203,258

The bulk of the United States steam tonnage has always been employed on protected waters—rivers, sounds, and inland lakes—and on the Great Lakes. In 1838, there were 190,632 tons of steamers enrolled for protected waters service and only 2,791 tons registered for deep-sea work. The comparative figures and growth of American and British merchant shipping engaged exclusively in the foreign trade between 1849 and 1860 are shown in the following table, in which American steam is given in gross tons, but the only British figures available for steam are (as in the preceding table) stated in net tons:

	United States Tonnage			United Kingdom (Britain) Tonnage		
Year	Sail	Steam	Total	Sail	Steam	Total
1860	2,448,941	97,296	2,546,237	2,804,610	277,437	3,082,047
1849	1,418,072	20,870	1,438,942	2,040,344	48,693	2,089,037
Increase	1,030,869	76,426	1,107,295	764,266	228,744	993,010

The purposes of British mail subsidies were to maintain and strengthen Britain's position as a commercial maritime and naval power. The United States had been rapidly overtaking Britain and in the forties threatened its position as Mistress of the Seas. Steam and later iron gave Britain the opportunity to neutralize the imminent leadership of the United States on the oceans of the world. Britain's wood merchant sail was being more greatly outclassed with the years by the more cheaply built and better-operated wood sailing ships of the United States. While British "wooden walls" had proved to be a sufficient protection against European enemies (including Napoleon, who had conquered the rest of Europe), the United States, without a navy (but quite capable of building one as relatively good as was its merchant marine), had done what not even the seemingly formidable Spanish Armada had accomplished; viz., had burned and destroyed property on "the sacred soil of Britain" by the use of men from enemy ships, had terrorized and driven to cover British ships trading in British waters, and during the War of 1812 had won practically all of the single-ship engagements at sea between vessels of generally similar type and power. Britain well knew that its days of supremacy on the seas with wood sail were over and that the United States could whenever it wished (and was willing to spend the money) take leadership in naval sail as it had in merchant sail. The United States was Britain's only possible rival on the seas during the period 1840-1860, when steam subsidies were developed, and Britain's subsidy plans were from the first indisputably military as well as political and commercial. The bulk of British mail steamship subsidies was paid to British steamship lines, which, with their connections, environed our Atlantic Coast, and the British Government, in granting subsidies for mail steamship service, demanded the building of large and strongly built seagoing merchant steamers that could carry heavy guns when necessary and be used as naval vessels in the event of war. The British contracts with the steamship companies subsidized as mail carriers required that the steamers be considered and kept in condition as reserve naval vessels and, at times, be commanded by officers of the Royal Navy.

Threatened by the conceded superiority and economy of American wood sail, Britain, following the application of steam to ocean transportation, had energetically turned its attention to the development of marine steam engineering and the building of steamers for deep-sea work. Later, with the same prime thought of successfully competing with America in mind, Britain, being rich in iron and coal and dependent on foreign countries for timber, encouraged the substitution of iron for wood in the construction of merchant vessels (although for long years the admiralty preferred wood steam for naval vessels as it did paddle wheels to the screw propeller). The ocean-carrying trade of Britain was and continues to be one of the chief sources of the wealth of Britain and the mainstay of British commerce. From the first, subsidies were intended to promote British trade as well as augment the British Navy with a fleet of fast steamships that were naval auxiliaries, independent of wind for propulsion, and operated as a means of establishing regular, safe, and prompt means of communication between the mother country and her possessions. These government incentive payments founded and developed strategically located coaling stations, repair and servicing bases, and trading centers scattered throughout the world. The subsidizing of steamers by Britain was both a defensive and an aggressive measure and was aimed at increasing both the commercial and military power of the nation; it was admittedly intended to assist materially in beating off the challenge to marine supremacy by the United States, and it succeeded when Congress abandoned the policy of creating American steamship lines and of keeping them progressively competitive with British vessels on the trade routes of the world.

Britain's early expenditures on fast ocean steamships created a demand for that type of marine construction and gave British ship-, engine-, and boiler-builders orders in the execution of which they were able to effect both improvements and economies in construction and develop iron shipbuilding and screw propulsion in iron hulls. The government policy gave both shipowners and builders of ships and machinery some guaranty that the investment in this form of commercial enterprise was to an extent insured by the government. It is because the United States refused before, during, and after the Civil War to do the things that Britain did to foster its merchant marine and develop its commercial and naval power on the Seven Seas that America, notwithstanding all its unprecedented wealth and resources, dropped from the proud position of mercantile Mistress of the Seas around the middle of the nineteenth century to the humiliating position of a tenth rate deep-sea maritime power some half century later and became dependent upon the vessels of other nations to handle ninety-two per cent of its combined exports and imports.

Meloney says that the four principal factors that contributed to "the striking of the American flag on deep water from 1865 to 1914" were:

1. The inability of the United States to build iron and steel vessels as cheaply as foreign nations, particularly Great Britain. [This was due to the indifference of the government to the development of facilities for building iron or steel screw steam vessels economically and in quantity; to a limited demand and no national, or congressional, encouragement.]

2. The inability of shipowners, under a continuous and inelastic protective system, to build abroad or, having built in this country, to operate their higher costing vessels profitably in competition with foreign nations of lower living standards. [Construction bounties creating a demand would have supplied plants and suitable materials and lowered costs, but operating subsidies would have continued to be necessary to compete with foreign subsidized lines and cheaper foreign labor costs, etc., that are due to a lower standard of living aboard.]

3. The unfamiliarity of the American people as a whole, because of the diversity and competition of their interests and their geographical distribution, with the national necessity or the advantage of maintaining a merchant marine.

4. A *laissez-faire* political policy, satisfied, if the ships of other nations were willing and ready to carry our commerce more cheaply than Americans, to let them do it.

The United States revolutionized the science of shipbuilding and built the world's biggest, strongest, and fastest wooden hulls under either canvas or steam. We originated the clipper ship and the deep-sea sailing packet and organized the first transocean lines operating regularly on schedule; we created steam navigation, screw propulsion (single and twin screws), compound engines, etc., and yet when both the first and second World War shocked the world, the United States had virtually no deep-sea merchant marine. Meloney well said in 1916 that what we had been destroying through a full half century, we could not rebuild in an hour; that our history and national experience clearly demonstrate that the destiny of our great nation is inseparable from the sea.

> We are committed to the use of the oceans which are our boundaries by all the factors in the scheme of civilization—committed geographically, politically, commercially, socially and by the military necessities and the instincts of self-preservation. We cannot longer deny these commitments . . . and hope to survive as a power of influence in the affairs of the world. We must in the advantageous moment that has been thrust upon us either determine to seize our estate in the deep waters, once and for all, or else prepare to offer a blood sacrifice and pay a penalty to which, in comparison, the exactions since August 1914 will be as a farthing tithe.

Events since 1916 have proved the correctness of this declaration, admonition, and warning.

Records of the fourth decade of the twentieth century show that the United States—carrying only 29 per cent of its foreign trade in American bottoms—stood at the bottom of the list of the eight leading world maritime powers. Japan, whose ships in 1933 carried 65.9 per cent of its total foreign trade (i.e., both exports and imports) led all other nations in the patriotic utilization of its merchant marine. In the field of exports, the Japanese ships carried 71.4 per cent, while the ships of the United States carried only 22 per cent of its export trade. The ships of Norway in 1933 carried 62.1 per cent of the Norwegian foreign trade; Great Britain came third with 59.6 per cent, followed by Germany with 58.2 per cent, Italy with 46 per cent, and France with 39.6 per cent. Although the world's greatest industrial nation, the United States was, at the commencement of each of the world wars of the twentieth century (1914 and 1939), actually the weakest insofar as the use of its own ships to carry its own trade to and from other nations is concerned. This maritime and deplorable national weakness cannot be laid at the door of American shipbuilders and shipowners. It is a situation for which the politicians, demagogues, and thoughtless voting citizens of the United States are to blame and a problem that can be solved only by the nation at large.

Alfred H. Haag, in addressing the American Merchant Marine Conference in 1935, said:

A German economist once remarked that America without her own merchant marine would be like a bird without wings or a fish without fins. The truth of that statement was brought home with force in 1914, when we found ourselves in a helpless position due to our lack of ships. To compute the price America paid for her weakness upon the seas we must refer to the years immediately following the Civil War when our shipping in the foreign trade began its decline. Had we maintained a strong merchant fleet in the foreign carrying trade for the half century preceding the World War, it is reasonable to assume that we would have carried at least half of our commerce in our own ships, and the revenues derived therefrom would have increased our national income by nearly three billion dollars. Allowing ten million dollars annually for government aid to American ships, which would have been ample for those years, the cost to the government for the entire fifty-year period would have totaled 500 million dollars. Thus, the possession of such a merchant marine would have brought us an additional national income six times greater than the sum that would have been spent to establish and maintain it. Furthermore, with the long intrenchment resulting from this program, the cost to the government would probably not have exceeded 700 million dollars up to the present day.

From 1914 to the time of our entry into the [first] World War we paid over a billion dollars to foreign shipowners, most of which would have gone to American ships had we possessed an adequate merchant marine.

Our shipbuilding program and related activities cost us over three billion dollars. Interest upon that expenditure has totaled another billion and a half dollars.

A hundred million dollars was paid for the transportation of American troops in foreign ships, all of which could have been carried on American ships had we possessed an adequate merchant marine.

After making an allowance for the earnings of our government fleet since the war, it is plainly evident that our weakness upon the seas has cost us from the time of the Civil War nearly seven billion dollars—or an amount ten times that which would have been required by a fair and uniform system of government aid. . . .

The primary purpose of government financial aid to American shipping is to place American services on an economic parity with our foreign competitors, whose capital and operating costs are on a lower level. The rendering of such aid will not accomplish the purpose for which it is intended unless our ships are on a parity, in both speed and economy of operation, with those of our competitors. As a penalty for obsolescence our ships operating in the foreign trade are paying five million dollars annually in excessive fuel costs alone.

In conclusion, let me state that in spite of the rapidly growing obsolescence of our merchant fleet and the vicissitudes through which it has passed since the war, our maritime position today is better than it has been for seventy years. We have no desire to monopolize the trade routes of the world, but only to occupy a position commensurate with our place in the family of nations.

On April 12, 1940, Congressman Schuyler O. Bland, chairman of the Committee on Merchant Marine, told the House of Representatives:

A combination of world circumstances gives America a great opportunity to re-establish its merchant marine. . . . It is inconceivable that, in the light of world conditions, any delay in the building program will be permitted now. There never has been at any time in the past as great a need and as great an opportunity for a modern, up-to-date, fully equipped, economical merchant marine as at present.

George W. Dalzell wrote after the commencement abroad of the second World War of the twentieth century (but before the United States's participation in it):

The building of ships calls for capital goods on a large scale. Their operation uses labor in a service employment. Freights on American ships bring in money that would otherwise go abroad. Wages paid on American ships and in American shipyards increase purchasing power within the United States. When goods are shipped in foreign bottoms the wages go into the freight bill to increase purchasing power in foreign lands and diminish it at home.

A merchant marine is needed to keep us out of wars other than our own; to implement our Navy; to promote our foreign markets and increase our trade; to provide employment and wages for labor in the many industries that contribute to the building and operation of ships and the production, inland transportation, and distribution of the goods that come and go in them; to put idle capital as well as idle men to work in productive industry; in sum, to contribute to the safety and welfare of the United States.

XII.

THE CONTRIBUTION OF THE UNITED STATES TOWARD THE PRACTICAL DEVELOPMENT OF STEAM NAVIGATION AND THE SCIENCE OF MARINE ENGINEERING

Early British Steam Engineering and Steam Navigation

ENGLAND is responsible for the invention of the steam engine, and conditions in Great Britain—social, economic, and geographical—were peculiarly favorable to the development of steam engineering in that country. In the production of engines and in their application for power, Britain, with an abundance of domestic coal for fuel and iron ore from which machinery was made, got a good start over the rest of the world. The steam engine gave impetus and encouragement to the industrial revolution, which made Britain for the greater part of a century the workshop of the world and, during the last half of the nineteenth century, the undisputed Mistress of the Seas and the greatest commercial nation of the world. It was in 1782 that James Watt, working near Birmingham, England, made improvements on an original single-acting steam engine patented in 1763 and 1769 and invented the double-acting condensing engine that used steam on both sides of the piston and gave a shaft a rotary motion. For many years, the steam engine was "an enormously heavy and cumbersome machine"; nevertheless, Watt's invention heralded the dawn of the industrial revolution, which was to spread in time not only from England to other countries but also from the land to the sea and ultimately cause wooden and iron sailing, or wind-propelled, ships to be displaced by iron steam screw tramps and the more impressive passenger, mail, and cargo-carrying steamships known as "liners."

Whereas a patent for a steamboat was obtained in England by Jonathan Hulls as early as 1736, nothing practical developed until William Symington, a Scotch engine builder, began experimenting with steamboats in the nineties. Symington became interested in the matter when, in 1788, he built a very small Watt type of engine for Patrick Millar, a rich retired capitalist, who was working as an amateur on the problem of steam navigation on the pond of his estate in Scotland and who ultimately spent about one hundred fifty thousand dollars on experimentation without having anything of real worth to show for it. James Rumsey, an American, had received patents for a steamboat in England on November 6, 1788, but Symington, in November and December 1789, made tests on a steamboat in the Forth and Clyde Canal, which did not prove satisfactory, although Symington himself wrote at a later date: "The boat glided along, propelled at a rate of 5 miles an hour and all parties interested declared themselves satisfied with the success of my performance." However, Millar did not share Symington's enthusiasm, for immediately after the December test, he wrote a colleague: "I am now satisfied that Mr. Symington's steam engine is the most improper of all steam engines for giving motion to a vessel." Apparently, Millar had furnished the money to build the steamboat, both hull and machinery, and after commenting on the faults of the engine, he ordered it sold, saying that the defects were "past remedy" and that "the engine cannot be of any use to me now." Prior to Millar's and Symington's experiments in Britain in the application of steam power for the propulsion of boats, the idea had been advanced in the United States, and boats had been successfully operated by steam.

In 1802, after having done nothing further in marine propulsion for a period of twelve years, Symington induced Lord Dundas, president of the Forth & Clyde Canal Company, to build a steam vessel for towing purposes. The machinery built by Symington for this boat (named *Charlotte Dundas*), first tested in March 1803, had unquestioned merit, although many fears for what "might happen" prevented the adoption of his ideas. Symington himself, whose story in regard to Robert Fulton's visiting him and making a trial run on the *Charlotte Dundas* can be proved to be impossible because of dates and, therefore, false, wrote that the steam tug, on her trial, towed two barges 19½ miles in six hours and that the Duke of Bridgewater ordered eight boats like the *Charlotte Dundas* for his canal. However, Bridgewater died, and not only did his estate decline to have any interest in the scheme but also the governors of the Forth and Clyde Canal forbade further use of the steam tug on their property. Symington said: "This so affected me that I probably did not use the energy that I otherwise might have done to introduce my invention to the public notice, and perhaps it was from this circumstance that the introduction of steam navigation was postponed in the United Kingdom of Great Britain till after the Americans had taken advantage of it and carried the invention into general practice." It is well to note, however, that Symington was in error when he thought that Robert Fulton introduced steamboats in the United States. Twenty-one years before Fulton built the *Clermont* (his first successful steamboat and the first steamboat that he ever attempted to design and build in America) and seventeen years before Symington made a test run with the *Charlotte Dundas* on the Forth and Clyde Canal in Scotland, John Fitch had successfully operated a boat under its own steam on the Delaware, and four years later Fitch ran a steamboat on a regular packet schedule for a whole summer with entire mechanical and service satisfaction.

William Henry, of Lancaster, Pa., Early Interested in Steamboats

Philadelphia and the Delaware region generally claim that the steamboat was invented and first tested successfully in their territory. It is said by Pennsylvanians that William Henry, of Lancaster, gave much consideration to "the application of steam to the propulsion of boats" before the War of the Revolution; that John Fitch, in July 1786, propelled a boat on the Delaware River by means of a steam engine, which, it is claimed, was "the first boat actually moved by steam in any part of the world"; and that Fitch, in April 1790, operated the first truly mechanically successful steamboat ever built and ran her commercially and with satisfaction throughout the summer.

William Henry, of Lancaster, Pa. (born in Chester County in 1729), was an important manufacturer of rifles prior to and during the War of the Revolution. He invented and used labor-saving machinery and novel mechanical devices in his shops. Among other things, he is credited with "the discovery of the screw auger" and a device for automatically opening and closing furnace flues. It is said by historical writers that in 1763 Henry built a steamboat driven by paddle wheels, which operated with a fair measure of success until it was sunk by an accident. Henry, who was thirty-four years old at the time and quite capable of building a boat as far as inventiveness, initiative, mechanical ability, and means were concerned, probably did not build the boat as claimed, and no reliable evidence to support the contention is available. However, it is known that the successful armorer, filling many important posts during the Revolution (including treasurer of Pennsylvania), talked of the possibility and future of steamboats to Thomas Paine in 1778 and, three years prior to that time, had discussed the matter at length with the mathematician Andrew Ellicott. In the early 1780's, when the ardent duties and responsibilities in the Revolution permitted, William Henry made drawings of a steamboat with wheels to be turned by the force of high-pressure steam, which he planned to submit to the American Philosophical Society, but other important work and demands on his time caused Henry to lay the project aside. However, he did not lose interest in the possibility of building and operating steam-driven boats.

On August 29, 1785, John Fitch laid his steamboat ideas before Congress and in September presented a model, with a written description of his invention, to the American Philosophical Society. Shortly thereafter, passing through Lancaster and hearing of Henry's interest in steamboats, Fitch called upon "the great man" and was shocked to learn and see physical proof in the form of drawings that another mind before his had conceived the idea of driving a boat through the water by steam. But William Henry was unique among all the inventors of the steamboat on both sides of the Atlantic. He informed Fitch that although he was years ahead in considering and scheming on the designing, building, and operating of boats propelled by steam, yet he would lay no claim to priority of invention, but would "frankly give it to you as you are the first publisher of it to the world." Furthermore, Henry gave Fitch some practical help, for Fitch tells us that Henry "frankly offered to make a model [of a steam wheel] at his own expense and let me have it." It is apparent that the magnanimous, broad-gauged, and big-hearted William Henry was a very different type of man from another "inventor of the steamboat," Robert Fulton, who also came from Lancaster, Pa.

John Fitch, "Mechanical Genius" and "Inventor of Steamboats"

John Fitch was born in Connecticut (Windsor, Hartford Township) on January 21, 1743. He was the son of a farmer and was apprenticed in boyhood to learn the business of clockmaking. Buying his release for eight pounds with borrowed money four months before his indenture had run out (because of the character of his employer), young Fitch set up as a brass founder, paid off all his debts, and did well. He married foolishly and in January 1769, when twenty-six years old, left his native country. After wandering around for some time, Fitch drifted to Trenton, N. J., where he secured employment with James Wilson as a silversmith. Soon Fitch was in business for himself in one of the best of all colonial trades, and records show that in 1773-1775 he employed seven journeymen, including his former employer (who was a drunkard), and did a big volume of diversified and profitable business. The War of the Revolution intervened, and Fitch petitioned for a commission. He was elected a lieutenant of militia, and soon, as armorer to the state of New Jersey, he was engaged in preparing guns and other weapons for the troops during the early part of the war. In his enthusiasm, Fitch worked on Sunday, and for this dreadful offense he was expelled from the Methodist Church. When the British marched into Trenton, they destroyed his workshop, and Fitch fled to Warminster in Bucks County and later was at Washington's encampment at Valley Forge.

For successfully undertaking to supply the troops with desired tobacco and beer, Fitch was paid well in Continental paper, which he used to buy warrants for western lands. His thoughts now turned to Kentucky and the surveying and ownership of lands. Having learned something of surveying in his boyhood, in 1780 Fitch obtained an appointment as assistant surveyor from the state of Virginia, and from this time up to the spring of 1785, he did a great deal of surveying and mapmaking in Kentucky and Ohio. While engaged in surveying on the banks of the Ohio River, Fitch had his first vision of a boat that could be driven against the current by power other than human hands or a favorable but erratic wind, and "he thought it impossible that God in his wisdom had created a river with such length and irresistible current without giving to man some power of overcoming the force of the water and being able to navigate it up as well as down."

In March 1782, Fitch attempted to transport a cargo of flour from Pittsburgh down the Ohio to settlers on the frontier and was captured by Indians. He passed into British hands and figured in an exchange of prisoners, reaching New York on a sailing ship by way of the St. Lawrence and North Atlantic on Christmas Day of 1782. This voyage at sea is of interest because John Fitch, the "inventor of steamboats," wrote: "I much dreaded the going around by sea, as I was born a natural coward to the water, and solicited earnestly that I might be sent across with the Vermont people by the way of Crown Point, but to no purpose." The West called again to Fitch, and he spent most of his time during the next two years interested in western lands—surveying, mapmaking, etc. It is said that he produced "the only map known to have been drawn, engraved and printed by a single person."

In April 1785, Fitch was back in Bucks County, Pennsylvania, where he had many friends. Forty-two years old and afflicted with rheumatism, he was hobbling along a country road with difficulty while returning from a religious meeting when he was passed by a local gentleman and his wife traveling comfortably in a carriage drawn swiftly by a spirited horse. Fitch's first reaction was a wish that a poor man could travel by road in a conveyance without the expense of maintaining a horse, and the thought flashed through his mind that carriages and wagons to transport people and goods could be driven by steam. Fitch had already proved himself to be both skilled and versatile as an artisan, and it is generally admitted that he was "a mechanical genius." In the spring of 1785, he was aware of the expansive power of steam, but being ignorant at the time of the existence of the steam engine, he set to work to invent a vehicle that might be propelled by steam on land. Discouraged by the roughness of the roads, he abandoned the development of the automobile. His Ohio River vision returned to his consciousness, and he decided to concentrate on steam transportation on water, for he felt that "water offered less resistance to the propelling power and steam might be applied with more success to boats" and drive them against the force of any river current or ocean tide.

Fitch made a drawing showing how he felt that he could use the power of steam to move a boat through the water, and he carried his plan to the Rev. Nathaniel Irwin, the local pastor, to look at. Here he was shocked to discover, by looking through Martin's PHILOSOPHIA BRITANNICA, that steam engines were known in England and that the book contained descriptions of the Thomas Savery (1698) and the Thomas Newcomen and John Cawley (1705) atmospheric engines. Fitch tells us: "I was amazing chagrined. . . . I did not know that there was a steam engine on earth when I proposed to gain a force by steam." The father of the American steamboat felt at first as if he had been cheated out of a great invention, but after thinking the matter over, he decided that as no one had designed or built an operating steamboat, he would go forward energetically; for after all he had thought that his biggest problem would be the building of a steam engine, and if other men had succeeded in making such engines, the task was not impossible, and what they could do, he could do also. If Fitch had lived in England, he would have been able to see and—if he could have raised the funds—acquire by purchase not only the latest improved type of Newcomen atmospheric engine but also the new type of engine invented by James Watt in 1763 and improved in 1769. This was a single-acting engine, with a separate condenser and air pump, and had been further improved in 1781 and again in 1782, when it was made double-acting, capable of driving a revolving shaft, and relatively economical in the use of steam and, therefore, of boiler demands and fuel. However, Fitch had no such contacts and no knowledge of the development of the steam engine in Britain. He had to design an engine himself, and he set to work with both courage and confidence. Some historians say that Fitch built a model engine, installed it in a model boat, and tried out the model with its brass machinery, endless belt, and paddles in a small stream in Southampton Township, Bucks County, but this is doubted. Fitch did build a model of a boat 23 inches long and 4¾ inches beam, and attached to one side was an endless belt running fore and aft around wheels and carrying six flat broad paddles, which were designed to dip into the water and push or drive the boat ahead.

In August 1785, Fitch took his model to Philadelphia, Princeton, etc., and exhibited it to the provosts of the University of Pennsylvania and of the College of New Jersey and to others, who gave him letters in which they expressed their "belief in the practicability of applying steam as the motive power for vessels." With these certificates, Fitch went to New York, where he laid before Congress, on August 29, 1785, a petition for aid to complete his invention on the ground that it would facilitate the internal navigation of the United States and was "adapted especially to the waters of the Mississippi." Nothing came of this, but the Spanish minister, it would seem, with his eye on the Mississippi, was willing to extend aid provided the invention was secured exclusively for the Spanish king; to this condition, Fitch would not consent.

In September 1785, Fitch laid before the American Philosophical Society the model of his steamboat. In the fall of the year, he endeavored to interest Patrick Henry, governor of Virginia, in the invention and applied to the Virginia, Pennsylvania, and Maryland legislatures for assistance. An attempt to induce the state of New Jersey to appropriate £1,000 of loan certificates for the construction of a steamboat failed, but the New Jersey legislature passed a law giving to John Fitch for fourteen years the exclusive right of "making and using all and every species of boats or water craft that might be propelled by the force of fire or steam" in the waters of that state. With this franchise, Fitch succeeded in forming a company in Philadelphia for conducting experiments and developing his invention. Forty shares were issued, of which Fitch kept half and sold the balance for the seemingly ridiculously small sum of only $300 to fifteen different investors.

To build a steamboat, Fitch had first to construct a steam engine, and this he did with the assistance of Henry Voight, a Philadelphia clock- and watchmaker. First, a working model with a cylinder of only one inch in diameter was attempted, and this proved far too small for experimental purposes. An engine with a three-inch cylinder was constructed as well as a skiff, in which a variety of means of propulsion was tried out, but whether engine driven or operated by hand power is uncertain, for the engine was too small to do much useful work. Nevertheless, Fitch and Voight tested several devices that they had designed to drive the skiff, including an endless chain carrying paddle boards (like Fitch's original model), "a screw of paddles," etc., but the propelling mechanism apparently took too much power to operate until Fitch remembered how the Indians paddled boats along the western rivers and set out to duplicate their motion by paddles operated by steam-driven machinery. On July 27, 1786, Fitch and Voight operated the boat successfully, and although the mechanism was crude, cheapness being the prime essential, Fitch declared his invention was now complete, as his boat moved (and beat river boatmen in a race), the model steam engine worked, the cranks operated effectively, and the paddles rowed. "We have tried every part," Fitch wrote, "and reduced it as certain as anything can be that we shall not come short of 10 miles per hour." Fitch called a meeting of his stockholders. He wanted authorized "a boat of 20 tons burthen and a 12-inch cylinder," but the members of the company had lost interest, and Fitch was dashed to the depths of despondency by the seemingly hopeless task of interesting private capital in his invention and by the refusal of any of the states to loan him money to perfect his mechanism and build a commercial steamboat. Delaware gave him an exclusive monopoly in steamboats on February 3, 1787, New York on March 9, and Pennsylvania on March 28, but none would give him financial assistance, although the Pennsylvania legislature turned down his request by a close vote after a committee had recommended a loan of £150.

In February 1787, after seven months' delay, Fitch succeeded in reorganizing his company following the receiving of the exclusive right to all steamboats granted him by Delaware. When he commenced to build a new engine with a 12-inch diameter cylinder, he placed it horizontally and ran into trouble; the wooden caps to the cylinder leaked, and he had difficulty with his design of valves and the condenser. A vertical engine had to be substituted, and Fitch, in a few months, tried to solve problems that had taken Watt years to understand and handle effectively and with which, if Fitch had been in England, he would not have been bothered. He encountered great difficulties in working on his steam engine and machinery, since no mechanics were available and he was compelled to use "ordinary blacksmiths." It is said that "producing very imperfect machinery [by unskilled workmen] greatly harassed Fitch and was the cause of repeated failures and accidents." When the steamboat actually moved, it was found that the boiler was inadequate to supply the amount of steam required. Fitch had trouble in influencing his backers to furnish money to provide a larger boiler, but it was installed in August 1787. When the boat was tried out, Fitch's disappointment was intense, for it made only three and a half miles an hour; nevertheless, this was the first steamboat in the world to move consistently and that, after its first trial, was still in existence and ready to start out again. In France, Jouffroy, the only inventor of a steamboat to challenge Fitch's priority, using an English Newcomen atmospheric engine (made at Lyons), in June 1783 had moved a boat on the Saône; but it had crawled at a speed of only two miles an hour for fifteen minutes, and then both the hull and machinery had collapsed and been destroyed so that it could never be used again. Robert Fulton, in August 1803, twenty years after Jouffroy and sixteen years after Fitch, made a trial run of his first steamboat on the Seine at Paris and, instead of making 16 miles an hour as predicted, showed a speed of "2,400 toises an hour," or only 2.9 miles.

The first sizable Fitch boat was generally considered a success and a "seven days' wonder." The trial made on August 22, 1787, occurred at the time when the Constitutional Convention, attended by delegates from all the states, was meeting in Philadelphia. It is said that "the Fitch steamboat was propelled on the Delaware in the presence of nearly all of the members of the convention who framed the Federal Constitution." Fitch himself wrote: "There were very few of the convention but called to see it, and do not know whether I may except any but General Washington himself; the reason why he omitted it, I do not pretend to say." (Washington was a champion for the "mechanical genius" of Rumsey, whose "pole-boat"—not operated by steam—he had enthusiastically endorsed, and henceforth he was pro-Rumsey and anti-Fitch in sympathy and in the exercise of his influence.) Notwithstanding the attitude of Washington and of Jefferson toward Fitch, the Virginia delegates, led by Governor Randolph, "were pleased to give it [the steamboat] every countenance they could," and the day after William Samuel Johnson, a leading Connecticut delegate, had seen the trial of the steamboat, he wrote: "Dr. Johnson presents his compliments to Mr. Fitch, and assures him that the exhibition yesterday [August 22, 1787] gave the gentlemen present much satisfaction. He himself, and he doubts not the other gentlemen, will always be happy to give him every countenance and encouragement in their power, which his ingenuity and industry entitles him to."

Other delegates ardently expressed their satisfaction and congratulated the inventor on his success, and one wrote that he was "on board the boat and saw the experiment succeed." Some stated the speed as "four" or "nearly four miles an hour" and "faster than a person can walk on good ground." Among the prominent men present at the test of the Fitch boat who wrote certificates of successful performance were Dr. John Ewing, provost of the University of Pennsylvania, and the Philadelphia mathematician Andrew Ellicott (friend of William Henry, of Lancaster, Pa., who was early interested in steamboats). David Rittenhouse, the famous astronomer, under date of December 12, 1787, in Philadelphia, gave the following affidavit:

This may certify that the subscriber has frequently seen Mr. Fitch's steamboat, which, with great labor and perseverance, he has at length completed; and has likewise been on board when the boat was worked against both wind and tide, with considerable velocity, by the force of steam only. Mr. Fitch's merits in constructing a good steam engine, and applying it to so useful a purpose, will no doubt meet with the encouragement he so richly deserves from the generosity of his countrymen, especially those who wish to promote every improvement of the useful arts in America.

On November 7, 1787, the legislature of Virginia recommended the passage of a law to encourage the rights of Fitch in the use of the steamboat, but limited to three years the time given Fitch to produce a practical, operating craft. In March 1788, Fitch presented to the Continental Congress, in New York, a petition for assistance, wherein he set forth the great importance of steamboats, especially in western waters, in developing the resources of the country and increasing the value of the public lands. The report of the committee of Congress was favorable, but no action was taken on it because of the limited powers possessed by that body under the Confederation.

Fitch was greatly dissatisfied with the speed of his boat, although the mechanism, it is said, worked perfectly, and decided that more power must be applied. He had a new cylinder, 18-in. diameter, cast in New Jersey, but this was defective and had to be discarded.

During the winter of 1787-1788, the old Fitch propelling machinery was placed in a new boat 60 ft. long and 8 ft. beam, and the oars, or paddles, of a snow-shovel type, were placed at the stern instead of at the sides. A trial run from Philadelphia to Burlington, with many guests aboard, was made in July 1788, at the conclusion of which the pipe boiler, newly installed, sprang a leak; repairs were necessary, and there was a shortage of money. Shortly afterwards, however, the trip from Philadelphia to Burlington and return was made successfully and was repeated several times during the late summer and early autumn without any accident. On October 16, in the presence of many persons of national prominence, the boat made the run, and the guests and observers certified that, notwithstanding the current against them, "the boat went at least four miles an hour." Fitch maintained, however, that to render the vessel profitable "against the competition of sailing-packets and land-stages, it was necessary that she should be able to make the distance to Trenton, thirty-eight miles, in five hours"—a speed of about 7½ miles per hour. The sum of £1,600 had been spent in the enterprise of developing Fitch's steamboat up to this time, but to proceed further an auxiliary company had to be formed, with forty new shares issued at £10 each.

A new engine cylinder of 18-in. diameter was ordered in March 1789, and an entirely new steam engine was built. The boat, with the new machinery, made several trips, but defects in the mechanism interfered with the complete success of the invention, and the experimenters and investors were still further disheartened by the partial destruction of the vessel by fire. In the spring of 1790, the machinery, after repairs had been made, was tried again in the reconstructed boat (some historians say "a new and better modeled boat"), and a successful trip was made on April 16 against a severe northeast storm. It was of this day and this trial that Fitch wrote:

Although the wind blew very fresh at the northeast we reigned Lord High Admirals of the Delaware, and no boat on the river could hold way with us, but all fell astern, although several sailboats, which were very light, and heavy sails, that brought their gunwales well down to the water, came out to try us. We also passed many boats with oars, which were strong manned, and no loading, who seemed to stand still when we passed them. We also ran around a vessel that was beating to windward in about 2 miles, which had about 1½ miles start of us, and came in without any of our works failing. . . . Thus has been effected by little Johnny Fitch and Harry Voight one of the greatest and most useful arts that was ever introduced into the world.

Shortly thereafter a scientific test was made of the steamboat's speed over an accurately measured mile on the river's bank, and poles, sights, flags, and exact watches were used.

At a time when the tide was slack and the river, it was said, "absolutely motionless," the Fitch boat, with a flying start, dashed over the course, the stern snow-shovel paddles never missed a stroke, and all the timers reported the speed as "8 miles an hour." This was declared by all to be fast enough to enable the steamboat to compete with the stages that ran along the Delaware, and it was a speed that was not even approached by any steamboat designed and built by Robert Fulton or his associates throughout his entire lifetime.

In the GAZETTE OF THE UNITED STATES, issue of May 15, 1790, appeared the following:

Burlington, May 11, 1790. The friends of science and the liberal arts will be gratified in hearing that we were favored, on Sunday last, with a visit from the ingenious Mr. Fitch, accompanied by several gentlemen of taste and knowledge in mechanics in a steamboat constructed on an improved plan. From these gentlemen we learn that they came from Philadelphia in three hours and a quarter, with a head wind, the tide in their favor. On their return, by accurate observations, they proceeded down the river at the rate of upward of 7 miles per hour.

A cabin had been put on the boat by the shareholders, which Fitch swore was unnecessarily high and slowed up the boat; but the financial interests were now in the saddle, and Fitch was no longer supreme. At times, his views were not considered of much, if any, importance. The company decided to put the steamboat into commercial operation and voted an assessment of £10 per share to build a second boat in order to meet the requirements of the Virginian monopoly.

On June 5, 1790, the Fitch steamboat, with Lewis Rue and John Shaffer on board, steamed 90 miles in 12½ hours, which was at an average speed of about 7¼ miles per hour for over half a day—an excellent endurance performance with the high deckhouse in position and the boat ready for service. Commencing with the issue of June 14, 1790, the FEDERAL GAZETTE and other newspapers carried the following advertisement:

The Steamboat is now ready to take passengers and is intended to set off from Arch Street Ferry every Monday, Wednesday, and Friday for Burlington, Bristol, Bordentown, and Trenton, to return on Tuesdays, Thursdays, and Saturdays. Price for passengers 2s. 6d. to Burlington and Bristol; 3s. 9d. to Bordentown; 5s. to Trenton.

It is significant that Fitch's pioneer steamboat was unnamed. There was no other steam-driven vessel on the Delaware, in any United States waters, or operating anywhere else in the world at that time, so the Fitch boat was always referred to as *The Steamboat*.

Just prior to the time that the Fitch steamboat commenced her regular runs, Governor Mifflin and important members of the council and government of Pennsylvania boarded the world's pioneer steam-propelled vessel and took a trial run in her. After a successful trip, these gentlemen were so pleased with the boat and her performance that they presented the craft with a set of flags.

Between the first trip of the advertised service (in June) and September 12, the Philadelphia newspapers contained twenty-three advertisements stating the times of twenty-one trips. Some of these were to Chester, to Wilmington, and around the Schuylkill to Gray's and the Middle Ferries. During the summer and early autumn, the steamboat is said to have traveled nearly three thousand miles, and according to Fitch's journal no breakdown occurred that could not be repaired in an hour or two.

The mechanical success of Fitch's steamboat encouraged the company to undertake the construction of a larger one to be named the *Perseverance* and to be designed for possible use on the Ohio and Mississippi rivers. It was planned, when this steamer was completed, to send it with the older boat to Virginia in order to comply with the terms of Fitch's privileges, which were deemed important, as they involved the right of navigation of the Ohio. Once more Fitch was handicapped by lack of money, and the work of building progressed very slowly. Moreover, when the boat was nearly finished, a violent storm detached her from her moorings, blew her ashore on Petty's Island, and inflicted great damage. Before she could be got off and repaired, the period specified in the Virginia law had expired, and on the approach of winter, work was abandoned.

Contemporary writers tell us that *The Steamboat,* plying between Philadelphia and Trenton in the packet service, made about forty trips and operated satisfactorily, but that the people would not patronize a boat "driven by fire and a dangerous steam engine." James T. Flexner, in STEAMBOATS COME TRUE, says:

> Money has a way of determining events, and despite its efficiency Fitch's steamboat did not operate at a profit. On a better than average day, for instance, only seven passengers boarded the boat at Philadelphia—two for Trenton, one for Bordentown, one for Bristol and three for Burlington—a total take of 20 shillings, while the trip cost the company 30. Although the steamboat went faster than a river sailboat with anything but a following wind, the stagecoaches reached Burlington in an hour and a half less time, and the fact that the steamboat charged only half the coach fare did not seem to overcome the difference. Even when the directors advertised ridiculously cheap trips on Saturday to that amusement center, Gray's Gardens on the Schuylkill, most people used the more expensive regular ferry. An attempt to lure passengers by serving sausages with beer, rum or porter in Thornton's elegant cabin failed materially to increase business. The citizenry still preferred traditional methods of travel.

The Delaware was a bad river on which to operate a steamboat in competition with land transport, as the roads on its level banks were excellent for fast stagecoach trips. Fitch would have had a much better chance to win patronage and make money on the Hudson River, and if he had had an opportunity to build and operate steamboats on the Mississippi, Ohio, and western rivers, he would have been eminently successful, both financially and mechanically. Fitch was at all times fully alive to the future of steamboats on the Mississippi and western rivers, and he tried without success to get western members of Congress and businessmen interested. He endeavored to find partners to co-operate with him in building a boat in Pittsburgh, which he guaranteed would ascend the Ohio River, against the current, at the rate of 100 miles a day. It was on the banks of the Ohio that Fitch had his first vision of a boat driven by the power of steam. Writing to General Gibson (who declined to back him), Fitch said: "I am determined that the navigation of the Mississippi and Ohio shall be made easy, whether the western people will have it or no. I really pity men who have worried at the oar [or pole] these six thousand years past and am determined to relieve them."

When the owners of *The Steamboat* saw that the vessel was not operating at a profit, they "cooled off" on their investment, changed their minds in regard to the assessment on the capital stock, and proceeded to try to build a second boat to hold the Virginia monopoly on credit. When this boat, the *Perseverance,* was wrecked, the company, which had decided to discontinue steamboating on the Delaware because of operating losses, resolved to sell such parts of *The Steamboat* as could be disposed of and put the proceeds into the repairing and completion of the larger *Perseverance,* which they hoped to sell for use in some waters other than the Delaware. Fitch and Voight, his assistant, who had been working together as boatbuilders as well as engineers became "on their uppers" and had to look around for work that would provide a means of existence. Voight secured a job as coiner at the mint, and although Fitch applied for many government positions, he failed to land one. Gradually, the friends and associates of years pulled apart. Voight, as an outsider, criticized Fitch and claimed that he, at a cost of $100, could straighten out the *Perseverance* troubles in three days and have her steaming 9 miles an hour. This was a ridiculous statement made to annoy and humiliate Fitch, for the *Perseverance* at the time was probably not much more than two-thirds finished. However, Fitch had become a mere employee of the two or three directors who were still interested in salvaging the company. These men—and not Fitch—bossed the work on the boat and her machinery. Fitch borrowed to the limit of his credit and raised a little money on some western lands; then, after this was all spent and he was absolutely impoverished, he was compelled, in great sorrow, to abandon his attempt to complete the construction of his steamboat.

Fitch was granted a meaningless national patent for a steamboat on August 26, 1791, and his rivals, Rumsey and Stevens, received similar patents; the result was that the political influence of Stevens and the prejudice of Washington and Jefferson in regard to Rumsey greatly weakened the position of Fitch, the "inventor of steamboats." Fitch, who should have been the first beneficiary of the new federal patent law, was its first victim, and it killed all the chance that he ever had of encouraging private capital to back him and his invention. He was rightly disgusted, especially at the general attitude of Jefferson, the real head of the national patent committee of three, and whereas Fitch did not hesitate to express himself, this action of the Federal Government was really "the last straw" and broke the spirit of Fitch—notwithstanding the fact that he courageously tried to carry on. In a letter to David Rittenhouse dated June 29, 1792, Fitch requested "an advance of £50 to finish the boat" and, with strong faith in his invention, wrote: "This, sir, whether I bring it to perfection or not, will be the mode of crossing the Atlantic, in time, for packets and armed vessels." In 1793, Fitch visited France under a contract made by his company with Aaron Vail, U. S. consul at L'Orient, who had intended to introduce the Fitch steamboat in France and other European countries and had obtained a French patent on the boat dated November 29, 1791. However, the French Revolution put a stop to the project of building abroad, and Fitch returned to the United States via England, working his passage in a vessel bound to Boston, where he landed in 1794.

Most historians say that in 1796, under the patronage of Chancellor Livingston, Fitch successfully moved a boat 18 ft. long and 6 ft. beam by a screw propeller on Collect Pond, Manhattan Island, New York. The power for operating the screw was supplied by a steam engine with two small cylinders made of wood hooped with iron, and the screw-propelled boat "showed a speed of six miles an hour." It has also been said that Fitch's successful experiment in screw propulsion in New York gave to America "the honor of the origination as well as the practical, mechanical, and commercial development of the steamboat and of the screw propeller." It would seem better, however, to limit Fitch's honor to the invention of the steamboat and the endless paddle chain, side oars, and stern snow-shovel type of drives; for the propeller was used by David Bushnell for driving his submarine in 1775, or twenty-one years before Fitch (or someone said to be Fitch) operated a small boat by a screw on Collect Pond, New York.

Fitch, failing to interest capital in the East to exploit his invention of the steamboat, went westward. In Kentucky, there was some land to which he had obtained title in the early eighties, but he found it in the illegal possession of intruders, and when he wanted funds to carry forward his plan of building steamboats for use on the Mississippi River and its tributaries, he became involved in a series of vexatious lawsuits.

Thoroughly disheartened, worn out and sick in mind and body, John Fitch passed away on July 2, 1798 (when fifty-five and a half years old), at Bardstown, Ky., as a result of an overdose of a sleeping medicine prescribed by his physician. Thompson Westcott has written:

> A subsequent generation gave to Robert Fulton the fame and credit due to Fitch, although it is a matter of fact that Fulton obtained from Aaron Vail in France all of Fitch's papers, plans, and drawings. This was lamentably carrying out the foreboding prediction of Fitch, made in his lifetime: "The day will come when some more potent man will get fame and riches from my invention, but nobody will believe that poor John Fitch can do anything worthy of attention."

Thomas P. Cope, the founder of the sailing packet line service between Philadelphia and Liverpool, wrote of Fitch: "Often have I seen him stalking like a troubled specter with downcast eyes and lowering countenance, his coarse, soiled linen peeping through the elbows of a tattered garment." Speaking of a visit Fitch once paid to John Wilson, his boatbuilder, and Peter Brown, his blacksmith, Cope says:

> After indulging himself for some time in this never-failing topic of deep excitement [steam marine navigation], he concluded with these memorable words: "Well, gentlemen, although I shall not live to see the time, you will, when steamboats will be preferred to all other means of conveyance and especially for passengers; and they will be particularly useful in the navigation of the River Mississippi." He then retired, on which Brown, turning to Wilson, exclaimed in a tone of deep sympathy, "Poor fellow! What a pity he is crazy!"

James Rumsey, John Fitch's Controversial Rival

James Rumsey, who many Americans claim invented the steamboat, was born in Cecil County, Maryland, in March 1743, a few weeks after John Fitch was born in Connecticut. Rumsey first appears in the pages of history when he was employed as an innkeeper in the newly built resort town of Bath, W. Va., at the time that General George Washington, stopping at his hostel in September 1784 while riding through the village on a business trip, made contact with him and was shown a working model of a pole-boat that Rumsey had designed to walk upstream against a current. Washington was much attracted to the handsome and physically impressive forty-one-year-old innkeeper and with his ingenious invention and unconsciously started a controversy and bitter feud that was to last, apparently, for centuries when he endorsed Rumsey's invention in writing and gave the man his friendship. Washington saw two little model boats, with a paddle wheel between them, move through water flowing rapidly through a flat-bottomed trough by means of the wheel turning by the force of the current and operating poles reaching from the outside gunwales of the connected boats to the bottom of the channel. The result was that the boat walked upstream, and the stronger the current the faster it walked—and this with no power other than that supplied by the stream itself. Washington wrote a certificate at Rumsey's request and handed it to him, which stated:

> I have seen the model of Mr. Rumsey's boat constructed to work against the stream; have examined the powers upon which it acts; have been an eyewitness to an actual experiment in running water of some rapidity, and give it as my opinion (although I had little faith before) that he has discovered the art of propelling boats by mechanism and small manual assistance against rapid currents; that the discovery is of vast importance, maybe of the greatest usefulness in our inland navigation, and if it succeeds, of which I have no doubt, that the value of it is greatly enhanced by the simplicity of the works which, when seen and explained to, may be executed by the most common mechanic.

Prior to meeting Washington at the inn, Rumsey had given notice to the Virginia House of Delegates that he had invented a mechanical boat that would move upstream under its own power, but following the endorsement and acting, presumably, under the advice of Washington, Rumsey applied to the state for exclusive rights to use on its waters "boats which are constructed upon a model that will greatly facilitate navigation against the currents of rapid rivers." Because of Washington's approval of Rumsey and his scheme, Virginia promptly (January 1, 1785) granted him a ten-year monopoly of the use of his invention; Maryland followed shortly afterwards, while South Carolina promised rewards if the new type of propelled boat should in actual operation prove to be of public service.

At this time, Rumsey knew but little, if anything, of steam and certainly had done nothing along the lines of either producing or otherwise obtaining a steam engine and of devising means of using such power to drive a boat through the water; yet many historians affirm that Rumsey built a steamboat in 1784 and evidently confuse his pole-drive "walking upstream" boat model that intrigued Washington with a boat driven by a steam engine through the medium of a wheel and side paddles, or oars. Rumsey was ingenious and clever, and later, in controversy with Fitch over priority of invention of steamboats, he made claims of his intentions to experiment with steam; but the fact remains that his famous pole-boat, endorsed by Washington, had not involved steam and that he made no mention of the possible use of steam to that great man when he obtained a valuable certificate from him.

Rumsey's pole-boat was merely a mechanical attempt to use the current of a stream to operate poles and imitate the operations of men who poled vessels up rapid rivers. Whereas Rumsey most probably did devise a pole drive for a boat and was sure of the originality of the idea, yet the basic conception was old. It had been previously tried in the eighteenth century in Pennsylvania, but as far back as 1663, the Marquis of Worcester, in England, wrote of making a vessel, through the simple use of moving parts, "go against the stream, which the more rapid it is, the faster it shall advance." It is a far cry from moving a boat through river waters by pole contact with the bottom to propelling a boat through waters of any depth, still or moving, by means of steam power.

In the spring of 1785, Fitch had been "amazing chagrined" to find that his idea of using steam was not new, for at that time he first learned that steam engines had been built for some years in England. However, this did not affect his determination to build boats propelled by steam. He submitted his plans and a model of a steamboat to the American Philosophical Society and learned authorities at Philadelphia and on August 29, 1785, petitioned Congress for recognition and encouragement to develop his invention. This same year Rumsey was appointed chief engineer of the Potomac Canal Company by Washington, who wrote that he had "imbibed a very favorable opinion" of Rumsey's mechanical ability and had "no reason to distrust his fitness in other respects." Rumsey employed Joseph Barnes, his brother-in-law, to build a small boat and try in it his pole method of propulsion; also the use of steam power. This boat was evidently afloat before the end of 1785, but nothing definite is known about its machinery. Whatever mechanism was in the boat was removed when ice appeared in the river, and the boat was hauled out and placed in the cellar of a house for the winter. It is claimed that Barnes made two unsuccessful attempts to make the Rumsey steam-propelled boat move against the current of the Potomac in the spring of 1786, "many parts of the machinery being imperfect and some parts rendered useless by the heat of the steam." Rumsey lost his job as chief engineer of the Potomac Canal Company on July 4, 1786, and on September 9 his pole-boat, apparently without any steam engine or boiler aboard, was given a public trial. It is said that the boat, with four tons of passengers and stone on board, moved about two hundred yards upstream against the current. This boat was evidently a single hull, and it did not work as satisfactorily as would have a double hull with a paddle wheel between. Trouble was experienced in having the poles take a good hold on the river bottom. Later, Rumsey appeared to make a second test, but he did not relish the idea of making a failure in public, and not being sanguine of success, when seeing a crowd of people on the bank to witness the performance, he determined to make no further test run, "nor," he later wrote, "have I made any further experiments since."

Apparently in late 1786, Rumsey, having only a single hull, decided to discard pole-boat propulsion and concentrate on steam; but he wrote to Washington that he was changing his plans because he did not have the money to build a second hull to develop his pole-boat idea. About this time, Rumsey declared a lack of enthusiasm for steam propulsion until steam engines "could be reduced to such simplicity and cheapness as to make them of public benefit." The fixed idea in Fitch's mind was to drive a boat by steam. Rumsey's idea was to use steam or some other available power when he could not achieve success in propulsion by such more simple means as were exhibited in his pole-boat. Rumsey used a rudimentary form of jet propulsion of which he claimed to be the inventor; but the idea used was very old, and even if original to Rumsey as he claimed, it was old to the world. The idea of making a boat move by driving water out of its stern had been suggested many times prior to Rumsey's days. In 1730, John Allen had recommended that a pump be used for driving a boat and stated that the pump could be operated by a Newcomen, or "atmospheric, steam engine" (or "fire-engine"), which had been first used successfully in England for pumping water in 1705. Possibly, Benjamin Franklin had much to do with turning Rumsey's mind to jet, or pump, propulsion, for in 1785 he had prepared a paper on steamboats in which he had wrongly criticized paddle-wheel propulsion, and he endorsed the theory—crudely experimented with by Daniel Bernouilli, a Frenchman, in 1753—that if a stream of water was driven out of the underwater hull of a boat at the stern, its reaction on the water in which the boat floated would drive the vessel forward and in the opposite direction to the flow of the water expelled from the boat. Franklin suggested the use of a pump that drew water in at the bow and expelled it under water at the stern, and he added: "A fire engine [a Newcomen steam engine] might in some cases be applied to this operation with advantage."

Rumsey was apparently not the only American who around the mid-eighties was dabbling with the idea of jet propulsion for driving boats, which principle had been brought into the foreground of thought by Franklin's notes on steamboats. Fitch had tried to interest Arthur Donaldson, a Philadelphian of means who had a reputation for ingenuity, to back him in his steamboat project; but Donaldson "pumped Fitch dry," read Franklin's paper, promptly "invented" a steamboat of his own, and petitioned the Pennsylvania legislature to grant him a monopoly on the use of jet propulsion for driving steamboats, a principle that he claimed he had discovered. It is surprising that Franklin's mention of an idea that was then old should have led to the claiming by both Rumsey in Maryland and Donaldson in Philadelphia that the process had originated with them; whereas Rumsey, when Franklin made his notes, was interested only in pole-boat mechanical propulsion without the use of any power outside of the current of a stream, and Donaldson had never thought of steamboats until interviewed by Fitch, who showed him his drawings and, in his quest for money backing, discussed the state of the art and presumably mentioned Franklin's paper that was unfavorable to paddle wheels and referred more favorably to jet propulsion.

Rumsey, troubled with the problem of the weight of water in a boiler, decided to try a boiler with a number of pipes through which the flames and hot gasses from the furnace would pass. He claimed the invention of this fire-tube boiler, the idea of which was a great step forward in both stationary and marine engineering. But Fitch had also designed a boiler of this type and then had decided not to use it, as he felt that it could not be built at that time in a way to prevent leaking. The British also later claimed that Watt and others had made fire-tube boilers of this type.

In September 1787, Rumsey tried out his pump, or jet propulsion, steamboat. Barnes, his assistant and brother-in-law, tells us: "The boat moved up the river against the current with about 2 tons on board, besides the machinery, at the rate of 2 miles per hour." However, the fire-tube boiler opened up at several joints, the boat filled with steam and stopped, and the test had to be abandoned. After repairs were made, second and third trials were run, and more trouble developed with "the pipes of the machinery"; so Rumsey, after collecting affidavits declaring that his boat had really moved at a speed that was guessed to be 4 miles an hour, laid up the boat, and she never moved again. Rumsey had battled fiercely with Fitch for a few years in order to win priority for the invention of the steamboat, and in 1787, Rumsey, having the more influential friends and a mode of propulsion that (due primarily to Franklin) was more in public favor, was running nip and tuck with Fitch in recognition and the obtaining of state rights for exclusive use. There is some uncertainty in regard to the dates of the Rumsey trials, and Fitch had affidavits to show that the building of the Rumsey boat and the test run were about a year later than Rumsey claimed and that she moved under steam a very short distance at a speed much slower than a man would ordinarily walk. As against this wall of uncertainty and screen of secrecy, we have a clean, open record of Fitch's plans, experiments, failures, and successes, with dates, unquestioned public knowledge, and speed scientifically determined.

Fitch, in a pamphlet that he actually read to Rumsey in Philadelphia before he gave it publicity, discredits Rumsey's claims as an inventor or originator. The idea of jet propulsion was old, and Fitch himself had experimented with it. He added: "I am now trying an experiment and the machine is almost finished to propel a boat not by expelling water, but air." Rumsey made a great claim that the machinery of his steamboat was so much lighter in weight and so much more simple and less costly than that of Fitch that there could be no comparison between them. Rumsey quoted affidavits of ardent but irresponsible friends who claimed that the machinery in the Fitch boat weighed 7 tons and that in the Rumsey boat only 800 pounds. Another document gave the weights as 5 tons and 500 pounds, respectively, and the cost of the Fitch boat was guessed to be £300 and that of Rumsey not more than £20.

All such comparisons were ridiculous and made with a partisan enthusiasm absolutely void of truth. Rumsey himself wrote: "The difference there is in weight machinery and expenses between his steam engine and mine is enormous. . . . I can with truth assure the public that Mr. Fitch's boat, so loaded with machinery, complexity and expense . . . can never be useful."

Rumsey, without any boat to prove his claims but with its machinery loaded in a wagon, arrived in Philadelphia in the spring of 1788 with the moral backing of Washington, Virginians, and southerners in general. He had friends and was advocating a mode of propulsion endorsed by the great scientist Franklin, so whereas Fitch found it almost impossible to get funds to carry on his experiments (which were much more successful than those of Rumsey up to that time), his Maryland rival, when he started to organize a company, obtained influential backers of means quickly. The company formed to promote all of Rumsey's inventions, which were improvements in the application of water power to mills, his steamboat and pipe boiler, was named The Rumsean Society. This company tried to make a deal with John Fitch in regard to the development of the steamboat, but Fitch would have none of it. He was the inventor of the steamboat, and he would not compromise or share the honor with Rumsey. It is amazing that after endorsing Rumsey and having him elected a member of The Philosophical Society, The Rumsean Society—fortified with ample funds and influence—did not immediately embark upon the building of a steamboat to demonstrate to the world the quality and value of Rumsey's so-called invention; but this it failed to do, and it would seem that a majority of the stockholders thought much more highly of Rumsey's pipe-boiler idea and of his "inventions for raising water and improving mills" than they did of his pump, or jet, propulsion plans for driving a boat. There must have been a great measure of doubt in regard to the practicability and commercial value of the Rumsey steamboat, for they singled out the pipe boiler as the most valuable of the many Rumsey "inventions" and decided to send the designer abroad to patent the boiler ahead of Fitch, who they erroneously imagined was planning to do this very thing. About the time that Rumsey arrived in Europe, Fitch, in July 1788, drove a boat, in which was installed a pipe boiler, some twenty miles at a speed of 4 miles an hour independent of the current.

Rumsey, in July 1788, visited the great engine builder Boulton & Watt at Birmingham, England, and made an agreement with this firm that would have been of tremendous benefit to Rumsey and his American backers. However, Rumsey—ignorant, egotistical, and badly advised by a London friend of Benjamin Franklin—reneged, and the lifetime chance of Rumsey to obtain real engineering help and guidance was lost. Boulton and Watt informed Rumsey that he had no patentable invention in his pipe boiler, as they and others had worked with it. Neither had he any originality in the use of steam engines to propel boats "by the reaction of water confined in tubes and acted upon by pistons and oars; and also in rivers and canals by means of poles acting upon their bottoms." They added: "We shall immediately take such steps as will render any patent for that purpose of no avail." After making these definite statements of fact and policy, it is surprising that Boulton and Watt made no fight to prevent Rumsey from obtaining in England the patents that he applied for, but Rumsey had influential British friends whom Boulton and Watt apparently did not want to antagonize openly. They were undoubtedly right when they sized up the very presentable Rumsey as expecting "shadows to counterbalance substance" and as one who was no practical man and competent producer but a dilettante theorist who had but little knowledge of the road to the goal. On November 6, 1788, Rumsey received English patents covering variations of the pipe boiler; certain applications of jet propulsion to a boat; a combination of a pole-boat driven by steam in a method as set forth and a weird type of steam engine, whose only virtue was that it evaded Watt's patents, for it was fundamentally unsound and practically useless.

It seems clear that the pipe, or fire-tube, boiler was originated and first tried out in the United States, and in this Rumsey had a hand, although it is claimed that he pirated the idea from a man to whom Fitch had shown plans of his invention. Whether this is so or not, it is evident that Rumsey did design a water-tube boiler in which the water was carried "in narrow tubes bent in a spiral or zigzag form, . . . having the fire or flame applied to the outside of it." This type of boiler, which a century later was to become highly valued and gradually essential as steam pressures were increased to over 200 pounds to the square inch, did not interest Boulton and Watt at all. When they were first told of it, they advised Rumsey that if the idea was novel, as it probably was, they were disinterested in it, considered the invention valueless, and Rumsey could patent it or not as he saw fit, but, of course, at his own personal expense.

Rumsey soon discovered that the finding of influential friends and the obtaining of financial backing in England were two different things, and apparently he extended himself beyond the authorization of The Rumsean Society of Philadelphia. He ordered a boat of 100 tons burden, seaworthy enough to go to France or Holland, from Dover builders to cost 600 guineas and which he understood would be paid for by a wealthy Englishman named Whiting. When demands were made of the patron for money, none was forthcoming, for he was in debtors' prison, and Rumsey found himself personally liable. In some way or other, money to pay the bills was obtained, the boat moved to London, and the machinery installed. Rumsey wrote: "I am quite sanguine. She is a beautiful vessel. . . . I have called it *The Columbian Maid,* but think to change it to *The Rumsean Experiment* as soon as success is ascertained." In September 1789, Rumsey stated that he expected his new boat (which was by far the biggest steamer built or projected) to travel 150 miles a day under her own steam and move at times as fast as 10 miles an hour. In the winter of 1789-1790, experiments were made in secret with the boat's propelling machinery when she was secured to a London dock, and the results of this costly jet propulsion experiment were most distressing. On February 27, 1790, Rumsey wrote: "Every possible disappointment attended my experiment. . . . When it was all put together, it proved so imperfect that almost the whole of it had to be done over again." Rumsey was in financial straits; rumors of failure and of the inventor's lack of funds, backing, and credit filled the air. He dodged bailiffs and absented himself from his lodgings, but by mental resourcefulness kept the mechanics at work and by bluff and lying kept things moving. On March 25, 1790, he entered into a partnership that gave him some needed cash and credit to continue his experiments at the dock, and he did not dare to attempt to move the boat into the stream. On April 23, he wrote: "My vessel has not been tried. . . . The truth is I cannot get my machine perfect. . . . It would not do to let her loose, as I could not depend upon the continuance of the engine." Half a year later (October 24, 1790), Rumsey admitted that he had not yet moved the vessel by steam and declined to state when he hoped to do so. Rumsey's partners went bankrupt, and the inventor was threatened with imprisonment for debt, which most surprisingly he avoided. Rumsey had not been loyal to his Philadelphia backers, and when they learned of several of his acts, they demanded the return of funds advanced him, which he had used for his personal benefit and to further his ambitions and not in the interest of The Rumsean Society.

When Rumsey was at the end of his rope, he fortunately got a job on a British canal project that came to him because of his former connection with the Potomac company and paid him £10 a day. When in Lancashire in 1791, he said: "I invented a mill upon principles entirely new, . . . which it is evident saved me from destruction." He was somewhat elated that this new mill of his would make worthless everything in this line that he had previously sold to his Philadelphia backers. After patenting the mill on August 24, 1791, and commencing to build one, he raised some money on his improved prospects, returned to London, and temporarily quieted his creditors. His partners in the steamboat venture also had a stroke of good luck, and after more than a year's inactivity the work of tinkering on the machinery of the vessel was resumed. In December 1792, almost four years after he had contracted for the building of the boat at Dover in January 1789, Rumsey made another quiet test on the machinery of the vessel while she lay securely fastened to the London dock. He wrote: "It worked with good success. I think it was internally very perfect. . . . The vessel went forward against the tide and pulled hard to get from her moorings." A plan was suggested to have a public trial with influential people as invited guests, and Rumsey's partners talked of putting the newly invented and patented jet propulsion engines (on the so-called rocket principle) into British naval vessels. Rumsey was more cautious in his talk of an optimistic future. He had known too many failures, and he was never to see *The Columbian Maid* or any other boat of his move freely under her own steam and conclude a successful trial trip. James Rumsey suffered a stroke on December 17, 1792, and died the next day at the age of fifty years.

Early in 1793, Rumsey's partners made a river test of the boat, and a London newspaper said that "a pump of 2 feet diameter wrought by a steam engine forces a quantity of water up through the keel; the valve is then shut by the return of the stroke, which at the same time forces the water through a channel or pipe of about 6 inches square, lying above and parallel to the keelson, out of the stern under the rudder, which has a less dip than usual, to permit the exit of the water." Nothing is definitely known of the conditions surrounding this trial—distance, tide, duration or time occupied by the test, apparent or actual speed, etc. It was stated that the vessel made 4 knots per hour, but this was apparently a crude guess and not measured; moreover, the trial was on the Thames River, possibly with the current, and all river speeds are stated in statute miles per hour. *The Columbian Maid* evidently, after all the hullabaloo was over in regard to her "successful run" on the Thames, was deemed a failure, as she apparently did not engage in useful work and was considered unreliable, expensive, and impossible to operate at a profit. A contract that had been entered into by Rumsey with his partners specified that Rumsey should pay the partners £5,000 if the steamboat should prove to be a failure, and legal arbiters appointed by Rumsey's partners on the one hand and his heirs on the other ruled that the amount stated was payable to the partners by the Rumsey estate.

In the spring of 1790, about three years before the Rumsey English-built steamboat made her trial run on the Thames River and claimed a speed of 4 miles per hour, Fitch was operating a mechanically successful steamboat on the Delaware and in New Jersey on a regular schedule in trade. During that summer, the Fitch boat steamed from two to three thousand miles at a speed of from 6 to 8 miles per hour, depending on conditions, and the service was terminated not because of failure of the boat but solely because of lack of patronage and the losses sustained by the owners in operating her in competition with cheap and abundant means of land transportation.

James Rumsey, like John Fitch, was poor and an artisan with a farming family background; both had an inventive bent, but the two men were entirely different in appearance, disposition, and character. Rumsey was a fine-looking man, who made friends readily; he was suave, specious, a typical "mein host," with the characteristics of an opportunist politician, where character is subordinated to material advantage. Rumsey put on a good front, was selfishly ambitious, and had an undoubted measure of ability, but was flighty minded and could "lie like a trooper" and bluff his way out of difficult situations. Rumsey was too unreliable, irresponsible, and unprincipled for business associates to lean on. Indeed, in all respects except breeding and natural inventive and mechanical bent, he was the antithesis of "poor John Fitch," who was considered a more or less "wild crazy man" with no human appeal, decidedly eccentric, but with a very real Puritan idealism. Fitch, constantly buffeted by fate, was not only a man with a vision who spent his life to make his dream come true but also a man of high character and principles. His claimed fondness for whisky has apparently been grossly exaggerated and confused with his desire for congenial company in a world where his personality, appearance, and manner permitted him to have very few friends. In the last two or three years of his life, the broken, disillusioned, and shabbily treated Fitch used whisky as a solace in an effort to forget his shattering experiences. Alcohol never handicapped Fitch in his work or deprived him of the chance to show his genius. Only an unkind fate, the skepticism and lack of support and patronage of his fellowman, and his choice of a locality to demonstrate his invention kept Fitch from being hailed in 1790 as a great public benefactor.

Rumsey tried out his jet propulsion boat on the Thames River and failed, never getting it to the point that it could be tried out in commerce. Fitch, on the Delaware, presented a mechanically successful boat to the public, which refused to patronize it and thereby killed the project through operating losses. Fulton, seventeen years later, was fortunate in choosing New York and the Hudson to solicit public patronage, and although his boat was only half as fast as that of Fitch, Fulton found a public that lacked the timidity of the Philadelphians and their New Jersey neighbors. Moreover, Fulton put on a front as great as that of Rumsey, had a much better education, and was posted on all that had been done and was being done in the development of the steamboat; he pirated without scruples. Whereas even Fulton did not have the nationally known political friends of Rumsey (Washington, Jefferson, and Franklin), he had a moneyed social and political power in New York (Chancellor Robert R. Livingston) as a partner. Fulton became the inventor of the first commercially and financially successful steamboat through the smiles of a kindly fate seventeen years after poor John Fitch, without funds, friends, or education, had operated a much faster boat, which was a mechanical success, all one summer on the Delaware. However, he could not make his boat pay, for no matter how low he made the price of transportation, the public would not use it; whereas New Yorkers flocked on board Fulton's *Clermont,* and they and not the boat itself made Fulton's Hudson River steamboat successful. Dame Fortune, which was neutral as far as Rumsey's efforts to produce a steamboat were concerned, smiled on Fulton, but gave Fitch throughout his career "a very dirty deal."

John Stevens, Jr., of New Jersey, an Important Contributor to the Art of Marine Engineering

John Fitch, in his quest for backers of means to assist him in the development of a steam-propelled boat, contacted Colonel Cox, a wealthy New Jersey man, who was impressed with the idea and mentioned the matter to his son-in-law, John Stevens, Jr., also a man of means. Among the signers of a petition made by Fitch to the New Jersey and Pennsylvania legislatures for a monopoly for his steamboat appear the names of both Cox and Stevens. On March 28, 1786, New Jersey passed a law granting to John Fitch for fourteen years "the sole and exclusive right of constructing, making, using and employing or navigating, all and every species or kinds of boats or water craft, which might be urged or impelled by the force of fire or steam, in all the creeks, rivers, etc., within the territory or jurisdiction of this state." Colonel Cox and John Stevens, Jr., in signing John Fitch's petition to the New Jersey legislature, had fully endorsed the ideas of Fitch and given him credit for the invention of the steamboat, and they had informed him that if exclusive rights were granted him, as they firmly believed would be done, Fitch should not want for money to put his scheme through and perfect the invention. Cox had brought to Stevens' attention the idea of using steam to drive boats, and it intrigued the young man. Cox and his friends went back on their promise to finance Fitch; only a paltry $20 was advanced to Fitch by Cox, and none of the rest, including Stevens, lent Fitch any funds whatsoever or subscribed for any shares. John Stevens, Jr., himself set to work to design and build steamboats; moreover, he interested Robert R. Livingston, of Clermont, N. Y., in the idea, and Livingston later, after acquiring much knowledge from Samuel Morey, of Orford, N. H., and failing in his attempts at invention, made a deal with Robert Fulton, then in Europe, which resulted in 1807 in the successful navigation of the Hudson River by steamboat. John Stevens, Jr., a man of ability, initiative, industry, and means, became a steamboat inventor of prime importance, but he was the intermediary that linked John Fitch, the originator of the world's pioneer successful steamboat in a mechanical or engineering sense, with Robert Fulton, who many years later, when conditions were more propitious, designed and built with Livingston's and Stevens' support the first steamboat that was operated commercially at a profit.

In the fall of 1788, John Stevens appeared in the picture of steamboat development caused by the controversy in New York between Fitch and Rumsey. Ignoring his former endorsement and promised support of Fitch in 1785-1786, Stevens favored Rumsey, possibly because of the influential backing of the man (Washington, Jefferson, Franklin, etc.) and also because he at that time preferred jet propulsion (as did Franklin) to wheels, mechanical oars, etc.; moreover, Rumsey was talking much of his pipe boiler—which Fitch had invented but was backward in using because of its great tendency to leak. At the end of 1788, Stevens came out boldly as an inventor, and while declaring that neither Fitch nor Rumsey had "brought their schemes to that degree of perfection as to answer any valuable purpose in practice," he requested of the New York legislature an exclusive privilege for his design of a pipe boiler and a steam engine to be used in the jet propulsion of boats. Stevens' modification of the existing Fitch and Rumsey designs for a pipe boiler was without merit, and his engine not only had no originality but also merely resurrected a principle that had been tried out and discarded for its inefficiency many long years before. At this time, Stevens was a landed gentleman, had done no work with his own hands, had built no engines or boilers, and had made no models; his work was all on paper.

Stevens, having been refused a patent by the New York State legislature and striving to obtain a national monopoly for his steamboat ideas, was influential enough to get Congress, on April 10, 1790, to set up a patent commission consisting of three heads of government departments (law, state, and war), of whom Jefferson, the friend and advocate of Rumsey, was the most important. The first patent law of the United States was enacted to deal with the claims of inventors of steamboats, but the action of the commissioners in 1791 (a year after Fitch had operated his boat for a whole summer with mechanical success in commerce competitive with other forms of transportation) was ridiculous. Fitch, Rumsey, and Stevens, the three applicants for exclusive patents, were each given a certificate repeating exactly the wording of his petition. Each of the claimed inventors was given all he asked for. The patent commissioners did not pass on the relative merit of the claims, and in giving each of the applicants all, they gave him nothing, but merely left the matter of priority, scope, and rights to litigation and to decisions of the courts. No wonder a poor man such as Fitch was disgusted! He had petitioned for a hearing before, and a decision in regard to a national exclusive patent by, a jury of his peers; now he saw nothing but expensive controversy ahead, where a pirate with means and influence would ultimately cheat a poor inventor out of his rights of exclusive use.

Stevens continued to design steamboats and machinery on paper, but in 1793 he employed an English mechanic who had once worked for Fitch. This mechanic, named John Hall, did not stay long with Stevens, whom he accused of being thoroughly impractical and flighty; while Stevens said Hall had to be dismissed for drunkenness. In 1796, Stevens, with Livingston, came in contact with Samuel Morey, the New Hampshire inventor of a steamboat, and learned much from him, as Morey developed and made tests with a stern-wheel steamboat on the East River and Long Island Sound, during which his experimental craft attained a speed of 5 miles an hour and the engine and boiler worked well. In 1796-1797, Stevens had Nicholas J. Roosevelt, a competent mechanic with a small engine-building shop at Belleville, N. J., do some work for him, and he brought Roosevelt in touch with Livingston and laid the groundwork for the monopoly organization that later invaded the West and built steamboats at Pittsburgh to operate on the Ohio and Mississippi rivers.

When Livingston's scheme for propelling a boat by driving water from the stem with an internally housed high-speed wheel failed, his brother-in-law, Stevens, who owned part of the boat, in 1797 resorted to the use of John Fitch's stern paddles, motivated by cranks, and merely increased the number and changed the arrangement of the paddles. The boat for whose construction Livingston was evidently entirely responsible, for he had boasted of its being his design, proved entirely too light and weak for a steamboat, and as Nicholas Roosevelt, the builder of Stevens' machinery, had predicted, when the machinery was installed and operated, it fell apart. This experience so impressed Stevens that he sought to produce an engine to propel a boat that would have no pistons and tried to eliminate the excessive vibrations that tended to injure the machinery itself and wrack to pieces any wood boat—no matter how well and heavily built. In 1802, Robert Livingston Stevens (the son of John Stevens, Jr.), who had been trained from early childhood in the use of tools, was of an age to help his father, and they, with such competent artisans as could be hired, built one of the most original and interesting boats ever constructed. In a hull 25 ft. long, with 5½ ft. beam, Stevens placed above the keelson a brass cylinder 8 in. diameter and 4 in. long, which contained two rotary blades, on which the pressure of the steam was exerted alternately. The high-pressure engine, which turned a screw propeller projecting from the stern of the boat, was on the principle of the modern steam turbine. Stevens used only the elasticity of high-pressure steam, dispensed with condenser, air pump, and valves, and employed a pipe boiler. He wrote: "When the engine was in the best order, her [the boat's] velocity was about 4 miles an hour. I found it, however, impractical on so contracted a scale, to preserve due tightness in the packing of the wings of the cylinder for any length of time. This defect determined me to resort again to the reciprocating [piston] engine."

Stevens, like Franklin, never thought much of the paddle wheel as a means of propulsion for a steamboat, and although he and Livingston had an understanding between them that was a sort of partnership in ideas and expenses for the development of the steamboat, after Livingston tied up with Robert Fulton in Europe, Stevens cooled off and repudiated the arrangement. Stevens declined in the early summer of 1807 to supply any funds or take any financial interest in the Fulton-Livingston North River steamboat *(Clermont)* building for use on the Hudson River, and he criticized the boat, saying that it was far too narrow for its length and designed purpose and that the screw propeller was much superior to paddle wheels. Stevens was right in his contention that *The North River Steamboat* lacked beam, and after operating about thirteen hundred miles in 1807 (about one-half the distance that the pioneer and much faster Fitch steamboat ran in 1790 without any lay-up for repairs), she was hauled out for reconstruction and rebuilt during the winter. In 1808 she operated with the same length of 149 ft., but had a beam of 18 ft. instead of the original 13 ft. and a ratio of length to beam of 8.3 to 1 in lieu of the former dangerous 11.5 to 1.

Stevens built an experimental high-pressure screw-propeller steamboat 29 ft. long in 1807, but he had trouble getting sufficient steam to drive his propellers at the required speed, and when the Fulton-Livingston boat (later named *Clermont* after Livingston's upriver estate) was in service, he unfortunately abandoned his high-pressure experimentations and commenced to design a more orthodox and demonstrated propelling machinery plant consisting of a Boulton & Watt type of engine operating twin side-paddle wheels. Stevens' boat had many improvements over Fulton's, both in hull and machinery (outside of the main engine). She was launched in April 1808 and christened the *Phoenix,* and on a run from Perth Amboy, a distance of thirty miles, she averaged a speed of over 5 miles an hour, which was about half a mile per hour faster than the original Fulton-Livingston *North River Steamboat of Clermont.* Stevens, who had earlier declined to enter into a partnership with Fulton and Livingston following the success of their initial steamboat, had suggested co-operation and a pooling of inventions, but Livingston, the influential politician, had secured a New York monopoly and refused to consider any equitable arrangement. Stevens attempted to defy the monopolists for a while and then decided to send the *Phoenix* to the Delaware, a journey of about a hundred and fifty miles on the open sea. This passage, the first ever made by a steamboat on the ocean, is usually described by historians as a bold, steady run of a Stevens-built propeller steamboat from the Hudson to the Delaware rivers, and it is implied that much of the time the boat was out of sight of land. Actually, whereas the passage was historic, the *Phoenix* was a side-wheeler and not a screw boat. She was escorted by a sailing schooner and required 13 days to make the run, as she anchored at night in protected waters and moved only in the daytime when there were but light breezes or calms and no seas. Stevens finally became an ally of the Fulton-Livingston monopolists and ran his *Phoenix* from Trenton to Philadelphia as part of a steamboat and stagecoach journey from New York to Philadelphia, which involved steamboat transportation from Albany to New York and from New York to New Brunswick, N. J., a short stage ride from New Brunswick to Trenton, and thence steamboat to Philadelphia. Stevens was evidently limited by the monopoly in building new boats, for by 1815, we are told, the Stevens family had constructed only three commercial boats as against seventeen by the Fulton-Livingston monopolists.

Nicholas J. Roosevelt, of New Jersey, Early Builder of Engines for Steamboats

Nicholas J. Roosevelt, the son of a New York City shopkeeper and the grand-uncle of Theodore Roosevelt (1858-1919), twenty-sixth president of the United States, was a humble mechanic and not, like Chancellor Robert R. Livingston, a member of one of the families that owned vast estates set up on the Hudson by Dutch feudalism. Roosevelt located his little engine-building shop in 1794 at Belleville, N. J. (on the Passaic River and lying, as the crow flies, about ten miles due west of New York City). This shop, or shed, has been described as "America's first engine-building plant." From the first, its proprietor was interested in the propulsion of boats by steam and particularly by paddle wheels. He claimed that he was the inventor of the paddle wheel, for he declared in 1815 that he had conducted experiments in 1781-1782 with a model of a boat with "vertical wheels over the sides, each wheel having four arms or paddles or floats," and that these wheels being acted upon by springs "propelled the model of the boat through the water." Nicholas Roosevelt had done some work for John Stevens, Jr., a rich New Jersey landowner interested in steamboat development, and through Stevens, Roosevelt came in contact with the autocratic, ambitious, and grasping Livingston, who was a brother-in-law of Stevens.

Roosevelt had an assistant in his business named Charles Stroudinger, who had worked in England in the engine-building works of Boulton & Watt. He evidently kept Roosevelt from being shamefully bamboozled by Livingston, who sought to sell Roosevelt ideas on "perfectly new principles" for propelling a boat by steam. Livingston designed a boat with his idea of propulsion, and Roosevelt built the engine under a ridiculous one-sided agreement, which was all in favor of the Hudson River aristocrat. The engine proved successful, but Livingston's boat and his method of propulsion were an absolute failure; whereupon Roosevelt suggested putting side wheels on the craft, and Stevens suggested a stern wheel. Livingston would not even consider such suggestions, being "perfectly convinced" of the superiority of his own idea. Roosevelt changed Livingston's plans and altered his propelling mechanism, so that ultimately the boat was moved at the rate of 3 miles an hour, with the engine performing well and carrying an overload beyond that for which it had been built. An attempt to run the Livingston boat up the Hudson River failed, and with good cause Roosevelt soured on the autocratic "know-it-all" chancellor. Later, Livingston claimed to have invented an engine superior to that of Watt, and he tried to get Roosevelt interested in building one, but "once bit, twice shy," Roosevelt was busy building pumping machinery for the Philadelphia water works and he refused to have anything to do with the Livingston steam engine, which Roosevelt well knew he would be required to redesign, make practical, and then try out at his own expense.

In 1808, Nicholas J. Roosevelt went to the Mississippi River to look over the possibilities of operating steamboats there, but he went as an employee of Robert Fulton, who had just made steam navigation on the Hudson River a profitable success. The Mississippi River trade at the time was being carried on by keelboats, which were carried downstream with the current and laboriously poled and towed back upstream. In 1810, Fulton and Livingston set up works at Pittsburgh to build steamboats for the western rivers, with Roosevelt in charge. In September 1811, the *New Orleans,* a duplicate of Fulton's Hudson River steamboat, built at a cost of $38,000, set out for New Orleans after a short trial trip on the Monongahela, but no passengers could be lured to take the risk of the journey on the steamboat. This pioneer western river steamboat was 116 ft. long and 20 ft. beam; she had two masts with sails, had "a round belly, sat deep in the water and had only one deck." Roosevelt had a weird experience in getting the *New Orleans* to her destination, and thereafter she plied between the Gulf and Natchez, as she lacked the power to buck the current farther upstream; moreover, she had too great a draft for western river use. The first freight carried to New Orleans by steamboat was a shipment of cotton, which the *New Orleans* delivered safely at the southern port on January 12, 1812. In the Natchez-New Orleans service, the pioneer steamboat made weekly round trips carrying both passengers and freight and, it is said, showed a speed of about three miles an hour on the upstream journey. On July 14, 1814, six months after she had carried troops from Natchez to New Orleans to aid General Andrew Jackson in the defense of the "Crescent City" against the British, she met disaster from low water at Baton Rouge, was impaled on stumps, and became a total wreck.

Roosevelt is credited with building the first steamboat to navigate the Mississippi, Ohio, and western rivers, but while his work on engines was highly creditable, he produced nothing original, and the boats that he built at Pittsburgh were from plans furnished by Fulton and with men sent out to him from New York. Fulton, Livingston, and Roosevelt, notwithstanding their hopes, never built a steamboat that ran up the Mississippi as far as the Ohio. The current and spotty shallow water conditions on these western rivers baffled the trio of "inventors," and the steamboats that they built were of the wrong hull design and did not have sufficient power. The Mississippi and Ohio were not the Hudson, and Fulton's Pittsburgh venture and his Ohio company for navigating the western rivers were financial failures.

Daniel French, of Pittsburgh, in 1813 built the *Comet,* to operate on the Mississippi and Ohio, following the general hull and machinery design of the Fulton-Roosevelt boats, but she was no more successful than they were. In 1814, French built the beamy *Enterprise,* which was 36 ft. shorter but 9 ft. wider than the *New Orleans,* and he propelled her with a stern wheel. In May 1815, shortly after Fulton's death, the *Enterprise* steamed upriver from New Orleans to Louisville and was the first steamboat to make a successful journey up the Mississippi and Ohio; the *Enterprise,* however, had been favored by water conditions.

Henry M. Shreve, an experienced western river pilot and skipper, who had been captain of the *Enterprise,* produced and operated in 1817 the first successful western river steamboat, which was in design the progenitor of all Mississippi and shallow-river water, power-driven craft. Shreve was convinced that boats of the eastern river type would never conquer the western rivers, so he took a beamy barge that drew inches instead of feet of water and used a stern wheel, but needing more powerful and lighter machinery than had been heretofore used, he courageously used a high-pressure, two-cylinder, double-acting engine and four boilers, all installed on the main deck, and placed a second deck up high. The Shreve boat, named the *Washington,* was ridiculed, but in 1817 it ran against the current and over the shoals from New Orleans to Louisville in 21 days. The Shreve type of western river steamboat is in use today, and it was Henry M. Shreve—and not Robert Fulton, his partner Robert

R. Livingston, or engineer Nicholas J. Roosevelt—who solved the problem of western river steam navigation and in 1817 (nearly ten years after the first trip of the *Clermont* on the Hudson River) invented and successfully demonstrated the practical utility of the stern-wheel, high-powered, beamy and high, shallow-draft river steamboat.

Samuel Morey, of New Hampshire, the Second Greatest American Inventor of Steamboats

About 1790 and shortly after John Fitch's mechanically successful steamboat experiments on the Delaware and New Jersey waters, Samuel Morey, a skilled New Hampshire mechanic and a natural inventor, became interested in designing and building a steamboat. Living at Orford on the upper Connecticut River, Morey built his first boat in a shed behind his house, and this little craft, "chock full of machinery," moved upstream against the current of the river to the great surprise of the inhabitants of his home town. Professor Silliman of Yale urged Morey to go to New York, where, Morey says, he "built a boat and during three successive summers tried many experiments in modifying the engine and in propelling. Sickness in my family calling me home, I had the boat brought to Hartford as a more convenient place and there ran her in presence of many persons." In this boat, Morey tried to use a single paddle wheel, but instead of placing the wheel in the stern, he was fearful of interference with the rudder, so put the wheel and his operating machinery in the bow and had the wheel pull instead of drive the boat along. Later, in the spring of 1796, Morey tells us that "having made sundry improvements in the engine, I went again to New York and applied the power to a wheel in the stern, by which the boat was impelled at the rate of about 5 miles an hour. I invited the attention of Chancellor [Robert R.] Livingston, and he with Judge Livingston, Mr. Edward Livingston, Mr. Stevens and others went with me in the boat from the ferry as far as Greenwich and back, and they expressed very great satisfaction at her performance and with the engine."

Chancellor Livingston, evidently jealous of what his very capable brother-in-law, John Stevens, was doing in the development of the steamboat and steam engineering, tried to buy Morey's boat, his knowledge, plans, and the patent right to use in certain specific waters for the sum of $7,000, but Morey says that he "did not deem that sufficient and no bargain was made." Livingston urged Morey to continue his work of perfecting the steam propulsion of boats, and Morey wrote: "I continued my experiments through that summer encouraged by his promises which were to give me a considerable sum provided I succeeded in making a boat run 8 miles an hour"—which was the maximum speed that Fitch had actually obtained in 1790, when his boat, in commerce, traveled some two or three thousand miles and was a mechanical but not a financial success.

In the fall of 1796, Morey returned to his New Hampshire home, where Livingston visited him, and in response to Livingston's invitation and at Livingston's expense, Morey went to Clermont to see the man who he believed would be his patron. It would seem that Livingston pumped Morey dry, got all he could out of him, and then dropped him. Livingston was of the opinion that he could build a steamboat as well as Stevens, his brother-in-law, and he wanted the honor of doing it. In 1797, Livingston hired a talented craftsman named Nisbet to build a horse-propelled boat according to Livingston's own design and later got in contact with Nicholas J. Roosevelt, a mechanic who in 1794 had established America's first engine-building works at Belleville, N. J. Morey, in June 1797, went to Bordentown on the Delaware, and with backers that he had obtained to furnish funds, he constructed a steamboat propelled by two wheels, one on each side. Morey says: "The shaft ran across the boat with a crank in the middle worked from the beam of the engine with a shackle bar." He adds: "I found that my two wheels answered the purpose very well and better than any other mode that I had tried and the boat was openly exhibited at Philadelphia. From that time I considered every obstacle removed." Morey had progressed beyond any former inventor or any contemporary in the propelling of a boat by steam using twin paddle wheels, but fate decried that he should not profit by his originality. His backers ran into financial difficulties, and this, following his experience with Chancellor Livingston, soured Morey, so he discarded work on steamboat development and applied himself in other lines. It would seem that D. Burgess Allison, of Bordentown, N. J., who had been impressed by Fitch's steamboat achievement and had been a member later of The Rumsean Society, was instrumental in getting Morey to Bordentown and advanced money for the construction of a steamboat to be designed and built by Morey. This steamboat, it was said, was "propelled by paddle wheels at the sides, in the later-accepted fashion, making trial runs on the Delaware in the vicinity of Philadelphia." Competent authorities have said that the Morey boat "differed in no material principle from the boats afterward built by Fulton," that it was "exhibited for some time at the Philadelphia wharves," but that "lack of public interest and of funds prevented the boat being put into practical use."

Samuel Morey was a versatile mechanical and inventive genius. He took out over twenty patents covering several types of steam engines and methods for generating illuminating gas, but his most noteworthy achievement was the design and production of the first internal combustion engine in the 1820's, complete with carburetor, which Charles F. Duryea, the automobile pioneer, long years later hailed as the father of all gasoline motors. John Fitch designed and built the first steamboat that operated successfully in a mechanical sense in commerce, but Samuel Morey evidently laid the foundation for the Robert R. Livingston and Robert Fulton partnership, which produced the first steamboats that made money, and neither Livingston nor Fulton was an inventor as far as original conceptions were concerned. Morey was not much, if any, wrong when he ejaculated, "Damn their stomachs, those cusses stole my invention!"

Elijah Ormsbee and David Wilkinson—a Couple of Queer Yankee Mechanics

Rumors about steamboats traveled over the Atlantic Coast belt following the activities of John Fitch and James Rumsey, and after Fitch's successful operation of Fitch's steamboat in trade for a whole summer in 1790, a lot of New England mechanics felt that they too could build a steamboat if they had the money. Few, however, devoted the time and energies and sacrificed as much as did Samuel Morey, a skilled artisan of Orford, N. H., on the upper Connecticut River, who really built boats that contributed much to the advance of the art and taught others a great deal that was later used by them—both directly and indirectly—to put steamboating on a paying basis. Some "crazy" Yankee mechanics pottered around with boats driven by steam power "just for fun," and several of these, who had never seen a steam engine and boiler, started their work on a steamboat not by merely scheming on the best way to drive the boat (wheel, paddles, endless chain, screw, or jet propulsion), as did Robert Fulton, but by designing and building a steam engine and boiler. Of this type of inquisitive, resourceful, and imaginative Yankee mechanic was Elijah ("Lige") Ormsbee, a "crack-brained" carpenter and millwright of Cranston, R. I., who had a habit of disappearing whenever he got a novel idea in his head and of emerging from his solitude with some queer gadget and quite frequently some very useful appliance that he had worked out, for "inventions" were seldom mentioned in Ormsbee's circles and the word, or any of a corresponding meaning, was not in Lige's vocabulary. A kindred soul was David Wilkinson, of Pawtucket, a blacksmith by trade and a builder of novel machines by choice. Dave was a rambler, with both his feet and head. He rambled over the country, and wherever he appeared a practice had developed to hide all machines, for if not, Dave would get hold of them and take them apart, so that they could not be used for days, weeks, or months. However, he would generally either improve them or turn up some day with something better and with no idea of selling and making money out of his friends because of his invention.

Ormsbee, when watching a pumping engine at work in an ore bed at Cranston, R. I., happened to meet Wilkinson, who had just invented a press for making nails, and Ormsbee, during general conversation, said: "Dave, I think it would be fun to put a steam engine in a boat." Wilkinson agreed and evidently liked the prospect of the fun of wrestling with the problem so much that he agreed to cast and bore an engine cylinder, and he lost no time in returning to Pawtucket to keep his word. Ormsbee had no funds, but he borrowed certain things that he "figured he would need" from friends, and one item, we are told, was "a copper still." He then did one of his usual vanishing acts, but kept in touch with Wilkinson, and when the cylinder was finished, Ormsbee, by a generous outpouring of Yankee ingenuity, produced a steam engine that would really work. His next job was to find a boat to put it in. Lige had neither time nor money to build a boat of orthodox type, so he tried to place his machinery in a canoe that he had made from a log. As the machinery was too heavy and took up too much room in the dugout, Ormsbee tackled the captain of an Indiaman for the use of a ship's boat for two or three weeks, and the captain was sufficiently interested in the experiment that "queer old Lige" wanted to make that he acceded to the request. Ormsbee and Wilkinson got their heads together on the best and simplest way to have the single-acting engine drive the boat and decided on mechanical duck's feet. Contemporaries report and the word has come down to us that on the first test, the engine was started by Ormsbee and the boat steamed into the bay and went to Long Wharf, Providence, at a speed of 3 miles an hour. The next day, Ormsbee took the boat up the river under its own steam to Pawtucket, where Wilkinson was met, and the two "inventors" of the craft gave all interested free joy rides and then steamed back to return the boat to the captain of the ship after showing him how perfectly the apparatus worked. We are told that Ormsbee returned all the borrowed parts of the contraption to their owners, and the bright Yankee mechanics, after expressing a good deal of satisfaction at the successful outcome of their experiment, dropped steamboating and declared that the "frolic was over."

Oliver Evans, a Brilliant Mechanic and Inventor Who Built Machinery for a Steamboat in 1803 and an Amphibious Steam Digger in 1805

Oliver Evans was a brilliant Philadelphia mechanic who would have become famous and traveled far as an inventor in the application of steam power in many fields of activity, including marine navigation and land transportation, if he had had some moneyed men behind him. Evans became much interested in steam when he came across a book describing Newcomen's steam engine, which had been developed in England. This engine used atmospheric pressure to do the work, and steam was condensed to produce a vacuum under the piston. Newcomen was interested only in pumping water (as was James Watt in his early days), but Evans, from the first, thought that steam should be used directly, so he designed and built a high-pressure engine and visualized steam power as being used to do all kinds of work. Oliver Evans was one of those rare persons with imagination, originality, and initiative who possessed an exceptional skill and exhibited an intense interest in things mechanical.

As early as 1785-1786, Evans was interested in the use of steam engines and in applying them for the turning of moving wheels and was one of "the world's outstanding pioneers in high-pressure engines." When very young, Evans showed his genius as a designer and his ability as a mechanic by developing a machine for making wire teeth used in carding wool and by inventing and building a flour mill that operated by steam power and processed the flour from the grain to the barrel, "without the intervention of human hands." It is strange that Philadelphia capital was so lethargic that it did not make use of Evans' great talents and give the man a real chance to apply his genius practically in a big field. Throughout his life, Evans was handicapped in being an artisan without means, with no money to spend in making experiments, and in being limited in his construction to those things for which he could collect prompt pay.

Dame Fortune was most unkind to Oliver Evans when, after the Louisiana Purchase, a group of capitalists decided to build or assemble a steamboat 80 ft. long near the mouth of the Mississippi to operate on the big river and employed Evans to design and build all the machinery. In 1803 a spring flood picked up the vessel as it was approaching completion, carried it half a mile inland, and dumped it in a position from which it could not be dragged back to water. The discouraged capitalists, after this catastrophe, quit cold on their venture and salvaged all they could from their investment. If Evans had been a man of means or with sufficient credit, he would have acquired possession of his machinery and had another boat built or otherwise obtained a suitable hull to carry it. This he could not do, and he lost the chance of operating the first steamboat on the Mississippi or any western river when the capitalists sold his engine to operate a southern mill, and Evans, even poorer than he was when he went to New Orleans, returned to Philadelphia.

In 1804, Oliver Evans felt that another chance had come for him to prove the practical worth of his ideas in steam transportation on both land and water. He was commissioned to build a steam dredge to clean out the river around the docks in Philadelphia and do general dredging along the water front. Evans surprised everybody by building his machinery and a mudscow some 30 ft. long and 12 ft. beam at his own workshop, which, contemporary writers say, was a mile and a half from the water, but the brilliant inventor knew what he was doing. He built the necessary dredging equipment, a high-pressure steam engine, boiler, and multiple driving mechanism, mounted the machinery on deck, and evolved an ingenious practical outfit, which was the world's first amphibious boat and was known as the *Orukter Amphibolos* (amphibious digger). It could move under its own power on land or in the water and dig or dredge mud while mobile. This was a tremendous step forward in engineering, and Evans' bold scheme was quite successful. It is to be regretted that Philadelphia thought that Evans' amphibious digger was too freaky to be considered as anything more than a wondeful achievement of very restricted and limited practical value and that the success of his mechanisms, while startling, did not cause capitalists to take him up and strive to exploit his genius. Evans had successfully accomplished too many things at once. He had built an amphibious structure that was equally at home on the land or in the water and had made it mobile by steam; he had constructed a steamboat, a steam-driven automobile, and a power dredge; and he had demonstrated the practical use of high-pressure steam, and this was too much for the Philadelphia minds of 1804-1805 to comprehend and properly evaluate.

The reports concerning the details that have come down to us of Oliver Evans' amphibious digger and of the man himself and his doings vary. Some say that Evans moved his dredging scow with his engine driving huge iron wheels on an exhibition jaunt for several days; others that he used great big wheels and moved the apparatus direct from his shop to the river. Some reports describe Evans as of very limited financial means but possessing pride and dignity; whereas another says that Evans put his amphibious dredge on public exhibition in the heart of Philadelphia, demonstrated its usefulness, and as an impoverished inventing artisan "passed the hat." It is known that Evans was impoverished after building the elaborate dredge to prove that certain ideas of his were practical, but he apparently remained solvent, for he completed his dredging contract made with the city of Philadelphia. Spears describes Evans' amazing construction job and achievement as follows:

The scow was put together at his shop, which was located a mile from the Schuylkill. When done, he mounted a steam engine (5 by 19 inches large) on its deck, placed temporary wooden axles with temporary wooden wheels underneath, connected the axles and engine shaft, and then steamed away to the river. There he removed the wheels and put a paddle wheel for use afloat. Then he launched his scow, steamed down the Schuylkill and up to the slips he was to dredge. The engine was thereafter used in the work of dredging. . . . Evans adopted the high-pressure engine; it exhausted the steam into the open air, and this style of engine was found to be best adapted for use on the western rivers later on.

We have here a practical illustration of the resourcefulness and versatility of mechanical-minded Americans. The same steam engine that Oliver Evans had decided he needed for filling his dredging contract (and doing the job cheaply by the use of steam power) he utilized to move his big scow a mile over roads that were none too smooth and then to propel his dredging scow to the scene of her activities.

C. F. Kettering, in October 1944, said:

Occasionally we see a fine example of a man's practical thinking that was a century or more ahead of industry. As a case in point, let us take that military vehicle called the "Duck". This unique land and water conveyance has been developed during this war to make possible invasion of enemy territory. Its versatility lies in the fact that it can leave a ship offshore and travel through the water as a boat. Upon reaching the land, it goes ashore and continues its course as a truck—it can go from land to sea just as easily.

Recently, in Philadelphia, thousands of people lined Market Street and the banks of the Schuylkill River to watch a "Duck" travel along the street, slide into the water and proceed up the river. It was an amazing demonstration. However, just 140 years before the people of Philadelphia had gathered along the same street and river to witness a demonstration of inventor Oliver Evans' strange vehicle which he called the *Orukter Amphibolos,* or Amphibious Digger. Here is his own description of the event. "To show that both steam carriages and steamboats were practicable, I first put wheels to the boat and propelled it by the engine a mile and a half up Market Street and around Center Square to the River Schuylkill. I then fixed a paddle-wheel at the stern and propelled it by the engine down the Schuylkill and up the Delaware sixteen miles leaving all the vessels that were under sail full half-way behind me." This was not only a demonstration of the first "Duck" but also an exhibition of the first self-propelled vehicle to be built in this country.

Whereas Oliver Evans' amphibious digger was the world's first "duck" and preceded by many years the locomotive, the automobile, and Robert Fulton's pioneer steamboat, it followed by some seventeen years John Fitch's first steam-driven vessel and by some fourteen years Fitch's mechanically successful steamboat, which operated commercially as a reliable means of transport on the Delaware throughout the summer of 1790. Kettering further said: "It sometimes happens that men live in an age that has neither the market nor production equipment to take advantage of their advanced ideas. Only after the motor boat and the automotive truck had been highly developed did the amphibious vehicle become a practical mechanism."

It is amazing that a man of the inventive brilliance and outstanding mechanical ability of Oliver Evans was permitted to remain in relative obscurity as a builder of engines and machinery for mills. For some strange reason, Philadelphia capital did not take kindly to him, and it would seem that following the appearance of Fitch and Rumsey on the scene in Philadelphia, that city had no interest in Evans as an inventor of steamboats. A contributing cause of this indifference and neglect was probably due to the fact that Arthur Donaldson, a man of means and ingenuity who had been one of the contractors to clean up the Delaware after the war and who had designed and patented a machine called the *Hippopotamus* for doing the work, had claimed to have invented a steamboat. Donaldson was probably the first private individual that Fitch tried to interest in his invention, and Donaldson promptly grabbed hold of the idea to exploit himself following the jet propulsion idea, which was old, but which had been recently endorsed by Franklin. If Donaldson, the wealthy and mechanically clever promoter, had a steamboat that he would exploit if the priority of Fitch should be successfully attacked and if Rumsey, with his backing by Washington, Jefferson, and Franklin, should fail, it would seem foolish for conservative Philadelphia to risk its money in backing a merely bright and skilled mechanic, who had undoubted ability but would better confine his efforts to building engines and machinery for mills.

Evans did make attempts to interest private capital outside of the state of Pennsylvania, but Virginia, Maryland, and the Carolinas were all tied up with Rumsey, and in New Jersey and New York, capitalists (such as Stevens and Livingston) were beginning to think of themselves as inventors. Possibly, Evans, who interviewed Stevens in his search for financial backing, put the idea of high-pressure steam in that talented gentleman's head, but in any event Evans found that Stevens was interested in following his own course and using his money to back his own ideas and accomplish things for which the credit would be his instead of flowing to a mere mechanic. After the War of the Revolution had been fought and won, there was for many years a clearly drawn line between a gentleman (who never worked with his hands) and an artisan, or mechanic (whom a gentleman could employ to work for him). Stevens and Livingston were gentlemen who were always conscious of their class, breeding, and superiority. Fitch, Rumsey, Morey, Evans, Roosevelt, etc., were artisans and humble folk. John Stevens, Jr.'s son (Robert Livingston Stevens) was brought up to use tools, which shows that the world had advanced rapidly in the first few decades of the twentieth century. However, Robert Fulton, originally a poor Pennsylvania artisan and a "nobody," would never have become a partner of Chancellor Robert R. Livingston—the aristocrat of Clermont—and been given a chance to build steamboats for the Livingston monopoly (and use on the Hudson River) if he had not been an actor and a well-read, audacious, and very personable individual, who had made friends as an artist and then used them to his own selfish advantage. When Livingston first met Fulton in Paris, he contacted a suave, sophisticated, and seemingly prosperous gentleman of breeding and culture traveling in the best society. Fulton talked and acted more like an English dandy than an American artisan, and he succeeded in fooling Livingston, the patrician, enough to break down that rabid aristocrat's strongly built social fences and later even to marry into the exclusive Livingston family.

Unfortunately, Oliver Evans was ahead of his time, and the United States, even though it was a large undeveloped country, was seemingly unable to use his great genius along practical lines. Evans found the building and selling of steam engines permeated with risks, disappointments, and money losses. In 1819 a fire destroyed his shop and ended his active work, but his engineering achievements, together with those of many other late eighteenth and nineteenth century inventors, substantially contributed to make the United States a great industrial nation.

Robert Fulton, Who Built the World's First Financially Successful Steamboat

Robert Fulton was born November 14, 1765, on a farm near Lancaster, Pa., the son of a tailor who soon failed as a farmer and in 1771 moved to Lancaster to ply his original trade. After a boyhood spent in Lancaster, Robert became apprenticed to Jeremiah Andrews, an English jeweler with a business in Philadelphia. When Robert was in his twenty-first year, he advertised himself in Philadelphia as "Robert Fulton, miniature painter and hair worker" and removed June 6, 1786, from Andrews' address to a shop of his own. In the summer of

1787, he sailed for London on borrowed money, with a letter to Benjamin West in his pocket and visions of becoming a great artist. Fulton was a mediocre painter, and following years spent in training, outside of a little patronage among the uninformed in the provinces, he made no money practicing his art in England. After many years of failure to develop so that he could make a living and after trying out, without success, many branches of painting and finding it precarious to continue to live "on nothing a year," the miniature painter endeavored to get into the field of invention and engineering, where his personality, enthusiasm, imagination, and disregard of scruples promised him some sort of income.

It is said that partly through the influence of such men as Earl Stanhope and James Watt, Fulton "was led to devote his attention to engineering." In 1794 he obtained an English patent "for superseding canal locks by inclined planes" and in 1796 published "A Treatise on the Improvement of Canal Navigation." Before railroads were to be built, the economic transportation of goods by a system of canals was in the foreground of thought in both Europe and America. England, particularly, was "canal mad" in the 1790's, as its first canals built in the seventies and eighties had proven very profitable, so artificial waterways were projected everywhere. Fulton wrote to Lord Stanhope, who was considering building a canal connecting Bristol with the Channel, and suggested the use of Fulton's idea of pulling boats to higher levels on inclined planes instead of lifting them by much more expensive locks, but Stanhope replied that the idea was an old one and of no practical economic value. Dickenson, an English engineer friendly to Fulton, wrote of the dilettante inventor's patented plan for eliminating canal locks: "It is difficult even for a trained mind to see in this specification anything more than a crude idea, ill digested; better methods, worked out in a more practical manner, were already in use."

It was about the middle of 1793 that Fulton first turned his thoughts to steamboats, and he endeavored to propel a little model boat by stern paddles imitating the motions of the tail of a fish. When he dismally failed in the application of his "brilliant idea" of following nature's way in marine propulsion, he substituted rotary paddle wheels, but his ideas of utilizing engine power to propel the boat were inefficient. When failing to interest Stanhope in his plan for "superseding canal locks," he, nevertheless, wrote the wealthy Englishman of his steamboat ideas; but Stanhope, who said that he had "made important discoveries" himself in that line, knew enough of engineering to be disinterested in Fulton's suggestions. Fulton was at all times ignorant of the fundamental principles of naval architecture and at this time wrote that mechanical vessels should be "long, narrow and flat at bottom with a broad keel as a flat vessel will not occupy so much space in the water." He had absolutely no idea of the effect of dimensions on stability and of the importance of modeling a hull to reduce water resistance. He felt that speed was increased by making his boat narrow and that light draft was to be obtained by eliminating deadrise and a rounded bilge. Later, when he built the *Clermont* and became famous as the "inventor" of the world's first commercially and financially successful steamboat, his hull was merely a narrow box, with sharpened ends for entrance and run, built with straight lines and no attempt at modeling. Fulton quickly had to rebuild the *Clermont* and give her some beam, so that she could carry a paying load instead of dead ballast stowed in her bottom. As soon as the necessity of obtaining speed and the economic use of power became evident, Fulton and his followers were compelled to build the hulls of their boats with lines as carefully drawn and eye-sweet as were those of sailing vessels and rowboats.

In November 1794, Fulton wrote Boulton & Watt requesting a price on an engine "designed to be placed in a boat." He figured on this engine-building firm's designing both the engine and the boat for him, but Boulton & Watt did not "bite." Fulton devoted his energies for some six years to canal projects, which seemed to him to be a more promising field in which he could make money by advancing ideas and being considered as a progressive authority.

Writing home from England in September 1796 after an absence of over nine years, Fulton admitted that he had "not painted a picture for more than two years." He had reached the conclusion that engineering was a more promising road to travel than art if he was to win fame and fortune, and he writes that he has little doubt but that "canals will answer my purpose." Unlike Fitch, who put his heart, soul, and all he had during his lifetime into the one project of developing his idea and invention of a steam-driven boat, Fulton was looking for anything that he could promote and make money thereby. He had a certain sort of inventing ability, which was more in the line of promoting and applying the original ideas of others. He was well educated (or, rather, well read), analytical and retentive, and was void of conscience when pirating the fruits of the genius of others. Fulton was an excellent and plausible publicist and a great salesman of himself and of any idea that he wanted to put over for his own selfish benefit. He also had a fair measure of ability in mechanics and was gifted with some natural engineering talent. He had courage, a vast degree of nerve and colossal bluff, and "a way with him" that impressed people and carried conviction. Although fundamentally as poor as Fitch, Fulton lived, dressed, and acted to obtain needed credit easily, and he financed his schemes and lived on borrowed money; whereas poor Fitch, with his vision, consecration to an idea, and tremendous enthusiasm, never "got to first base" because he did not put on the front and was not the actor that Fulton was. Moreover, Fitch, with his puritanical ideas, conscience, veracity, honor, and fundamentally high principles, could not possibly do the things that seemed natural to Fulton and in a generally similar but lesser degree to Rumsey.

Fulton went from England to France to make his fortune in Paris and "add to the blessings of the Revolution, the blessings of his small canal system," which he was confident would bring "universal prosperity." But as James T. Flexner, in his admirable historical work STEAMBOATS COME TRUE, well says: "Fulton's vitality spilled over into other projects. Unlike Fitch, to whom the idea of the steamboat had become self and the world and god—the whole universe—Fulton was [in the middle and late 1790's] a professional engineer seeking an idea, an inventor in search of an invention." Notwithstanding that Fulton wrote English friends in September 1798 that his plans had been adopted for a canal to run between Paris, Dieppe and Cambrai, a statement typically Fultonian and untrue, the French did not think enough of Fulton's canal schemes to put money into the idea or, what was of more importance to Fulton, into his pockets.

Imbibing the atmosphere of France and seeking to profit by it, Fulton thought he saw a chance to get Napoleon to back him in a scheme of developing plans to destroy the British fleet and thereby make Napoleon master of Europe. The principles behind the war meant nothing to Fulton; he was interested only in what he could get out of it—a state of mind clearly proven by his subsequent dealings with both the French and British governments. Discarding his canal propaganda in France, Fulton turned to submarines and agitated sinking the powerful British fleet or driving it by fear from English Channel waters (so Napoleon could invade England) by the use of submerged boats, which, undetected, would creep up on the most powerful of British warships and blow them up with a minimum of expense and risk. On December 13, 1797, Fulton made a proposition to the French Directory in which he affirmed that he could design and build a mechanical *Nautilus,* which, if constructed and operated properly in suitable numbers, would annihilate the British fleet. Fulton stated that he had organized a private French company that was willing to build his submarine boats if the government would pay it a suitable sum for each British warship that it sank, permit it to retain all prizes taken, and grant it an exclusive patent right to the construction and use of such boats; if the French Government itself should desire to build submarine boats, then the company tendering this proposition should receive a fixed royalty of a stipulated sum for each boat constructed.

Fulton believed that a contract along these lines would bring him a large fortune, and yet this American-born "inventor," who had practically adopted England as his home and been living on the gullibility of moneyed English friends for over ten years, proclaimed to the French that his purpose in advocating submarines and making it possible for Napoleon to use them against Britannia, the mistress of the ocean, was his ardent desire to win for all peoples "freedom to the seas." A year later, Fulton, resident in France, went so far as to attack "the monstrous government" of England and say that the terror following the sinking of a few British warships would be so great that "the republicans in England will rise to help the French invasion" and change their government without any expense to France in either blood or treasure and that "with England made republican [through the use of Fulton's submarines] the seas will be free." Fulton claimed that the entire idea of a submarine boat and its use in warfare was his own and that in the invention and development of such a craft, he was actuated by the highest idealism and sought to "compel every government to adopt the simple principles of education, industry, and free circulation of its produce," with the destruction of all marine "engines of oppression" such as he designated the British Navy—which, almost alone, a little later stood between the tyrant Napoleon and his absolute, autocratic and unprincipled domination and subjugation of Europe.

The inventor of the submarine, however, was not Robert Fulton in 1797 but David Bushnell in 1775, who built the world's first submarine on the Connecticut River and during the War of the American Revolution used it in making attacks on British warships in New York waters. Bushnell, born near Saybrook, Conn., about 1742, was a contemporary of Fitch and came from the same part of the country. Bushnell's father was a farmer and brought up his son to succeed him, but following the father's death in 1769, David, although then twenty-seven years of age, sold his farm and moved to prepare for college. He entered Yale in 1771. Experiments made by Bushnell to see if gunpowder would explode under water started his thoughts, as the War of the Revolution approached, on the development of a boat that would move under water and, hidden from observation of the enemy, destroy British war vessels by the means of gunpowder. Bushnell built the pioneer submarine, which he named *American Turtle.* It was a one-man affair with a conning tower, a tank for ballast water, pumps run by foot power, and screw propellers operated by the feet to propel the little boat in any desired direction, ahead or backwards, sideways, and up or down. An ingenious ventilating system was installed with valves that automatically closed when the boat submerged. A special depth-recording device was invented by Bushnell on barometer pressure principles, and phosphorus was used to light essential gauges and the compass. At first, Bushnell planned to submerge, secure a bomb to a vessel's bottom, pedal away under water, and ignite the bomb by an exploding clock-operated mechanism.

Robert Fulton pirated all of Bushnell's ideas regarding the submarine, called them his own, followed in Bushnell's identical footsteps, and impressed the French sufficiently with his "invention" to get money out of them for his services in seeking to develop and practically apply his ideas. Fulton's planned submarine, which he named the *Nautilus,* was merely an enlarged *American Turtle* to carry three men, with the screws and pumps operated by hand cranks, and was modified to meet the new prevailing conditions. When the Directory turned down his submarine scheme, Fulton, impressed with Napoleon's rise to power, presented his canal system to him, but Napoleon was uninterested in Fulton's engineering suggestions and bored by his preaching. In the summer of 1798, Fulton submitted his submarine proposals to a newly appointed minister of marine, and a commission, after examining Fulton's model of his *Nautilus* and questioning him, while finding much fault with the submarine, reported that "the weapon conceived by Citizen Fulton is a terrible method of destruction, . . . is undoubtedly imperfect," but "is the first conception of a man of genius" and should be developed. The commission was positively of the opinion that to make the submarine of practical use "will not be the work of a day," but will require a lot of time as will the training of men later to perfect methods in handling the boat. It recommended that Fulton be supplied with funds to build a full-sized submarine. Nevertheless, the Directory did not act favorably on the matter, and Fulton turned to other projects. In France, he patented as his own the English engineer Cartwright's invention of a rope-making machine and sold it to Nathaniel Cutting. Several years later, accusations of cheating and threats of libel suits developed. He sent his canal scheme to Russia (France's enemy) and, it was later claimed, his submarine plans also. Searching for means to make money, Fulton also took out a ten-year French patent on an imported idea for using a London picture panorama, and he actually made money on the Boulevard Montmartre as a showman when his engineering schemes were failing him.

Not getting financial aid from the French Government for the development of the submarine, Fulton succeeded in interesting a Hollander named Vanstaphast to advance the required funds to build such a boat. It is evident that as the work progressed, Fulton received encouragement in some form or other from the French, and when on June 13, 1800, he made his first test in the Seine River, it was witnessed with enthusiastic interest by French officials. This test in Paris was apparently confined to submerging and staying under water, and it is said that the *Nautilus* remained under water for as long as three-quarters of an hour at a stretch and could have remained submerged much longer. Fulton made further tests at Rouen and Le Havre, where he experienced a lot of trouble in getting speed with his hand-driven screws.

In mid-September 1800, Fulton made his first attempt to blow up a British warship, but could not get near his quarry because of the tides, the low speed of the *Nautilus,* with her hand-power screw, and the alertness of the British Navy, which had been warned of Fulton's intent. Laying up his boat for the winter, Fulton boasted of his success in demonstrating the feasibility of underwater navigation and submarine warfare, although he had not been as successful as Bushnell on his first submarine attempt to blow up a vessel. Bushnell did reach an enemy ship and try to fasten a bomb to her hull; whereas Fulton could not even reach his intended prey. The French gave him money to make improvements on his boat, and in the spring of 1801 it was taken by land to Brest, but after further experiments was laid aside, and Fulton tried out an earlier plan of Bushnell's of attacking the enemy by means of a small surface boat towing a torpedo. Fulton showed a great deal of personal courage in all his underwater and surface attempts to destroy a British warship, but he actually accomplished nothing. When he suggested using a submarine to tow mines into British harbors (again following, to some degree, Bushnell's scheme of floating torpedoes down to British ships at anchor during the War of the Revolution), Napoleon was sufficiently interested to express a desire to look over the *Nautilus* so that he could personally judge of her capabilities and probable usefulness. However, Fulton said that he had prepared plans for a much improved submarine, that the *Nautilus* was admittedly imperfect, and that as she leaked, he had destroyed her. By this time, Fulton seems to have become desperate for money and impatient with the French. He refused to let anyone see his latest plans; the invention, he declared, was his private property, and if the French wanted to get any benefit out of it, they would have to pay for it and this to an extent that would give him "an ample independence." Thereupon, Napoleon branded Fulton as "a charlatan" and "a swindler who wished solely to make money"—which statement, based on the evidence, was not far from the truth.

Through Lord Stanhope and other friends, Fulton had been throwing scares into the English for some time. His subtle propaganda resulted in his being contacted in Holland by a representative of the British Government and in his going to London (under the name of Francis), at British expense, in the spring of 1802 to confer on the subject of submarines. Fulton's idea was plain blackmail, and he sought to make the British buy his submarine boat plan not to use for themselves but to deprive France or any other enemy of using it. However, Prime Minister Pitt and his advisers had ideas of their own. After negotiations, Fulton, the professed idealist who talked of freedom of the seas and democracy, signed a contract with the aristocratic and monarchical government of Britain, the proclaimed Mistress of the Seas, to run for fourteen years, by which he received £7,000 for expenses, a retainer of £2,400 a year, and £40,000 if the British decided to suppress his invention, provided the submarine boat was decreed to be an effective weapon; if, however, the British Government applied the boat in warfare, Fulton would receive one-half of the value of enemy ships destroyed, provided he was active in superintending operations, and one-quarter of the value of such ships if he personally took no active part in their destruction. Fulton agreed with the British not to divulge any part of his submarine invention to any other government, including that of the United States.

The British decided to use submarine mines and on October 2, 1804, made such an attack against the French fleet at Bologne. Camouflaged shallow rafts—not submarine boats—towed the mines to positions near the French warships, but they exploded harmlessly on the shore, and none of them hit their mark. Fulton blamed the failure on the sailors of the British Navy, who he claimed had not followed his instructions. The government built more bombs, and incidentally Fulton held up the British for another £10,000 to relieve him "of some pecuniary embarrassments." During the night of September 30, 1805, fast British surface boats succeeded in securing torpedoes to the anchor chains of a couple of French warships, and the torpedoes exploded as timed, but not as planned. The mines did not float under the vessels' bottoms, but were a sufficient distance from the ships, when they went off, to do no harm. After that experience, Fulton had to work hard to endeavor to prove that his floating mines, or torpedoes, had merit; so he made a test in the presence of government officials and naval officers and blew up a captured Danish brig by means of a mine towed and set adrift by a rowboat.

In October 1805, the French fleet was ignominiously defeated by the British Admiral Nelson at Trafalgar, and Britain gained undisputed control of the seas. British naval officers had no use for Fulton's invention. Whereas it was admitted that mines, or torpedoes, properly placed would blow up ships, yet getting them in the exact position to be destructive was "a perilous business" and, as Sir Sidney Smith said, Fulton's boats were "too ticklish for these seas." With the marine emergency past and Napoleon discouraged in his invasion plans, Britain cooled off on Fulton, who was proving to be somewhat of an expensive (and non-productive) luxury. Fulton accused the British of not prosecuting submarine warfare with energy and intelligence and claimed that under the conditions that had existed and were continuing, he could never obtain "the emolument" from his invention to which he was entitled. He talked of a million pounds sterling, but admitted "a much less sum" would content him. Fulton wanted to return to the United States to work on a Hudson River steamboat project with Livingston, concerning which they had made a deal in Paris before Fulton left that city for England after bigger "game."

Fulton bluntly told the British that the only way to prevent him from using his submarine invention against England was by the payment of money; he affirmed that he would enter into an agreement to keep his invention "tranquil" provided he was free to return to America or go elsewhere and was promptly paid £60,000 in cash and provided his "present salary of £2,400 per annum" was continued, which yearly compensation would be forfeited in the event that he broke his contract. William Pitt died in January 1806, and henceforth Fulton had new and less impressed Britishers with whom to deal. Appointed arbiters met and decided that Fulton's submarine invention was impracticable and that Britain would not be harmed if any other nation attempted to use it. Fulton, they decreed, was not entitled to any payment for the suppression of his claimed invention, but in a spirit of friendly liberality they awarded him £15,000, of which some £13,400 had already been advanced him. The arbiters declared that the Fulton submarine was not an original invention, and at last the British apparently learned of Bushnell's *American Turtle,* as an account of it had been published several years before in the TRANSACTIONS OF THE AMERICAN PHILOSOPHICAL SOCIETY. Fulton's further attempts at blackmail in England went for naught, and his boasts and threats were ignored. He wrote a friend that the money allowed him by the arbiters would leave him about £200 after settling his debts in London, and he added, "My situation now is, my hands are free to burn, sink and destroy whom I please and I shall now seriously set about giving liberty to the seas by publishing my system of attack." He owned a steam engine bought from Boulton & Watt, of Birmingham, and as he was "all washed up" in both England and France, Fulton, at the age of forty-one and after an absence of over nineteen years, was ready to return to the United States and work with Livingston in the development of a steamboat.

Bushnell's *American Turtle* was a small, compact, and handy one-man submarine for harbor use. Fulton's *Nautilus,* to be effective and operated by the French against the British fleet, had of necessity to be bigger and seagoing. While following Bushnell in all fundamentals, Fulton made his boat bigger and, striving to keep it as narrow as possible, made it relatively long and somewhat cigar-shaped. As a hand-operated screw propeller would permit of only a very small radius of action, require backbreaking work for a crew of three men, and result in very low speed either on the surface or submerged, a collapsible sail was fitted. Fulton's second and last projected submarine, which he tried to get first the French and later the British to take up, was a copper cylinder about six feet in diameter and eighteen to twenty-four feet long and beamy; in the enveloping sailboat hull were to be placed the water tanks to be used for submerging and the load of bombs, or mines. Fulton's design shows this boat with a bowsprit, a mast that could be quickly unstepped, a mainsail with boom and gaff, and a large triangular foresail, or jib. Such a boat would be extremely difficult to move at all by the hand-driven propeller, and it is evident that the lack of means of effective propulsion was a great handicap in the development and use of the early submarine. When any adverse current was encountered, the *Nautilus* had to anchor and await the turn of the tide. The bigger Fulton planned his submarine, the more helpless it would become in any operation except that of submerging and the length of time it would stay under water. A wind- and hand-driven submarine with screw propeller was clearly not practicable to perform the ocean work required, and no scheme of discharging torpedoes at the enemy was possible. Therefore, Fulton's submarine was merely a carrier of bombs, or mines, which it was hoped could be placed near an enemy ship and would explode; but his *Nautilus* did not have power enough to get near the enemy, and if it had, it would probably have been incapable, as was the *American Turtle* of much earlier days, of doing any damage. Bushnell, however, did actually take his submarine, with a destructive bomb, under an enemy ship's bottom, and this is something that Fulton never did.

Robert R. Livingston, of New York (the first Chancellor of State, 1777-1801), had been dabbling with steamboats from the days of Fitch and had been associated with Samuel Morey and Nicholas J. Roosevelt and was in some sort of partnership arrangement with his brother-in-law, John Stevens, Jr. Livingston was appointed United States minister to France by Thomas Jefferson in 1801 and reached Paris in November of that year. He heard of Fulton's experiments and claims for a submarine and his stated interest as an inventive engineer in steamboats and his professed knowledge of them. Livingston knew much about the art in a superficial way, but was an enthusiastic, patrician dilettante who knew from experience far more about what would not do than what could be made to work. Fulton was a gentleman in appearance, conversation, education, manners, and connections, and he sold himself—personality and ability—to Livingston, who soon grew to feel that Fulton was just the man he wanted as a partner to make a success of Hudson River or New York State marine steam navigation. To Fulton the steamboat idea was secondary to his submarine, as he thought the latter would bring him far more money; but he collected all the information he could regarding steamboats and their engines and means of propulsion, making this line of activity follow his canal and submarine schemes. In the summer of 1802, Fulton had a four-foot model boat, in which he experimented with various ways of driving it forward in a stream by means of clockwork. He used wheels, paddles, a screw propeller, and paddles fastened to an endless chain running from bow to stern with board paddles attached. It is said that he liked best the latter method (which Fitch had first used and later discarded). However, one of Fulton's friends saw a model of the identical new Fulton invention in the patent office in Paris, and it was the work of Desblancs, who had patented it and had planned to use the idea on the Rhone River. Fulton, thereupon, decided that he would use paddle wheels instead of an endless chain on his "newly invented" steamboat, but it would seem that no matter what combination he experimented with, none of the ideas were new.

Daniel Parker, formerly of Watertown, Mass., and in business as a "capitalist" in London, was in partnership with James Rumsey from March 1790 until the cleaning up of affairs after the building of the jet propulsion steamboat *Columbian Maid* and Rumsey's death in December 1792. Fulton had known Rumsey and through him Parker, and when Fulton considered designing and building a steamboat, he thought of Parker as a backer instead of Livingston. During negotiations, Fulton learned all that Parker knew of Rumsey's work and accumulated knowledge. Aaron Vail, who had been John Fitch's backer and agent in France and was planning to have a Fitch steamboat built in France when the Revolution put a stop to such commitments, was contacted by Fulton, and Nathaniel Cutting says that Mr. Vail "had lent to Mr. Fulton at Paris all the specifications and drawings of Mr. Fitch, and they had remained in his possession several months." This statement Fulton never denied, and it is significant that his first tests led him to decide to adopt Fitch's stern paddles as superior to wheels and propellers. Although he found that a Frenchman (Desblancs) had recently patented Fitch's invention in France (a procedure permitted in regard to foreign inventions) and Fulton felt it wise, while in France, to keep away from infringement of the Desblancs patent covering Fitch's invention, he, nevertheless, put a drawing of the general idea of the Fitch stern paddles in his patent specifications. Through the Periers, leading machinery makers in France, Fulton learned all about the work of Jouffroy (the pioneer French steamboat experimenter) and his tests of June 1776 and June 1783 on the Seine. After early correspondence with Lord Stanhope and finding him interested in the development of the steamboat, Fulton had kept in touch with him and James Watt and was well posted on what was being thought and worked on in England.

When Fulton signed a contract with Livingston on October 10, 1802, to produce jointly a steamboat, each of the partners claimed a wealth of knowledge in regard to steamboats. Livingston had certainly had a lot of experience, for he had pumped dry the most capable Samuel Morey, dominated and used Nicholas J. Roosevelt, and been closely associated for years with John Stevens, Jr. Fulton and Livingston represented together the archives of knowledge of the development of the steamboat, and they brought nothing new to it that was of moment. A patent was taken out not for an original type of boat, machinery, or transmission of power but "for a new mechanical combination of a boat"; almost every boat built from new plans showing new dimensions, power, capacity, etc., is a new combination. Fulton set to work promptly to try to prove that it is an invention if one takes ideas that are old and discoveries made by others (whether admitted or not) and uses them in some combination that will get results. Fulton said, "In these plans you will find nothing new"; then he goes on to say that he has used the side wheel (after Franklin had condemned it and he himself had proclaimed it inferior to Fitch's stern shoveling paddles), for "after the experiments I have already made, I am convinced that the fault has not been in the wheel but in the ignorance of proportions, speeds, powers and probably mechanical combination." He adds that although wheels are not a new application, "yet if I combine them in such a way that a large proportion of the power of the engine acts to propel the boat in the same way as if the purchase was upon the ground, the combination will be better than anything that has been done up to the present, and it is in fact a new discovery." Fulton also wrote that the invention of a steamboat did not consist of putting wheels, paddles, or other appliances set in motion by a steam engine within a hull but in determining the size of all the parts to meet certain requirements. "All these things being governed by the laws of nature, the real invention is to find them." Until the builder of a steamboat can proportion the engine, hull, mechanical drive, etc., scientifically, according to Fulton, "he cannot be said to have made any clear and distinct discovery or useful invention."

Fulton, with his specious reasoning, glib tongue, authoritative air, and consummate bluff, was on his way to claim the invention of the steamboat. At first, Livingston and Fulton were partners in design and construction as well as in business; but Fulton took the lead in all decisions pertaining to design, and with grandiose verbiage and an assumption of scientific knowledge that he did not possess, he overwhelmed Livingston. The patent for their new boat was taken out in Fulton's name, and when later it was decided to build their first boat in France, it was Fulton who determined the type, size, and design of the boat. That supposedly mathematical and engineering shark set the dimensions of the boat at 70 ft. long, 8 ft. beam, 3 ft. deep, fitted with paddle wheels 12 ft. diameter, an eight-horsepower Perier engine, and an absurdly high-pressure (32 atmosphere) "flash" boiler. This, of course, was an immediate and total failure, and Fulton must have clearly shown the possibility that this self-advertised wonderful man was guilty of bad judgment, if not of figuring erroneous proportions, when he had to replace his great new high-pressure "flash" boiler with an ordinary low-pressure boiler.

That Fulton, with all his assumption of scientific knowledge, could not calculate stresses and was no better than most of his predecessors in steamboat building is proven by the fact that the perfectly designed hull of his Paris steamboat was not strong enough to take the weight of the machinery placed in her, and she opened up and sank at the dock. The machinery was removed, and after the boat was raised, she had to be completely rebuilt heavier and with superior beds and bracing. But Fulton had yet to make his greatest mistake in the production of this his first and the world's pioneer scientifically designed (and, therefore, according to Fulton, its first truly "invented") steamboat. He had calculated that the boat would show a speed of about 16 miles an hour, but when the trial occurred on the evening of August 9, 1803, a local newspaper, JOURNAL DES DEBATS, reported a speed of 2.9 miles an hour upstream; "while going downstream it was more rapid." As the boat moved successfully for an hour and a half, the trials were generally deemed satisfactory by outside observers, but Fulton was chagrined. He had computed a speed of 16 miles an hour and realized, according to his own figures, only from 3 to 4 miles. He had laughed at older experimenters who had doubted his word and formulae, and now he had to admit not only that John Fitch got twice as much speed thirteen years before as he could with all his superior knowledge and pirating but also that the calculations were all wrong and that his method and formulae would have to be revised. Fulton never got over this experience, and to the end of his days—even if John Fitch in 1790 had driven his mechanically successful boat as high as 8 miles an hour—Fulton maintained that the maximum speed for any practical steamboat was 6 miles an hour. This absurd statement, in which he persisted, clearly proves that notwithstanding all his patent claims and statements made in patent-dodging and in regard to the fundamental virtues of real inventions, Fulton knew nothing about the resistance of vessels and the application of effective power to the driving mechanism of a steamboat.

Napoleon had been interested in the development of the Fulton-Livingston steamboat, for he had visions of steamboats' towing barges across the Channel loaded with troops to invade and subjugate Britain when calms and lack of wind in the Channel made its warships useless as far as movement was concerned. To take advantage of still weather, speed was required, and Fulton had promised about 16 miles an hour. When Napoleon learned of the Fulton steamboat's sinking through weakness and, after rebuilding, being able to make a speed of only 3 to 4 miles per hour, his wrath over Fulton's claims, accomplishments, and attitude in regard to the submarine was evident, and he said:

> There are in all the capitals of Europe a crowd of adventurers and men with projects who circle the globe, offering to all the rulers pretended discoveries that exist only in their imaginations. They are so many charlatans or impostors who have no other end but to make money. That American [Fulton] is one of them. Don't speak to me about him any further.

Fulton's first steamboat, although highly "hullaballooed" by her designer before its structural and speed failure and excused, explained, and even praised afterwards, was, nevertheless, a failure as an "invention" according to the requirements as outlined by Fulton. It is not surprising that Napoleon considered Fulton "all talk; no achievement," and it is well to know that he achieved nothing of practical value for either France or England. While Napoleon was interested in fast steamboats to tow barges of troops across the English Channel, Fulton never built a steamboat that could steam over 6 miles an hour or that was seaworthy enough to travel on the open sea.

Fulton, recognizing his backwardness in engine design and construction and knowing of the superiority, experience, and much greater success of Boulton & Watt, of Birmingham, England, as compared with any other engine builder in the world, placed an order with that firm for a double-acting engine of the latest model, with a 24-in. diameter cylinder and 48-in. stroke, complete with condenser and air pump. Fulton carefully concealed from the English builders his intentions in regard to use. He sent rough sketches showing how he would like the condenser placed in relation to the cylinder, but he wanted Boulton & Watt to use its best judgment in all respects; then he bombarded the firm with questions not only in regard to dimensions of the cylinder, piston travel, recommended steam pressure, and size of boiler if he burned wood instead of coal but also in regard to what precautions to take when the feed water was somewhat brackish. By placing an order for an engine to be used not for a mill as he implied but for a steamboat in America, Fulton wanted to start off from scratch in building a boat on the Hudson fortified with the best possible engine made by the leading and most experienced of engine builders and with their advice in regard to care and practical use. Boulton & Watt delivered a steam engine to Fulton in London in the late summer of 1805, about a year before the submarine inventor could demonstrate his new method of war, get all the money he could out of the idea, and depart for the United States. He had succeeded in obtaining drawings and the information needed from the engine builders and had also acquired a copper steam boiler weighing about two English long tons from Cave & Son, of London (who charged 52 cents per pound for it).

Livingston, through political influence, had obtained a twenty-year New York State steamboat monopoly that would expire in April 1807 if he did not operate a 20-ton boat successfully on the Hudson River at a speed of 4 miles per hour prior to that time. Fulton did not get back to the United States to build and demonstrate a practical steamboat on the Hudson prior to the spring of 1807. The submarine and the chance of getting big money for it in England was his big bet, and following his return to America he seemed loath to give his steamboat venture with Livingston much of his time. The attitude of the British Navy in American waters, which, following the firing upon the helpless new U. S. frigate *Chesapeake,* would have resulted in war under any president other than Jefferson, the pacifist, created an atmosphere in which Fulton sought to exploit his submarine and torpedoes. He was sore with the British, his former employers, and wanted to fight them. During the war scare, the United States Government showed some interest in Fulton's torpedoes, and after several attempts he succeeded in blowing up a little old brig anchored in New York Harbor for test purposes. The administration, however, was opposed to war, preparedness, and warlike gestures, so when the crisis with Britain blew over, Fulton knew that there was no money in the situation for him and no chance to make Britain regret throwing him overboard. Regretfully, he discontinued pushing his submarine and torpedo schemes and commenced to devote most of his time to the building of a steamboat for the Hudson River.

Livingston had to use much political influence to get the New York legislature to pass a statute in April 1807 extending the time of the state steamboat monopoly and granting two more years for Livingston and Fulton to meet the requirements. It was not until April 23, 1807, that Fulton was sufficiently interested to obtain possession of his Boulton & Watt engine, which had been lying unclaimed at the customhouse for half a year. The wood hull of the boat that later became known as the *Clermont* was built by Charles Brownne on the East River (between Stanton and Third streets) and taken to Paulus Hook, where Fulton had rented a workshop to receive her machinery and be in a favorable position for tryouts on the Hudson River. There are records stating that in June river men, fearing steam competition, tried to damage the boat, and armed guards had to be employed. Costs of construction ran far over Fulton's estimate and Livingston's stated limits, and money had to be borrowed from outsiders (Joel Barlow, David Dunham, etc.) to finish the boat. John Stevens, Jr., Livingston's former partner, refused to put a dollar of his in such a long, narrow steamboat, which lacked stability and which, he declared, should have been driven by screw propellers instead of cumbersome side wheels. As Stevens had not been consulted in the design and construction, he refused to become a partner with Livingston and Fulton in her ownership, and he felt that he knew too much about steamboats to be dominated by his brother-in-law and his very positive new partner.

Fulton, apparently, did not think there was much future in steamboating on the Hudson, and all the time that he was working on the *Clermont,* he was scheming to build boats for the navigation of the Ohio and Mississippi rivers. The future of steamboats in America, he affirmed, was on the western rivers. On August 9, 1807, four years after he had tested his first and only other steamboat on the River Seine at Paris, Fulton took his new boat out in the stream and tried her out. She was not finished, but money was coming in slowly, and an increase in the morale and confidence of investors, including Livingston himself, seemed desirable. The *North River Steamboat,* on this first trial, showed a speed of 3 miles an hour as against the 4 miles specified to gain the monopoly, but Fulton declared, "She will, when in complete order, run up to my full calculations." This was a sustained speed of between 5 and 6 miles an hour and much slower than Fitch had obtained in Delaware and New Jersey waters seventeen years earlier. It would seem that Fulton lacked enthusiasm or had qualms in regard to the success of his first American steamboat, for he wrote Livingston: "Whatever may be the fate of steamboats on the Hudson, everything is completely proved for the Mississippi, and the object is immense."

When the pioneer Hudson River steamboat made her first trip from New York to Albany, she was not hailed as a Hudson River steamboat, for the only contemporary newspaper announcing the event—the AMERICAN CITIZEN, issue of August 17, 1807—said:

> Mr. Fulton's ingenious steamboat, invented with a view to the navigation of the Mississippi from New Orleans upwards, sails today from North River, near States Prison, to Albany. The velocity of the steamboat is calculated at 4 miles an hour. It is said it will make a progress of 2 against the current of the Mississippi, and if so it will certainly be a very valuable acquisition to the commerce of the Western States.

The world's first commercially successful and profitable steamboat was an ugly and crude affair. Fulton, for all his boasting, knew nothing whatever about boat design and had no knowledge of elemental naval architecture. He had acquired by purchase an excellent and reliable steam engine, with boiler and auxiliaries, and had a floating rectangular box of a hull, with its ends cut off straight from the center line at about sixty degrees to form a pointed bow and stern; he connected the engine to side wheels placed over the sides, not knowing until the work was done and the load of fuel and passengers aboard what the draft of the boat would be. For a professing technical man, Fulton was very ignorant, and this along the very lines of scientific calculation for the determination of dimensions and proportions for which he claimed "invention." With records of practically all previous steamboat tests made on both sides of the Atlantic and drawings of the mechanism used in his possession, Fulton's job consisted only of connecting the engine to the side paddle wheels of the boat, and this he evidently did well, but it involved no invention whatsoever.

When the *North River Steamboat* (*Clermont*) left the wharf off West Tenth Street loaded with passengers for her maiden journey upriver on August 17, 1807, the boat did not work well, and she practically stopped. Fulton promptly sensed the trouble. The draft had been miscalculated, and he had given the paddles of the wheels far too much immersion. As the wheels had been made so the radius of the paddle blades could be varied, an adjustment of each individual blade was necessary; but this was done with dispatch, and the historic run of the *Clermont* was under way. The journey up the Hudson was reported as twenty-four hours in covering 110 miles from New York to Livingston's estate, where the boat stayed all night, and 40 miles the next day in about eight hours. Fulton said that the whole run of 150 miles was made in thirty-two hours at a speed of nearly 5 miles an hour, which complied with the requirements as specified for the steamboat monopoly of New York State.

Upon the *Clermont's* return to New York, the low-lying box raft, with wheels, a smoke-stack, and a mast, was boarded up above deck and fitted with cabins and berths. On September 4, 1807, the steamboat left New York on her first commercial passage, operating on a schedule, with twelve through and three way passengers aboard. The EVENING POST of New York on September 2, 1807, carried this announcement:

> The North River steamboat will leave Paulus Hook Ferry on Friday, the fourth of September, at six in the morning and arrive at Albany on Saturday at six in the afternoon.
>
> Provisions, good berths, and accommodations are provided.
>
> The charge to each passenger is as follows:

To Newburgh	$3	Time 14 hours	To Hudson	$5	Time 30 hours
To Poughkeepsie	4	Time 17 hours	To Albany	7	Time 36 hours
To Esopus	4½	Time 20 hours			

> For places, apply to Wm. Vandervoort, No. 48 Cortlandt Street, on the corner of Greenwich Street.
>
> Way passengers to Tarry Town, etc., will apply to the captain on board.
>
> The steamboat will leave Albany on Monday, the seventh of September, at six in the morning and arrive at New York on Tuesday at six in the evening.

Early in October, the *Clermont* carried sixty passengers on a downriver trip, followed by ninety on the upriver journey, and the boat became so well patronized that she made money notwithstanding frequent breakdowns, accidents, intentional damaging collisions, and the cost of repairs.

Spears says that the choice of location for the inauguration of steam navigation is to be noted, "for New York and the Hudson afforded an amount of traffic perhaps more valuable than could be found elsewhere for such a vessel; moreover, he [Fulton] was fortunate in making the trial at a time when the public were sufficiently enlightened to appreciate the value of steam." The important thing is that Fulton's pioneer steamboat worked with fair reliability from the start, and it probably would have done equally as well on any other river, sound, or inland body of water as it did on the Hudson provided it had had draft enough. There is some doubt in regard to the "enlightened" public that Spears refers to, for he himself says that the "spectators" at the start of the maiden passage "were naturally cynical" and shouted, "God help you, Bobby!" and "A fool and his money are soon parted." Colden, in the LIFE OF ROBERT FULTON, referring to this same occasion, speaks of "the jeers of the ignorant, who had neither sense nor feeling enough to suppress their contemptuous ridicule and rude jokes."

The *Clermont* was withdrawn from the run in November after steaming about thirteen hundred miles in 1807 at a speed of less than 5 miles an hour; whereas Fitch's boat had steamed about twice that distance in 1790 at a speed of 6 to 8 miles and suffered no more breakdowns than did the *Clermont.* Fulton wrote Livingston that their first Hudson River steamboat had "cleared 5 per cent on the capital expended" and this "after all accidents and delays." Fulton advocated rebuilding the *Clermont* and building other boats, affirming that a boat costing $15,000 would earn $10,000 a year.

It is said that the *Clermont* was reconditioned and enlarged during the winter of 1807-1808, but actually the hull of the old boat was condemned and a much beamier and stronger one built to take her place. A new boiler had to be installed, but the engine, wheels, and practically all the machinery were used again. Fulton capitalized all his experience and started along a sound road of discarding pseudo-science and profited by "trial and error." All of his succeeding steamboats were the natural product of evolution and an improvement over the boat that preceded them. Fulton quickly learned the importance of beam. In France he and Livingston had at one time talked of building a boat in England (before they built their French boat) that was to have ridiculous dimensions, with a ratio of length to beam of 15 to 1, and steam 8 miles an hour. When the original *North River Steamboat* was rebuilt and became the *Clermont* (or the second boat of the name), she was given a ratio of 8.3 to 1, and following this, later boats had ratios of 6.6 to 1 for the *Paragon* and 5 to 1 for the *Richmond.* The big *Chancellor Livingston,* launched after Fulton's death, had a length of only 4.7 times its beam. Fulton persisted, however, in his foolish "scientific" straight angular-ended, flat-bottomed, straight-sided box models for steamboats until he built the *Fulton* in 1813 to run on Long Island Sound, when he said that because of the waves and needed strength he was using a conventional model with curved lines. However, by reason of the activity of the British warships on blockade duty, the *Fulton* did not enter the Long Island service until March 21, 1815, when she carried thirty passengers from New York to New Haven in eleven hours, dock to dock.

No steamboat built by Fulton burned any fuel other than wood, but the last steamboat that he designed, the *Chancellor Livingston,* which he did not live to see finished, was the first of his boats to burn coal. It is surprising, however, that Fulton never built a reasonably fast boat. He never got over his early humiliation in Paris of predicting 16 miles an hour and realizing about 3 miles, and he maintained to his end that 6 miles was about the maximum speed of a steamboat. His final product, which was reported to have cost over $125,000, made only 6½ miles an hour, and she was launched in 1815, twenty-five years after Fitch had run his steamboat at a speed of 8 miles an hour and had visions of much greater speed. Fulton steadily increased the size of his steamboats for the Hudson trade. His pioneer *North River Steamboat* was of about 100 tons, but when "rebuilt" (which meant, in reality, replaced), the boat registered as the *North River Steamboat of Clermont* was of 182 tons. The *Car of Neptune,* following in 1808, was of 295 tons, the *Paragon* of 331 tons, and his last and biggest, the *Chancellor Livingston,* was of 526 tons.

Fulton died closely following the end of the War of 1812 with Britain. He was about fifty years of age, having been born in 1765. Although a native of Pennsylvania, he had lived only about eight and a third years in the United States as an engineering inventor and promoter specializing in steamboats, submarines, torpedo bombs and mines, warships, and canals.

Fulton adopted an old idea of a twin hull with a paddle wheel between and made it a double-ender for use as a steam-propelled ferry boat in New York Harbor, and the general idea, with the boats' running into slips (but having a single hull and either side wheels or screws) has prevailed to recent days. The early Fulton-built New York steam ferry boats were the pioneer *Firefly* of 118 tons (built in 1812), the *Jersey,* the *York,* the *Nassau,* and the *Camden.* In addition to the *North River Steamboat of Clermont,* Fulton designed and built the *Car of Neptune, Paragon, Richmond,* and *Chancellor Livingston* for the Hudson River service; the *Fulton* and *Connecticut* for Long Island Sound trade; the *Raritan* of 120 tons (built in 1808) and *Olive Branch* for the New York-New Brunswick run; the *Washington* for service on the Potomac; and the *New Orleans, Etna, Natchez,* and *Buffalo* for the Mississippi River trade. Fulton is also credited with building a steamboat named the *Empress of Russia* for use abroad.

Livingston pushed through the legislature of New York an act that, as far as the state of New York was concerned, gave him and Fulton an absolute monopoly of steam navigation for twenty years for their initial boat plus five years more, up to a maximum of thirty years, for each additional boat that they operated. Whereas originally granted exclusive rights for steam navigation on the Hudson, the monopolists evidently did not benefit consistently from the start by any such restrictive and exclusive law, for there is a record of an Albany-owned competitive steamboat line's staging a race with "the Fulton boat" as early as September 1809. The steam vessels were advertised as leaving Albany at the same hour, and we are told that the race was the exciting topic of that year; it was apparently close for much of the run, but Fulton's boat "fairly led at the finish." In April 1811, however, the New York legislature went so far as to pass an act empowering the monopolists to take over any rival boats operating or lying in New York waters in the same way as they would seek to recover their own stolen property. Livingston and Fulton held a tight monopoly in New York and sought to extend it throughout the country by means of patents, when, as a matter of fact, the monopolists had no originality and no invention. Litigation was constantly in the air and the Constitution of the United States winked at for years. In 1824, however, the Supreme Court put an end to the throttling and controversial monopoly, but at that time Fulton had been dead for nine years; Livingston had died in February 1813, just two years before Fulton.

During the War of 1812, Fulton tried to attach torpedoes to harpoons fired from a gun, and although Congress appropriated money to finance experiments, nothing came of them. He patented a gun called a "Columbiad" intended to be fired below the surface of the water, but the balls carried only a few yards, and the invention was of no practical value. Fulton urged the government to build an elaborate armored torpedo boat that would not submerge but approach the enemy with its heavy iron deck awash and be driven by a paddle wheel, with armored protection, turned by hand power. This proposed boat, which he called the *Mute,* was supposed to creep up on the enemy at night, and to turn the paddle wheel and obtain sufficient speed, it was proposed to have a crew of a hundred men aboard. Fulton's last attempt at a torpedo boat was a small edition of the larger *Mute.* This experimental craft carried twelve men, and when it first went to sea in June 1814, it was driven ashore by a gale and destroyed by men from two British warships.

Fulton's most ambitious venture during the war was designing and supervising the building of the *Demologos* (sometimes referred to as *Fulton the First*), a protected warship with twin hulls, a paddle wheel between, and the sides, deck, and top of the paddle box built of plank five feet thick. The hulls combined were 167 ft. long, 56 ft. wide, 13 ft. depth of hold, and 10 ft. draft. This vessel, financed by the Coast and Harbor Defense Association, of New York, and estimated to cost $320,000, was designed as a floating fort and was intended for harbor defense and not for sea work. She had an engine of 120 horsepower, carried thirty 32-pounders, and was supposed to be equipped with many horrible contrivances to throw terror into the hearts of the enemy. The *Demologos* was launched October 29, 1814, fifty-six days before the Peace of Ghent was signed to end the war and about four months before Fulton died. In September 1815, about seven months after Fulton's death, the *Demologos* ran her trials, steamed at the rate of 5½ miles per hour, and fired her guns, following which she was laid up at the Brooklyn Navy Yard and for years was used as a receiving ship.

The *Demologos* was the first steam war vessel in the world. Spears says that this craft, "crude as she was, would have changed the manner of war at sea had she been set afloat a year sooner." She was described as, "in every respect, a most formidable ship." It has been written by historians that this unique vessel had "a surprising effect on the imagination of people abroad, who published the most extraordinary reports of her powers." An article printed about her in England said that she could "discharge 100 gallons of boiling water per minute, brandish 300 cutlasses by machinery over her gunwales, and dart out 300 iron spears from her side every quarter of a minute," and this in addition to discharging "a terrific and heretofore undreamed of weight of solid shot, chain or grape, in every direction." It was added, "The furnaces can be used to heat projectiles that will destroy by fire as well as by the impact of heavy iron." It is said that the British fleet had orders to keep far away from her when the "huge and powerful floating battery" should be completed and commissioned. The *Demologos* was destroyed by fire and an explosion of her powder magazine in 1829, when she was about fifteen years old.

It is generally said by historians that, following Robert Fulton's death, which occurred on February 23, 1815, the business of the steamboat monopoly in New York State and of the Fulton-Livingston interests elsewhere began to wane, as Fulton had "no associates with his genius and progressive spirit." He had undoubted engineering ability, energy, and ambition, and he is entitled to the credit of producing a steamboat and two or three lines of steamboats that in eastern waters were operated at a good profit. But Fulton never displayed any genius in this matter, and whereas he profited by experience and by his mistakes as well as capitalized his successes, he was positively not progressive in a true technical sense as far as commercial steamboating was concerned. After he had found following the operation of his second North River steamboat—the *Clermont*—what design and construction would give satisfaction in the Hudson River service, Fulton showed progressiveness only by building his succeeding boats larger and beamier and capable of carrying more pay load and of making more money per boat per trip. The quality of design was not progressively improved, and his last and finest product, the *Chancellor Livingston,* not completed until after his death, had a speed of only 6½ miles per hour; whereas Fitch's boat, in 1790, had made 8 miles an hour. Fulton had expected his first steamboat, built in France, to make 16 miles, but after she made only about 3 miles an hour, he declared that 6 miles an hour was the maximum attainable speed for any steamboat. The placing of such a limit is positively opposed to the spirit of progression, and it was only after Fulton's death and the removal of his influence that steamboats commenced to show speed and to be designed for speed.

Fulton had no idea about modeling a boat, and he was no naval architect. His designed boat, described as "perfected and scientific," was a rectangular box, with the two ends pointed. At the low speeds that he was content with, his crude model did not handicap him much; for resistance was primarily due to wetted surface at such low velocities, but if he had attempted high speeds, wave-making resistance, etc., would have been such as to condemn his pointed boxes and compel the use of shaped, curved hulls. When in the *Fulton,* built for Long Island Sound service, and the *Demologos,* for coast defense work, he used orthodox shaped hulls, he did so for strength and seagoing qualities and not for speed. All of Fulton's steamboats, outside of his double-hulled, double-ended harbor ferry boats, were of the same design, and he did not have imagination enough to perceive that his relatively deep-draft eastern type of steamboat would not work on the western rivers. He persisted in building duplicates of the Hudson River *Clermont* for service on the Ohio and Mississippi rivers, but none of his boats could operate on those rivers. The Fulton-Livingston-Roosevelt venture, which built the eastern type of boat at Pittsburgh for intended use on the western rivers, was as unsuccessful and unprofitable as the Hudson River line was satisfactory, and Fulton's failure to show imagination and a progressive spirit left the greatest field for steamboats in the whole world open to outsiders, who had wits enough to build shallow-draft stern-wheelers adapted to the waters that they desired to navigate.

It was not until the Fulton-Livingston monopoly was broken in 1824 that steamboating in New York State commenced to be progressive. An opposition Hudson River steamboat line put on two steamers in 1825 and added a third in 1827. These steamers were said to be "much superior to those of the old line" (the line established by Fulton and Livingston), more comfortable, and much faster. In the latter year, Robert L. Stevens (a son of John Stevens, Jr.), who had originated a light wrought-iron walking beam to replace the heavy cast-iron beam previously used, put a third line of steamers on the river. In 1828 the *De Witt Clinton,* owned by Albany interests, entered the service and made a record run of 14 miles an hour between Albany and New York—more than twice as fast as any Fulton steamboat ever traveled. The Hudson River steamboat lines consolidated in 1832, and the surplus boats for the day run were used in a night line, which immediately proved successful.

Early American and British Steamers

In 1811, Nicholas J. Roosevelt built the steamer *New Orleans* at Pittsburgh, Pa., for western river trade. Roosevelt, engine builder of New Jersey and a one-time associate of Livingston, had joined Fulton and the steamboat monopoly company as an employee. Although the *New Orleans* and all her Fulton-designed successors were unfitted for use on the Mississippi and its tributaries, she proved that a steam-driven boat could fight her way upstream against the swiftest current of the Mississippi River. Evidently, the first successful operating steamboat in New England was the *Massachusetts,* which was running in steam packet service between Boston and Salem, Mass., in 1817. The first steamboat built for use on the Great Lakes was the *Walk in the Water,* constructed on the Niagara River in what is now Buffalo. She, apparently, experienced some trouble in bucking the current and getting out of the river, but when in lake waters performed creditably. On August 20, 1818, this boat steamed to Detroit on her maiden passage and made the run in about forty hours, "burning a cord of wood an hour." Canada followed the United States in practically applying the results of Fulton's pioneer work in steam navigation on the Hudson, and two years after the maiden run of the *Clermont,* a steamboat was built on the St. Lawrence and a second one in 1813.

Steam navigation had been held back in the United States (in both eastern and western river waters) fully seventeen years and probably nearer twenty by the refusal of both the states and private capital to encourage and financially back John Fitch and to promote the development and use of his invention after he had produced a mechanically successful steamboat. This Fitch boat, engaged satisfactorily in trade on the Delaware for a whole summer, steamed about three thousand miles without a serious accident, showed a speed of 8 miles an hour, and could have continued in service indefinitely (and been followed by other steamboats of similar and generally developing quality, larger size, and even greater speed) had this pioneer boat received patronage and her inventor and owners the encouragement they deserved, so that they could operate at a profit.

The first British steamboat was the *Comet,* built by Bell on the Clyde in 1812, which ran between Glasgow, Greenock, and Helensburg and carried passengers. This boat was only 42 ft. long, 11 ft. beam, and 5½ ft. deep and was driven by a one-cylinder engine. This pioneer British steamer made her first trip five years after the *Clermont's* success had been demonstrated on the Hudson River, New York, and the year following the building of Fulton's *New Orleans* at Pittsburgh, Pa., for the navigation of the Mississippi. Early in 1816, the first English Channel steamer, the *Eliza,* crossed to Havre in twenty hours, and she was small and of such light draft that she proceeded up the River Seine to Paris—to the amazement of the thousands of French people attracted by the spectacle.

Claude Francois-Dorothée, Marquis de Jouffroy d'Abbans, who the French for a century or so have claimed invented the steamboat (although they officially pronounced as a failure his early attempt to produce a boat driven by steam in 1783), made another attempt to design and build a steamboat in 1816. This boat, which Jouffroy patented, named the *Charles-Philippe,* was also a failure as was the product of a rival inventor, and the French, after making other attempts, without success, to get into the picture as steamboat builders, had their government in 1824 send an engineer to the United States to learn from the Americans, "the original and leading steamboat builders of the world," how to design and build steamboats and their machinery. Flexner says that both Russia and Java owned a steam-driven boat in 1815; that Germany had one in 1816, although service on the Rhine was not inaugurated until 1825; that the Danube had its first effective steamer in 1818, the Ganges in 1819; and that the first boat operating by steam appeared on the Swiss lakes in 1822.

The British Navy, while not favoring steam drive for warships, greatly encouraged at many ports the building of small craft propelled by steam, with the result that from the orders given builders for numbers of steam-driven vessels of small tonnage and low speed, private capital commenced to branch out and both build and use steam-propelled craft of steadily increasing size, seaworthiness, and speed.

The United States built the first steam war vessel and, in doing so, thoroughly disturbed the British Admiralty as well as the British nation as a whole. The British then took up steam propulsion for war and other government vessels with vigor, and in 1839 the English had ninety-six war steamers in their navy and the Americans only one. This encouragement and development of marine steam engines in Britain by the British Navy and other departments of government caused the construction of engine-building shops, the training of mechanics, and the gaining of much practical experience in design, construction, and operation (all indirectly at government expense), which was a great boon to the mercantile marine and resulted in the rapid growth of commercial steam navigation under the British flag.

Because of government encouragement, economic and industrial conditions, and natural resources, Britain was much in advance of the United States in the practical application of steam power and engineering in general, with metal, from the early days of the republic and, in fact, up to the last decades of the nineteenth century. The British had been building steam engines for stationary work for several decades before Fulton bought the engine from Boulton & Watt, of Birmingham, which he used in the *Clermont.* Stevens, of Hoboken, N. J., scorned to buy any machinery from England; he built all of his own engines, although he was obliged to train men to work in iron in the 1780's and 1790's. Day, in his HISTORY OF COMMERCE, says that inventors of the United States often felt compelled to go to England to perfect their inventions because of the superior facilities afforded in British machine shops, and this condition continued for the greater part of a century. John R. Spears says that some of the best machinery invented in the United States in the eighteenth and the first half of the nineteenth century was first put in use in Great Britain.

On April 7, 1819, before the *Savannah* made her historic crossing of the Atlantic, the Ocean Steam Ship Company was incorporated in New York. Among the organizers were some men who were or later became important ship operators, such as Capt. Preserved Fish, who soon afterwards started the highly successful Swallowtail lines of transatlantic sailing packets, and David Dunham, who in 1806-1807 helped finance Robert Fulton in the building of the *Clermont* and in 1820—before the first coastwise sailing line was established—placed the *Robert Fulton,* a very good ocean-going steamship of 702 tons, on the run between New York and New Orleans with calls at Charleston, S. C., and Havana en route. The *Robert Fulton,* on this "long, difficult, and stormy run of some two thousand miles," performed mechanically with great reliability and satisfaction. She was designed primarily to carry passengers, mail, and light freight (in addition to a good load of fuel and fresh water), as were all of the early steamers, and in the season she did a big passenger business and became quite popular. Albion says, "Had she been twins or triplets, the need for sailing packets on that route might never have arisen. The trouble was that, while her running time was more regular than that of the sailing vessels, her schedule was not. . . . The new sailing packets, with their frequent sailings, took over most of that business." The *Robert Fulton,* after performing well for four or five years, had finally to be withdrawn from the run because she did not pay. If she had been one of several vessels in a regular line, she would most probably have made money and become famous as by far the best and sturdiest steamer of her day and generation. No foreign steam vessel built in the first three decades of the nineteenth century was, for reliability, seaworthiness, and mechanical excellence, in the same class as the American pioneer long-voyage deep-sea steam packet *Robert Fulton,* built in 1819-1820.

When the Ocean Steam Ship Company was incorporated by the New York legislature in the spring of 1819, it was thought that Americans were going to give the newly formed Black Ball Line of transatlantic sailing packets competition with steam. Apparently, David

Dunham, of all the organizers, was the only one who had the courage of his convictions in regard to marine steam navigation. He built a splendid steamer, but the operating results of the *Robert Fulton,* while eminently successful mechanically, were not such as to entice investors who wanted a substantial return on the capital risked in a new adventure. If the United States Government had stepped into the picture in 1819-1820 (at the time of the successful crossing of the Atlantic by the pioneer American steamer *Savannah* and of the fine performance of the *Robert Fulton* in the long New York-New Orleans ocean run), had encouraged and stimulated steam engineering and construction, had protected and subsidized American steamship lines to carry mails, etc., and had seen that their ships were economically and abundantly supplied with coal as fuel (as the British Government did a few decades later), the Americans would have been, from the start, leaders as well as pioneers in deep-sea steam navigation.

In 1819 a steam vessel was placed on the route between Mobile and New Orleans, but this Gulf of Mexico pioneer steam packet service failed not because of any mechanical shortcomings but because the service could not be made to pay with wood as fuel and the associated limited passenger patronage and freight capacity. In 1822 the steamer *New York* was put in the run between New York and Norfolk; she operated well and reliably, but was unable to make money in competition with the fast coasting sailing vessels. A steamer named the *Patent* began making regular runs between Boston and Maine ports in 1823; however, this vessel's operation, while successful as far as practical steam navigation was concerned, was unprofitable to the owners. Spears has said, "While fortunes were made in steamboats plying on inland waters of the United States, almost every venture made with American steamers upon the ocean during the thirty years following the *Clermont's* first trip on the Hudson proved unprofitable." The reasons for most of these failures, aside from certain stupid attempts in the mid-thirties to use smooth-water river construction in deep-sea steam vessels, were twofold: (1) the necessity of using wood as fuel and (2) the competition of sailing packets, which were the finest, fastest, and most efficiently and economically operated sailing craft in the world.

The report of the commissioner of navigation states that four steamboats, aggregating 457 tons and averaging 114 tons per vessel, were built in the United States in 1812—the first year for which there is an official (belated) record of such construction. In 1813 seven steamboats, totaling 1,430 tons and averaging 204 tons per vessel, were built; by 1819 (when the American-built steamer *Savannah* made her historic crossing of the Atlantic), more than a hundred steam-driven vessels had been constructed, the official records for that one year alone showing twenty-eight steamers built aggregating 7,291 tons and averaging 260 tons per vessel. It was 1823 before the United States Government deigned to report on the tonnage of steam vessels and, in that year, stated the tonnage of enrolled steamers as 24,879 tons. By 1833 the tonnage had increased to 101,306 tons. The government records show that 100 steam vessels totaling 15,401 tons were built in the United States in 1832 and that in 1837 (the year before the pioneer British steam packets crossed the Atlantic) the United States constructed 158 steam vessels aggregating 33,455 tons and, at this time and for many long years before and after, was building and operating a great many more steamers of a much larger total tonnage than Britain. Moreover, in the United States, steamboats could compete with sailing vessels much more successfully on river and sound routes, where sail was handicapped in its operations and steam was helped in its fuel problem. On the open sea, American sail, with freedom of motion and no fueling to consider, held a decided advantage over steam for long years; American coastwise sailing craft were admittedly the best in the world and the square-rigged sailing packets running regularly in coastal trade were faster and better appointed, equipped, and operated than the best deep-sea long-voyage sailing vessels of any other nation.

There was a difference in the early development of marine steam navigation in America and in Britain. For many years, the practical application of the new method of propulsion was confined, in the United States, to the navigation of the great rivers, bays, and sounds (all primarily "inland waters"), but Britain, having no great rivers and protected waters, had to adapt its steamboats to deep-sea work from the earliest days.

In 1818 the *Rob Roy* was put on the route between Glasgow and Belfast, and later she ran across the English Channel between Dover and Calais. In 1822 a steamboat line was established between Liverpool and Glasgow, and in 1826 steamer service was inaugurated on the east coast between Edinburgh and London. While the steamers of the United States were increasing in size and power and making records and history on the Hudson River, Long Island Sound, and the Delaware, Chesapeake, and Mississippi rivers (all inland waters), the steam-driven boats of Britain—likewise all side-wheelers—were engaged almost exclusively in ocean-going service.

Historians tell us that so great was the desire of the British to turn to steam marine navigation in the twenties and thirties and to capitalize (1) their knowledge of machinery (with facilities for building it) and (2) their natural resources and advantages in the realm of iron and coal that in 1825 forty-five stock companies were formed in Liverpool alone to trade with steam packets to every part of the world. Henry Hall writes:

> Most of these projects were bubbles which burst almost as soon as they were set afloat, but some of them were the germs of the later grand enterprise and success of the English people in steam navigation. The first steamboat was sent to India in the latter part of 1825, and others soon followed. Regular lines were established to France, Spain, and the Mediterranean, then to India and the West Indies, and finally in 1839 [1838] to America.

This statement of rapid development in ocean steam navigation is rather deceiving. Real long-voyage ocean steam navigation for commercial purposes began in 1838 on the North Atlantic. The vessels were the British steamers *Sirius* (built for British deep-sea coastal work) and the *Great Western* (designed and built as a transatlantic steam packet), which successfully crossed the Atlantic carrying passengers and freight from the British Isles to New York and inaugurated regular sailings of steam packet lines. Prior to this, there had been a few experimental steam voyages across the Atlantic, steam voyages from England to the Spanish peninsula, and even an experimental voyage—made by the British steamer *Enterprise* in 1825—skirting the African coast and proceeding via the Cape of Good Hope from Britain to Calcutta, but such a voyage, while adventurous, settled nothing as to the commercial value of steam. The packet line referred to by Hall as running to India was no more a line to India than the steamer line that ran from New York to the Atlantic side of the Isthmus of Panama (and whose passengers bound for California were required to cross the Isthmus and take another vessel for the long run up the West Coast to San Francisco) was a steam packet line to California. Before the Suez Canal was built, steamer passengers, mail, and "express" bound for India traveled—with many stops en route—to Egypt and crossed to a Gulf of Suez port by land, continuing in a different vessel down the Red Sea and across the Indian Ocean to a destination.

The achievement of the British steamer *Enterprise* in making a run from England to India during the latter part of 1825 has been overemphasized by marine historians, and the steaming performance of this vessel is not comparable with that of the American pioneer deep-sea steamer *Robert Fulton*, which ran between New York and New Orleans for a period of nearly five years before the *Enterprise* made her long one-way passage skirting the coast and making many stops en route. In 1824, as a result of a popular clamor to establish a line of fast steamers to run between England and India, a prize of 100,000 rupees (80,000 raised by popular subscription and 20,000 supplied by the government of India) was put up to be given to the first steamer that would make two round voyages between England and India before 1826, with the length of each one-way passage not exceeding 70 days. In an attempt to win this prize, a syndicate purchased the wood paddle steamer *Enterprise* of 479 tons, then building, and this vessel (122 ft. long and 27 ft. beam, fitted with an engine of 120 nominal horsepower and designed for a speed of 9 knots per hour) was fitted with a fore-

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> Most of these projects were bubbles which burst almost as soon as they were set afloat, but some of them were the germs of the later grand enterprise and success of the English people in steam navigation. The first steamboat was sent to India in the latter part of 1825, and others soon followed. Regular lines were established to France, Spain, and the Mediterranean, then to India and the West Indies, and finally in 1839 [1838] to America.

This statement of rapid development in ocean steam navigation is rather deceiving. Real long-voyage ocean steam navigation for commercial purposes began in 1838 on the North Atlantic. The vessels were the British steamers *Sirius* (built for British deep-sea coastal work) and the *Great Western* (designed and built as a transatlantic steam packet), which successfully crossed the Atlantic carrying passengers and freight from the British Isles to New York and inaugurated regular sailings of steam packet lines. Prior to this, there had been a few experimental steam voyages across the Atlantic, steam voyages from England to the Spanish peninsula, and even an experimental voyage—made by the British steamer *Enterprise* in 1825—skirting the African coast and proceeding via the Cape of Good Hope from Britain to Calcutta, but such a voyage, while adventurous, settled nothing as to the commercial value of steam. The packet line referred to by Hall as running to India was no more a line to India than the steamer line that ran from New York to the Atlantic side of the Isthmus of Panama (and whose passengers bound for California were required to cross the Isthmus and take another vessel for the long run up the West Coast to San Francisco) was a steam packet line to California. Before the Suez Canal was built, steamer passengers, mail, and "express" bound for India traveled—with many stops en route—to Egypt and crossed to a Gulf of Suez port by land, continuing in a different vessel down the Red Sea and across the Indian Ocean to a destination.

The achievement of the British steamer *Enterprise* in making a run from England to India during the latter part of 1825 has been overemphasized by marine historians, and the steaming performance of this vessel is not comparable with that of the American pioneer deep-sea steamer *Robert Fulton*, which ran between New York and New Orleans for a period of nearly five years before the *Enterprise* made her long one-way passage skirting the coast and making many stops en route. In 1824, as a result of a popular clamor to establish a line of fast steamers to run between England and India, a prize of 100,000 rupees (80,000 raised by popular subscription and 20,000 supplied by the government of India) was put up to be given to the first steamer that would make two round voyages between England and India before 1826, with the length of each one-way passage not exceeding 70 days. In an attempt to win this prize, a syndicate purchased the wood paddle steamer *Enterprise* of 479 tons, then building, and this vessel (122 ft. long and 27 ft. beam, fitted with an engine of 120 nominal horsepower and designed for a speed of 9 knots per hour) was fitted with a fore-and-aft rig, with good sail spread, and especially equipped and conditioned for making the required India voyage. The *Enterprise* left Falmouth on August 19, 1825, and reached Calcutta after a passage of 113 days, having spent 10 days in coaling en route. The run was a great disappointment to all interested as far as speed was concerned, and the syndicate lost heavily on the venture, as it had tried to do what was then "the impossible" in regard to both speed and the time given in which to make two round voyages. The Indian authorities recognized the spirit of the attempt made to win the prize by awarding 50,000 rupees to the owners of the *Enterprise,* and as the syndicate declined to stand the loss of sending the steamer back home, but put her up for sale in Calcutta, she was purchased at an appraised price by the government of India and converted into a warship. It was because of this experiment in trying to develop a water route from Britain via the Cape of Good Hope to India that the Mediterranean, Isthmus of Suez, and Red Sea route was surveyed; but it was not until 1839 (a year after the successful crossing of the Atlantic by steam packets) that the Peninsular and Oriental Line was established.

The British Government, as early as 1834, had adopted the policy of encouraging the organization of steam packet lines. With the rapid gaining of experience by British engineers in the production and use of steam boilers and engines, it was felt that Britain, applying its knowledge acquired by building increasing numbers of power plants demanded by the industrial revolution, could quickly and effectively apply the principles to marine propulsion with side wheels. An experimental steam packet line—government sponsored—was put in operation to the Isle of Man. In 1834 similar service was established across the North Sea to Rotterdam and Hamburg, then a still longer one across the usually stormy Bay of Biscay to Gibraltar. Each was a government-aided private enterprise, and none of these steam packet companies would have come into existence had it not been for the encouragement, support, and fostering care of the British Government. Parliament voted $85,000 a year to the Rotterdam and Hamburg and $150,000 to the Gibraltar steam packet lines.

The British Government, long before it made in 1839 a contract with Samuel Cunard (to operate a steam packet line between Liverpool and Halifax, Nova Scotia, and to continue on to Boston, Mass., with an occasional connecting sailing to Quebec), had decided that the future of the British mercantile marine lay in the utilization of steam power to supplant sail, in which field the Americans had shown and were demonstrating, to a steadily increasing degree, an overwhelming superiority in both the designing and building of wood sailing ships and in their operation at sea. Britain had coal and iron ores in as great abundance, relatively, as America had timber and naval stores. Later, Britain was to capitalize still further on the practical use of its natural resources by building its hulls of iron, but during the thirties and forties, Britain commenced to wage its war with the United States for marine supremacy, using British Government-subsidized wood steamers driven by British machinery, constructed of British metal, and burning British coal.

The British, with their steamboat service, had been navigating reputedly rough waters (the Bay of Biscay) for years before American steamers were placed in a regular coastal service to round Cape Hatteras. This fact, at first blush, would seem to be responsible for the failure of some of the early American steam packets in the coastal trade, for it is evident that the first fleet of five steamers placed on the New York-Charleston run (between 1834 and 1838), although fast and splendid performers in placid waters, had inland, or protected water, hulls and were not proportioned properly nor built strong enough for the stormy ocean route around Hatteras.

These early Charleston steam packets were operated by James P. Allaire, a builder of marine engines, and Charles Morgan; they made the run in three days as against an average of about seven days for the sailing packets of the old, established, and well-operated Charleston Ship Line. Whereas they did not carry much freight, they carried the mails and handled a lot of the passenger traffic during the period that they engaged in the service. However, public confidence in the line was undermined by a series of accidents and the fact that the steamers had too frequently to make for a port, during their scheduled runs, either for shelter or to undergo repairs. The end came, as far as patronage of the line was concerned, with the disaster to the steam packet *Home,* which, battered by the seas, was badly strained and started uncontrollable leaks; she was driven by a northeast gale on Diamond Shoal and, after merciless pounding, broke up with the loss of "nearly a hundred" lives. After the boiler of a steamer operating between Baltimore and Savannah blew up at sea and killed "more than a hundred," thus further detrimentally affecting passenger confidence and travel in steam vessels, the Charleston steam packets were withdrawn and transferred to a safer route on the Gulf of Mexico, where for years the steamers traded with success between New Orleans and Texas ports.

There seems to have been no excuse for putting the river steamboat type of vessel in an ocean trade route around Hatteras. Allaire, a brilliant engineer, unfortunately knew nothing about naval architecture, and the ill-fated *Home* was built 212 ft. long, 22 ft. beam, and only 12 ft. deep. The ratio of length to beam was 9.6 to 1 (making the boat far too narrow), but the ratio of length to depth, which determines the natural strength of the vessel to resist hogging and sagging, was 17.7 to 1—an impossible and "criminally absurd" ratio. The engine was very heavy, with a cylinder 56 in. diameter and 9 ft. stroke. Iron braces, placed on each side of the hull to strengthen it, broke loose on the steamboat's first trip and were, evidently, never properly repaired, although this was a definite warning of inevitable trouble to come if the "elastic movement of the vessel in a heavy sea" were permitted to continue. It is significant and worthy of note that the owners of the *Home* were so confident of the strength, quality, and suitability of the vessel for the service in which they placed her that the only insurance they carried on her was "for a small sum to secure a creditor."

John Laidlaw, in 1838, placed the steamer *Natchez* in the New York-New Orleans run, but she was withdrawn after a few trips, as she did not pay. In 1846 a suitable, seaworthy steam vessel (more like the *Robert Fulton* of 1820 as far as seagoing properties were concerned) was placed in the New York-Charleston run by Spofford, Tileston & Company, of New York, and during the following year two large steamers of this type, the *Southerner* and the *Northerner,* were profitably carrying freight as well as passengers and mail between the ports. These vessels operated reliably, safely, and economically, with a weekly service and a length of passage of about fifty-seven hours, and made a record that not only finally drove all sailing packets out of the Charleston run by 1855 but also gradually caused strong and seaworthy steam packets to displace sailing packets on all other United States coastwise runs.

Capt. Moses Rogers—the Commander of Each of Three World-famous Pioneer and Historic Steamers

Capt. Moses Rogers, who had commanded the *Clermont* on her maiden voyage on the Hudson, was a person of historic importance in the development of steam navigation. He not only was in charge of this the first vessel to be driven successfully by steam power but also is credited with taking (with the owner's son Robert L. aboard), in June 1808, John Stevens, Jr.'s steamer, the *Phoenix,* from New York to the Delaware, this being the first voyage of a steam vessel on the ocean. Captain Rogers, historians tell us, was selected in 1816, because of his reputation for courage and skill, to take the steamboat *New Jersey* (built for inland waters trade) from New York to the Chesapeake, "a voyage thought to be full of danger for such a vessel."

Not content with these claims to immortal fame, Captain Rogers became "inspired with the ambition to be the first to drive a steamship across the Atlantic." In 1818, Francis Fickett built a square-rigged ship at his New York yard for "builder's account." Captain Rogers persuaded Scarborough & Isaacs, ship merchants of Savannah, Ga., to purchase the Fickett ship, install a steam engine and boiler with removable iron side wheels, and put her in service as a sailing ship, with steam auxiliary power, between Savannah and Liverpool. Captain Rogers took the new steam vessel, named *Savannah,* to her new home port from New York, using wood as fuel during the 41½ hours that the machinery was in use. This was her trial, or conditioning, trip, and on May 24, 1819, the *Savannah* sailed from the Georgian port for Liverpool, making the passage in 27 days, during which period she used steam for some eighty hours (the extent of the use of the engines was limited by the supply of fuel aboard). While steaming off the coast of Ireland, a revenue cutter hastened to her assistance, believing her to be on fire, and the arrival of the vessel at Liverpool, steaming up the Mersey and completing a voyage of the Atlantic, created a sensation not only there and in all Britain but also throughout the civilized world. Captain Rogers took the *Savannah* from Liverpool to St. Petersburg, making many stops at ports on the way. The machinery was used only at intervals. The vessel returned to Savannah in late November after a period of about seven months spent in trade and exploitation of an idea. The fuel question had been troublesome and the trip expensive, and as the owners could not continue to lose money operating the ship as an auxiliary steamer, they reluctantly removed the machinery and sold the vessel and her machinery, separately, in New York.

Essential Differences in Development of Steam Navigation in England and the United States

In relation to Britain, America was handicapped in the development of steam engineering —both stationary and mobile, land and marine—by the size of the country and the difficulty of transport, for long distances, of coal, which was the only economic and efficiently compact fuel known and available at the time. All of the early American steamers had to be built with boilers to burn wood as fuel, and either very frequent stops had to be made to replenish the wood supply, with associated short runs between points (which greatly lengthened the time from dock to dock on a long journey), or so much space and weight had to be used for the wood fuel that there was little cubical capacity available for freight and pay load. Britain, being a compact little country with its iron ore and coal centrally located, carried on more or less concurrently the opening up of its mines and the development of iron machinery, steam engineering, coal-burning boilers, and iron construction. Moreover, Britain is an island, and as its population increased, it grew to be dependent on the outside world for many essentials to its continued existence as a world power. Therefore, it was primarily marine-minded, and a maritime nation needs ships. As Britain in the early nineteenth century had practically no timber from which to build its own wooden ships, there was, from the start, an incentive to substitute domestic iron for imported wood as a material for shipbuilding in Britain. This incentive did not exist in the United States until the size of ships made the use of iron or steel essential because of the needed strength.

At an early date, Britain, a pioneer in ordinary industrial operations, felt the need of a power that would be superior to that of man or animal. However, Watt, with his steam engine, gave Britain exactly what was needed for its island growth and prosperity, for it had in great abundance the iron from which to build engines and steam boilers and the coal, close at hand, as an economic fuel—economic both in combustion and transport. The development of the steam engine in Britain was primarily due to the absolute need of building pumps that would lift water, especially from deep mines, when hand power and wind failed. The early Savery, Newcomen, and Watt engines were all designed to operate steam pumps. The railroad in its infancy was associated with British coal mines and steam engines; mining coal, making iron rails, building locomotives to haul loads of coal, constructing boats of iron, and putting steam engines in boats developed altogether in a perfectly natural manner. In America, wood was abundant and cheap and the best available economic building material. In America, the British steam engine was applied successfully and with ingenuity in many channels, and triumphs in originality were scored, but its general use was handicapped by the problem of fuel and transport. It was not until mid-century and, in fact, after the Civil War that the call for big and fast ocean-going steamships driven by screw propellers made it necessary or even advisable for America to consider the substitution of iron for wood as a shipbuilding material—a substitution that it was to Britain's economic and national advantage to make many years earlier. The building of railroads over tremendous distances was necessary to transport coal for the general economic use of steam engines and for the development of American industry and, indeed, of the country at large. It is unfortunate that, because of political conditions, during the fifties plans could not be projected for developing the country internally (and the West) with the necessary railroads, mining, public utilities, and industries and, at the same time, for maintaining, through marine steam engineering (with screw propulsion) the supremacy of the United States on the ocean trade routes of the world.

The Tubular Boiler Invented and Developed in the United States

MacFarlane credits John Stevens, Jr., of New Jersey, with the invention of the tubular boiler, which, MacFarlane says, "has been the means of working wonders, for in a boiler six feet long, four feet wide, and two feet deep, he exposed four hundred feet of surface in the most advantageous manner to the action of fire." Whereas Stevens did much valuable work in steam engineering and contributed highly to the development of steam navigation, he did not originate the tubular boiler. John Fitch designed a pipe boiler in 1785, but delayed building it for a couple of years, as he was fearful that, while it would save much weight and increase efficiency, he would not be able to build it so that it would not leak. James Rumsey claims that in the winter of 1785-1786, he ordered pipes for a boiler from the Ante Eatum (Antietam) Iron Works, but that when he proceeded to get ready to make a test of his pole-boat by steam in 1786, he abandoned the attempt to try to put it together and use his pipe boiler. A year later, Rumsey is said to have completed his new type of steam generator, but the combination of boiler and engine was not successful. Stevens had become interested in steamboats because of Fitch and had endorsed that inventor's application for "the protection and encouragement of the legislature" of New Jersey, which was granted as far as a monopoly went on March 28, 1786. Stevens learned of Fitch's thoughts and plans, which probably included the pipe boiler. In September 1788, Stevens wrote Rumsey about the pipe boiler, but at that time Rumsey was in England, where in November 1788 he patented it. In May 1788, The Rumsean Society had been formed in Philadelphia to promote all of Rumsey's inventions, and it had promptly decided that the pipe (or tubular) boiler was the most immediately valuable of all the so-called Rumsey inventions, which consisted of a steamboat, a mechanical pole-boat, a pipe boiler, mills, and a steam engine for raising water. Hearing that Fitch was contemplating applying for a patent in England, "the land of steam engines," on his pipe boiler, the newly formed company sent Rumsey over to England to beat Fitch in the filing of a patent application. As the patent was granted Rumsey in England and there was no filed protest to it, it is evident that there had been no prior use in Britain and that the invention originated in the United States, but it is controversial as to whether John Fitch or James Rumsey had the idea first. John Stevens, Jr., was apparently the third American to experiment with and strive to develop the pipe boiler, and Fitch, Rumsey, and Stevens all preceded the first practical British interest in this great advance in steam generation.

Whether Fitch or Rumsey originated the pipe, or tubular (fire-tube), boiler, it is evident that Rumsey first suggested the water-tube boiler, which he patented in England in November 1788, many long years ahead of its possible practical use. Boulton & Watt, the leading British steam engineering firm, wrote Rumsey on August 29, 1788:

> In regard to your new boiler, consisting of a narrow tube bent in a spiral or zigzag form, containing the water within it and having the fire or flame applied to the outside of it (the drawing of which you showed us) we shall give no opposition to your obtaining a patent for it, and shall observe the necessary secrecy until the patent is completed, in which we wish you success.

It is surprising that it was not in Britain, the land of steam and the country in which the steam engine originated and was developed until it became a power sufficient to cause the industrial revolution, but in America that improvements in the original reservoir boiler were made. The United States has always led the world in steam boilers, the great "Scotch" boiler, in both fundamental design and construction, being American.

Following John Fitch's or James Rumsey's invention of the tubular boiler, America led, in both the design and improvements, in the construction of fire-tube boilers. When Charles H. Cramp, of Philadelphia, visited Britain in 1871, he found the much-vaunted "Scotch" boiler merely an adaption of what he called "an old Philadelphia boiler"; but while he gives John Elder credit for the practical introduction and development of the old compound engine for ocean navigation (which certain American marine engine builders took up seriously in the early seventies), he found that Britain was very backward in the art of boiler-making. He writes:

> We found during this trip that the art of flanging boiler-plates in Great Britain was entirely unknown, and that all British boiler-heads were secured to the side plates and to the furnace ends by means of angle bars in the corners, a crude and primitive method of construction. It was impossible for us to understand this backwardness or ignorance on the part of the British, as the flanging of boiler-heads had always prevailed here. We called the attention of the British builders generally to this superiority in boiler construction, but little or no attention was paid to what we said at that time; but when the four [Cramp-built] ships of the new [transatlantic American] line arrived in Liverpool, draughtsmen from all quarters were sent to make sketches of the boiler work and of many other devices new to them, besides the boiler construction, one of which was the use of white metal in bearings and journals. This feature in the engine construction the British had not taken up when we visited their works.

Early Steamboat Propulsion—the United States Originates and Develops the Practical and Efficient Use of the Screw Propeller

The experiments made in the eighteenth century and at the turn of the century definitely proved that the only efficient and practical mechanical appliances for driving a steamboat through the water were the snow-shovel stern paddle (Fitch), the paddle wheel, and the screw propeller. In the early stages of the development of steam navigation, the paddle wheel, although it had been condemned by Franklin, was preferred; for it was simpler, was operated direct at few revolutions, and was better adapted to the type of steam engines developed during the first half-century of their practical use in marine installations.

Franklin did much to get American steamboat inventors "off on the wrong foot." He was held in such high respect as a scientist that when he declared that the paddle wheel had never been found so effectual as to encourage consideration of this form of drive for a steamboat, he succeeded in turning the minds of Fitch, Rumsey, Stevens, and others from this mode of propulsion; but later, many long years before Fulton was influenced to adopt the paddle wheel, Morey proved Franklin to be wrong. Franklin also did early American steamboat inventors a disservice when he revived an old suggestion of driving a boat ahead by discharging water from its stern below the water line. This was the pump, or fire engine, drive that became known as "jet propulsion." Although without novelty and unquestionably very inefficient, James Rumsey concentrated his energies on this form of steam propulsion. Arthur Donaldson, of Philadelphia, and James Rumsey, of Virginia, each claimed to have invented it, and Rumsey obtained a patent for it in England and made a failure of his attempt to build a jet propelled steamboat there. John Fitch was evidently intrigued with the simplicity of this form of drive, but he resisted the lure of following Franklin's authoritative and gratuitous advice. However, jet propulsion is being used today to drive lifeboats where the churning of a screw propeller in the water would endanger lives that the boat seeks to save, and the modern rocket drive is a form of jet propulsion.

Marine historical writers generally give John Stevens, Jr., of New Jersey, credit for originating the screw propeller, an honor to which he is not entitled, although he certainly contributed much toward its development as he did to the use of tubular boilers, high-pressure steam, and rotary engines. Stevens spent, it is said, "twenty thousand dollars and thirteen years' labor" in seeking to perfect a screw propeller driven by a rotary engine. Not being able to find mechanics competent to work on his mechanisms and being unable to work with tools himself, Stevens built a machine shop of his own and stood the expense of training likely young men as machinists, founders, etc. He also had his own son, Robert Livingston Stevens, brought up from childhood to be a skilled mechanic. In 1804, John Stevens, Jr., built a boat 25 ft. long and 5 ft. beam, propelled by screws, that made several impressive and promising runs on the Hudson and crossed the North River from Hoboken to New York at a speed of "over four miles an hour."

As early as 1775, David Bushnell, of Saybrook, Conn., used a screw for propulsion when he designed the world's pioneer submarine boat and was evidently the first to make use of a screw propeller to drive a boat. Following Bushnell's use of it during the War of the Revolution, the screw was apparently known as a possible means of marine propulsion to at least a few of the early American steamboat inventors prior to the days of Robert Fulton. It is said that John Fitch in 1796, upon his return from France, drove a boat by a screw propeller on Collect Pond in Manhattan, New York. John Hutchins claimed that as a boy he was present during this trial and that Chancellor Livingston was also on board. Hutchins was positive that the designer and builder of the machinery of this boat and the man who conducted the test was Fitch, and Hutchins was so intimate with the boat and her trials that he had drawings and descriptions of the boat and her machinery.

Charles H. Cramp, in his memoirs, gives John Stevens, Jr., of New Jersey, credit for the invention in 1803 of the screw propeller "as it practically exists today" (early twentieth century), but he states, "The successful introduction of screw propulsion in the United States was certainly owing to the combined efforts of Stevens, Ericsson and Clyde." Stevens and Ericsson are evidently entitled to leading recognition after Bushnell (and possibly Fitch), but after them should come Commodore Stockton, who was responsible for the early financing of Ericsson and bringing him to the United States. Cramp says that Thomas Clyde was the first shipowner to introduce screw propulsion in ocean commerce in the United States by building in 1844 the twin-screw steamship *John S. McKim,* which he used in the Gulf of Mexico trade and as a transport during the war with Mexico. It was Ericsson who influenced Thomas Clyde to use screw propulsion on the *John S. McKim,* and Ericsson designed and built the machinery for the vessel in Philadelphia. Capt. Robert Bennet Forbes, the pioneering Boston shipowner, is more entitled to credit as an owner in exploiting screw propulsion in America than Thomas Clyde, of Philadelphia; for Forbes, in addition to being an owner, was a practical marine expert in both the construction and operation of vessels, and, moreover, his use of the screw, while contemporary with that of Clyde, was far more extensive and venturesome. Forbes built the iron towboat *R. B. Forbes* (329 tons), which was the first American steam-driven craft fitted with twin screws, and in 1844 he constructed the *Midas* for China trade and fitted her with two propellers and machinery designed by Ericsson. This vessel was the first American steamer to round the Cape of Good Hope. In 1845, Forbes built another screw propeller steamer, the *Edith,* for the oriental trade and then built a 780-ton transatlantic sailing packet, with auxiliary steam, and fitted her with a screw propeller for service between Boston and Liverpool. Forbes also bid for the U. S.-subsidized mail service between the United States and Europe, and if his proposal had been accepted, he would have built a fleet of wood screw steamers for the transatlantic ferry in 1846, with machinery designed by Ericsson; moreover, he would have urged the government to encourage the establishment of an iron shipbuilding and steam engine and boiler-making plant to build vessels of two or three thousand tons, so that the United States could have had steamships of this type plying the North Atlantic soon after mid-century.

Robert B. Forbes also built the iron screw steamer *Argentina* (118 tons) in 1857, which was used to survey the River Plate in South America. About this time, he had the same constructor, Otis Tufts, of East Boston, build for him the iron brig *Nankin* (300 tons) for the China trade, which survived a bad stranding in Yokohama during a severe typhoon in 1859. Boston urged the building of screw steamers as much as did Philadelphia and wanted to build sizable iron vessels as early as the mid-forties, but costs were high and the Delaware was favored by being nearer the domestic iron mills and rolling mills. It would seem, however, that the first substantial iron seagoing vessel to be built in the United States was the twin-screw coastwise steam packet liner *Bangor* of 450 tons, which ran between Boston, Mass., and Bangor, Maine; this vessel was built by Harlan & Hollingsworth at Wilmington, Del., but was ordered, owned, and operated by New Englanders.

James P. Allaire—Originator of the Multiple-Cylinder Compound Engine

The United States contributed much to the science of marine engineering and the practical development of steam navigation. Not only did America lead Britain and all other countries by years in the successful commercial operation of steam vessels, in the practical utilization of the screw propeller drive, in the origination and use of tubular steam boilers, in the invention of water-tube boilers (and later their successful use for deep-sea work) but also an American engine builder, James P. Allaire, was responsible for both the design and successful application in commercial use of the compound multiple-cylinder steam engine. The British triumph in marine steam engineering was built upon the Fitch, Rumsey, and Stevens tubular boiler, the Bushnell and Stevens screw propulsion, and the James P. Allaire multiple-cylinder compound engine.

It was in 1824 that Allaire brought out his compound engine. In the Watt simple engine, steam was allowed to flow from the boiler to one end of the cylinder until the piston was driven almost the entire length of its stroke, when it was shut off and the exhaust to the condenser opened. Such engines were very wasteful of steam and, therefore, great consumers of fuel. Both British and Americans contributed much to the practical, economic use of steam engines by cutting off the live steam entering the cylinder much earlier in the stroke and letting expanding steam do much of the work; by this method, the power of an engine of stated diameter and stroke was reduced but little, whereas the steam and fuel consumption was lessened to an enormous degree. Allaire carried this principle of the work and economy of steam by expansion a very pronounced step further by building an engine with two cylinders, each of which did about half the work; the smaller-diameter cylinder was fed with boiler pressure steam, and the exhaust from this smaller, or high-pressure, cylinder was used to operate the piston of the larger-diameter, low-pressure cylinder. By this system of compound cylinders (i.e., a compound-expansion engine), Allaire could obtain a greater number of expansions of the steam than was possible in a single-cylinder engine.

Allaire built the propelling engines for the *Henry Eckford*, the *Sun*, and a number of other vessels on this compound-engine principle, and they proved to be "amazingly cheap in fuel bills." The *Henry Eckford's* engine had cylinders of 12 and 24 in. diameter, respectively, and we are told that it operated "reliably and with great satisfaction." The compound engine was more expensive to build than the single-cylinder engine, but the higher initial cost, it was believed, would be more than balanced by a reduction of fuel bills throughout the life of the engine. Apparently, first cost was an important factor in the choice of a marine engine in early days, and the Allaire compound engine was not generally adopted in the twenties and thirties because of initial expense. As it became possible to produce higher steam pressures, the compound engine, which permitted the practical and economic use of such increased working pressures, came into its own as did the tubular boiler with a cylindrical shell.

The early steamers, with simple engines using low-pressure steam, were great fuel consumers and were expensive to run. This high wood or coal consumption made such vessels impossible for long voyages, for the fuel demands "ate up the cargo space," and in the late forties it was freely said that steamers without cargo could win in their fight with sail only by the help of government subsidies. Following the general use of coal as fuel, the invention of the compound engine and the economic use of higher steam pressures, with the adoption of metal hulls and screw propulsion, finally gave the steamer a complete economic victory over the sailing vessel.

Thirty years after James P. Allaire invented and practically proved the advantages of his compound engine, the steam pressure for marine engineering installations had quadrupled, and in 1854 progressive Britishers decided that notwithstanding the higher initial cost, it would pay to build and use an Allaire compound engine. Therefore, such an engine was constructed and placed in the S.S. *Brandon*, and much capital was made of the fact that the *Brandon* consumed only 3¾ pounds of coal per horsepower per hour compared with a coal consumption of 4½ to 5 pounds for similar vessels fitted with simple engines; yet, because of cost and the British dislike of making a change, compound, or multiple-cylinder, expansion engines were not generally adopted by the British until after 1870. It is of interest to note, however, that it was the compound engine, the tubular steam boiler, and the screw propeller —all American inventions—that made steam navigation (another American invention) economically possible on the ocean trade routes of the world and so reliable and satisfactory that steamships finally succeeded in driving all windjammers from the seas and in ending the era of merchant sail.

When Charles H. Cramp visited Britain in 1871 just prior to building four 3,000-ton iron screw steamers for the new American line recently organized by the Pennsylvania Railroad, the chief engineer of the Cramp company (J. Shields Wilson), who accompanied him, had already designed compound engines for the screw steamer *George W. Clyde* and, we are told, "had acquired a strong bias" in favor of this relatively economic type of marine engine. When Cramp and Wilson toured English shipyards and engine-building works, they were amazed to find the prejudice existing in England against the compound engine, which the Britisher John Elder had reintroduced and proven to be superior to any simple engines then in use. It was not until the Americans visited Scotland and inspected the Fairfield Works at Glasgow that they saw compound engines being seriously adopted and built in quantity. Cramp says that the so-called Elder type of modernized compound engine was under construction in the shops of his company at Philadelphia for use in the new 3,000-ton iron screw American liners "before any of the various shipyards in Great Britain other than John Elder's took hold of them."

Sir William Fairbairn—the Father of Iron Shipbuilding

The first so-called iron vessels were canal and river boats, built with wood frames and with "boiler iron" taking the place of the outside planking to save weight and reduce the draft of the boat when carrying her load. Therefore, early vessels in the construction of which iron was used were really composite vessels "in reverse," for later it became popular in England to build the high-class sailing vessels, such as England's finest and fastest China tea clippers, with iron framing and wood planking. The first all-iron boats built in England were entirely of metal because such boats could be erected, "knocked down," and shipped in sections abroad, where they could be readily reassembled and put into service. The first "iron steamboat" built in England was a small craft, "manufactured at Horsley in 1821," which was "put together in London and then taken apart and sent to France." This proved a successful venture for the English builders and was the forerunner of a lot of "knockdown" boat business for export, and through the years such craft have been sent for use on the lakes and rivers of Africa, South America, and Asia as well as of Europe.

The father of real iron shipbuilding, however, was Sir William Fairbairn (1789-1874), who designed iron hulls complete, using angle bars (or shapes) for framing, deck beams, etc., as well as plates for outer shell and deck, and who applied scientific principles, calculated stresses, and through technical knowledge put the industry on a sound foundation. Fairbairn built a 60-ton iron lighter in 1829 and a paddle-wheel iron steamer of 55 tons for African service in 1832. By 1830 he had progressed so far in his practical experiments with iron "for use in the making of a strong, light-weight, and buoyant vessel" that he "urged the use of metal boats" in connection with his technical work with the Forth & Clyde Canal Company. Fairbairn, in addition to operating works in Lancashire and building Britain's first iron shipyard in London, was responsible for Laird's (of Birkenhead on the Mersey River) going into the business.

In 1838 sailing vessels of from 200 to 300 tons register were built of iron in England, and it can be said that after 1840 the building of iron vessels of all classes for all trades was becoming a permanent and profitable industry in Britain. This type of construction had first come into favor because of its lighter weight and its promotors' claims of "greater strength and longer life." Timber was scarce and expensive in England, and all the material used in the construction of sizable ships had to be imported. Iron (also coal), on the other hand, was plentiful and cheap, and in the early forties it was proven that it was cheaper to build iron vessels than wood ones in Britain; as the science and art of the industry developed, it became possible to build iron (or steel) vessels in the British Isles more cheaply than wood vessels could be built in the United States or in any part of the world.

Isambard K. Brunel (1806-1859) was a disciple of Sir William Fairbairn and learned the technical as well as the practical principles of iron ship construction from him. As chief engineer of the Great Western Railroad, Brunel designed and built its historic transatlantic pioneer steam packet *Great Western,* a wood side-wheeler, which first crossed the ocean in 1838, after which he turned his attention (following Fairbairn's counsel) entirely to iron and to the development of screw propulsion. Brunel designed in 1841 the iron screw packet steamer *Great Britain* for the Great Western Company's Atlantic service. This vessel of 3,270 tons was the first large iron steamship ever built, the largest vessel afloat when she was launched in 1843 and put in service in 1845, and the first large ship to use screw propulsion. The *Great Britain* was a sizable vessel (322 ft. long, 48 ft. beam, and 31½ ft. deep), and the engine that operated her screw had a cylinder 80 in. diameter and a stroke of 6 ft. She was unfortunate in being wrecked on the Irish coast through faulty navigation in 1846, but this disaster, whereas it discouraged the Great Western Railway Company in transatlantic steamship travel, gave iron construction of ships a great boost and proved that Fairbairn's theories of design were sound. The *Great Britain* was ashore for nearly a year before she could be refloated, and authorities were of the opinion that if she had been built of wood, she would have become a total loss. After being refloated and repaired, the *Great Britain* was placed in the British Australian service, where she performed with satisfaction for years.

Brunel was a courageous engineer, and in 1853 he did not hesitate to accept the commission to design and superintend the building of a mammoth steamship for the Eastern Steam Navigation Company. It wanted a large, fast packet steamship to run between England and Australia that could carry coal to make the round voyage and thus save great delays in ports en route and the necessity of sending coal to these intermediate ports by sailing ship. The steam packet *Australian* in this service, on her first voyage, made the outward and homeward passages, combined, in 165 days at sea; but 56 days were spent in port, primarily for coaling, and her round voyage of 221 days was not as good time as that made by clipper sailing packets. The steamship designed by Brunel, named the *Great Eastern,* was of such tremendous size that she could have been built only of iron. As she was too large to attain the speed desired by the use of screws alone, considering the development of marine steam engineering in the early fifties, Brunel decided to use both a screw propeller and side wheels. The keel for the big vessel was laid in the yard of Scott Russell & Company at Millwall-on-the-Thames on May 1, 1854. Construction was seriously delayed because of her size and weight, for about eight thousand tons of iron was used in the hull and some thirty thousand plates about 10 ft. long and 33 in. wide (generally ¾ in. thick; keel 1 in. thick). The vessel was far ahead of her times and too ambitious an effort, considering the facilities and experience of the builders; an unsuccessful attempt to launch her and her great cost ruined both owners and constructors. The big vessel was not put afloat until January 31, 1858, and when she began her first voyage on September 7, 1859, it was not to Australia. Brunel died from overwork and worry on September 15, 1859, eight days after the *Great Eastern* had commenced a sea run under her own steam. Whereas the big vessel (reported when building as of 22,500 tons; 680 ft. long, 83 ft. beam, and 58 ft. total depth) was an economic failure and a great disappointment in both speed and fuel consumption and generally in the efficiency of her power plant, yet she did prove the merit of iron in ship construction and that, as affirmed by Fairbairn, iron ships of ample strength could be built of any size that the demands of operators warranted and the facilities of builders would permit. Brunel's *Great Eastern,* following his *Great Britain,* definitely placed big iron ship construction on a firm basis, proved the correctness of Fairbairn's theories, calculations, and formulae, and removed all limits as to size of hulls that would of necessity have continued as long as wood had to be used as the building material.

Iron Steam—Its Development and Importance in the American Merchant Marine

The first iron vessel built in America was a crude sectional affair generally similar to the early British iron boats. She was the small light-draft steamboat *Codorus,* built in 1825 in Pennsylvania for service on the Susquehanna River and shipped to the South in 1830. It is known that five iron steamboats were in operation on the Savannah River in 1835, and they were, evidently, built in New York, which was the leading center in the country for this type of construction during the thirties. The first iron vessel known to have been built in Philadelphia or vicinity was a small barge built in sections by Jesse Starr some four blocks from the river, the sections being hauled to the bank of the river by horses and assembled there for launching. It is said that in 1836 "an iron steam vessel of 600 tons" was launched in New York "originally with a view of trading to Europe"; she evidently ran in the New Orleans service for a while. In 1838 a pioneer iron steamboat was built "in the West" at Pittsburgh, in 1841 an iron-hulled revenue cutter was built at Boston, and in 1842 a line of small iron steamboats was produced at Philadelphia to trade to Hartford, Conn.

Iron hulls were first considered with some favor in England because of their lightness in weight and thinness of shell, which made them well adapted for shallow-draft canal use. As before mentioned, it was soon found that iron hulls could be built in sections and transported "knocked down," which fact favored the iron construction plants (usually boiler works) and developed an export business—particularly in small iron steam-driven craft—in which the builder would make the machinery as well as the hull. In the United States, iron hulls were favored for river work, from the time of their introduction (1825-1835), for the same reasons that they were in Britain, but an additional merit of iron boats in use on rivers in America (and in several foreign countries with which export business developed) was the strength and better ability of such boats to withstand damage from snags and sunken logs, which abounded in certain river beds and were a serious menace to navigation during the dry months. It is said that it was on the Savannah River, Georgia, that iron hulls proved their overwhelming superiority to wood-built boats and that at least five shallow-draft river boats were in operation in 1835. According to records, when one of these boats was hauled out for examination after nine years' service, it was found that "her bottom was not perceptibly worn" and that there was "no trace of her repeated groundings and encounters with snags, except as indentations here and there in the hull."

Iron prices were relatively low in the United States in 1842 (pig iron being down to $27.50 per ton as against $52.50 in 1836 and $35.00 at the end of the thirties), and iron shipbuilding received some temporary encouragement. Practically all of the iron craft built were steam vessels, and as New York led the country in the building of marine engines, that locality for a while turned out the most important as well as probably the greatest volume of tonnage—a leadership which it was compelled to relinquish to the Delaware as the iron industry in Pennsylvania developed. In 1843, New York built four iron revenue cutters and a number of small iron merchant steamers. The following year (1844) saw two important iron shipbuilding companies commence operations on the Delaware—the Harlan & Hollingsworth Company, at Wilmington, Del., and the Neafie & Levy Company, at Philadelphia, Pa.

The first iron vessel of the U. S. Navy—and with one minor exception the first iron warship in the world—was the side-wheel barkentine *Michigan,* authorized to be built by Congress in 1841 and launched at Erie, Pa., in 1843. The contract was placed with Stackhouse & Tomlinson, of Pittsburgh, in May 1842, and the price to be paid was "13¾ cents per pound launched." Pittsburgh, Pa., at the time, was a promising iron center, for she boasted of 9 rolling mills and 18 iron foundries in 1836, and in 1839 the iron steamer *Valley Forge* (160 ft. long) was built there and operated successfully upon the Ohio River for many years. Statistics show, however, that in 1840 there were 804 blast furnaces and 795 "bloomeries, forges and rolling mills" in the country and that the year's production was 220,901 short tons, an average of 5.3 tons per week per furnace. Secretary of the Navy A. P. Upshur, writing on June 3, 1842, regarding his decision in placing the contract for this pioneer U. S. naval vessel, says:

> I determined to build this vessel of iron instead of wood, for two reasons. In the first place, I was desirous to aid, as far as I could, in developing and applying to a new use the immense resources of our country in that most valuable metal; and, in the second place, it appeared to me to be an object of great interest to ascertain the practicability and utility of building vessels, at least for harbor defense, of so cheap and indestructible a material. Experiments which had been already made, here and in Europe, although highly encouraging, were not perfectly satisfactory, nor had they been so numerous as to afford any certain rules or principles for conducting such work. With us the undertaking was altogether new, and we had no safe lights to guide us, furnished by the experience of others. It was perceived that a great deal depended on the experiment we were about to make. If successful, it would bring into much more extended use a metal abounding in all parts of our country, and forming the most important part of its mineral wealth; if unsuccessful, its failure would probably discourage, for many years to come, all other enterprises of like sort, and repress both the hopes and the energies of a large number of our people engaged and interested in that branch of industry. Hence an importance was attached to the undertaking, far beyond the mere value of the vessel itself. The first and principal object was to build it in the best possible manner, so as to afford a fair test of the applicability of iron to that use.

The old U.S.S. *Michigan,* built of wrought, or charcoal, iron (technically nameless, as her original name was used in 1905 for a battleship and her second name, *Wolverine,* was taken from her in 1943), now in 1944, when 101 years old, lies abandoned in the harbor of Erie. It is said that the original iron hull still lives and shows no sign of deterioration, although steel members inserted in the structure in 1897 and 1914 are "completely rusted away." The vessel operated in the U. S. Navy on the Great Lakes for seventy-nine years, but in August 1923 had an accident to her machinery. Whereas the ship limped back to Erie, a distance of six hundred miles, the Navy Department refused to make repairs and either to keep the old warship in commission or patch her up so that she could be preserved fittingly—considering her excellent physical condition and historic interest.

It is significant that notwithstanding U. S. Secretary of the Navy Upshur's courage and foresight in building the iron warship *Michigan* in the early forties, the officers of the navy, following blindly in the lead of the British Admiralty, expressed their disapproval of iron as a shipbuilding material and brought pressure to bear on Congress to authorize that all United States warships to be built should have wood hulls. A committee appointed by the U. S. Congress in 1846 to investigate this matter was entirely incompetent, and it turned in a report that was adverse to iron as a building material for warships, its conclusions being based entirely upon the prejudices of American naval officers. As an illustration of the prevailing gross ignorance and prejudice regarding iron ships in effect in the United States Navy around the mid-nineteenth century, which merely reflected the expressed attitude of the British Admiralty, the second iron warship that had been built for the American navy, the U.S.S. *Alleghany,* was condemned and sold by the government after the committee of the U. S. Congress had filed its report that was unfavorable to iron as a building material for warships. The official reason for this senseless act is set forth as follows: "The bureau is of the opinion that the material of which she [U.S.S. *Alleghany*] is constructed prevents her being suited for war purposes. Recent experiments in Europe have demonstrated their [iron hulls'] inability to resist shot or shells, and the increased danger to the crew from fragments of iron is far beyond that of splinters of wood." Unfortunately, there was no organized trade association of ironmasters in the United States to combat the ignorance and fight the prejudice of the Navy Department as private capital invested in the iron industry and in ships and trade fought the admiralty in Britain. The American shipbuilding, shipping, and commercial interests around the mid-century were almost entirely identified with wood as a shipbuilding material and generally with wood sail, in which they were extremely successful and prosperous and led the world by a wide margin. Evidently, this was no time for a new industry to wage war against the U. S. Government and British Admiralty prejudices and against the U. S. wood merchant marine, the greatest and most prosperous of American industries.

It is significant that at the time the American naval officers were blindly following the expressed and prejudiced opinions of the British Admiralty in regard to iron as a shipbuilding material, the British Government was encouraging private industry to build iron merchant vessels; the Royal Navy secured its first iron warship, H.M.S. *Birkenhead,* in 1845 and was supporting iron plants, rolling mills, and shipyards by means of contracts for government vessels of various kinds. This government policy of supporting an iron-making and construction industry for the benefit of its merchant marine—even during the early years, when the admiralty leaders felt that iron was inferior to oak for the hull of a warship—encouraged the ironmasters and iron shipbuilders of Britain to build sizable plants, and government encouragement, with orders for vessels of some type or other, created a large and effective backlog of business, which is something that American builders needed but greatly lacked.

The British Admiralty was many long years behind the British ironmasters, the owners, and Parliament in the development and support of iron shipbuilding. When the admiralty frowned on iron ships and would not grant subsidies to any steam vessels unless they were built of wood (and driven by side paddle wheels), the Peninsular and Oriental Company experimented with an iron vessel in 1843 and as a result predicted that "eventually almost all steam vessels will be built of iron." The report of the British "Select Committee on Merchant Shipping" (1844) says that iron steamships could then be built in England at a cost of some 10 to 15 per cent less than wooden vessels of corresponding size and power and, moreover, that these iron vessels "were more durable" than wooden ones. The Great Western Line built its big iron screw steamship *Great Britain* of 3,270 tons in 1843, but, unfortunately, this vessel was wrecked through no fault of her own; yet, because she was built of iron, the *Great Britain* was refloated later, without lasting injury to the structure, and her strength and long sea life of well over half a century proved in the ultimate to be a great boost for the building of iron vessels. The British Admiralty opposed iron construction not only for warships but also for subsidized mail-carrying merchant vessels until well past mid-century, and the Lords of the Admiralty expressed their vigorous views and prejudice on the subject to the steamship owners engaged in packet service in 1851. Nevertheless, the transatlantic Inman Line brought out its first vessel in 1851, which was the unsubsidized iron screw steamship *City of Glasgow* of 1,609 tons. This was soon followed by the larger iron screw S.S. *City of Manchester,* and it is said that "the relatively low cost of these vessels coupled with the company's emphasis on the emigrant trade permitted them to compete successfully with the subsidized Cunard liners."

The practical building and operation of iron merchant steamships and the development of explosive shells to replace solid shot, in conjunction with national politico-economic opinions that had become increasingly articulate, caused the British Admiralty in the mid-fifties to abandon its position against iron construction for mail liners (as well as for warships). The Cunard transatlantic steam packet liner *Persia* of 3,300 tons, built in 1855, was the pioneer iron vessel of the British subsidized fleet, although paddle-wheel propulsion continued to be insisted upon by the admiralty for some years, the last side-wheel Cunarder being the *Scotia* of 3,871 tons, built in 1862. The mammoth *Great Eastern* of 18,914 tons and 675 ft. long (fitted with both screw and paddle-wheel propellers) was designed in 1852-1853 by Brunel and launched in 1858, and it was in the latter year that the British Admiralty came all-out for iron mail steamship liners and required that the subsidized Royal Mail Steamship Company build iron steamers of 3,000 tons each for the British-South American trade.

A few iron monitors were built in the United States, under pressure, during the American Civil War of 1861-1865, but these were not seagoing craft, and early American iron ships were built not by experienced shipbuilders but by boiler makers, iron founders, general engineering shops, etc. The backwardness of the United States in the production of iron war vessels can be gleaned from the fact that at the time the United States Navy was seeking for competent and responsible American firms to build small monitors for coast defense use, the British, in 1861, completed their first large ocean-going armored warship, or ironclad, the H.M.S. *Warrior* of 6,109 gross tons, which, it is said, carried 1,200 tons of armor plate for her protection.

The iron-hulled revenue cutter referred to as being built in Boston in 1841 was the *Saranac,* built by Jabez Coney, an iron manufacturer, with much difficulty because of inadequate mechanical equipment; this was the first iron vessel built in New England. The first iron seagoing vessel built in the United States was the three-masted twin-screw iron packet steamer *Bangor* of 450 tons, which ran out of Boston in 1844 in the Boston-Bangor service. However, this Down East coastal liner was built by Harlan & Hollingsworth at Wilmington, Del., and was the first (or at least one of the first) iron steamships to be built in this yard, which was destined to have a great history. In 1845, Otis Tufts, of Boston, built the twin-screw seagoing iron towboat *R. B. Forbes,* named after her owner; this pioneer craft was a successful vessel and was designed by young Samuel Harte Pook, of Boston, who in the early fifties became distinguished as "America's outstanding naval architect in the production of the world's finest [wood] clipper ships." Otis Tufts built occasional iron vessels at Boston for years, both sail and steam; for in the last half of the fifties he constructed both a screw steamer and a sizable iron brig for Robert B. Forbes. It was said, however, that the cost of his iron hulls was high and "could not anywhere near approach the price of the best oak high-class wood construction," so there was but little commercial interest in the Boston-built iron vessels, as the product was noncompetitive.

In 1853 the Atlantic Works was established in East Boston with facilities for building steam vessels—both iron and wood—and their machinery. It is surprising that this plant in its early years seemed to specialize in foreign orders. It built the engines for the Russian corvette *Mandjoor* and steamers for Egypt, Paraguay, China, Russia, the Sandwich Islands, and the East Indies. An interesting vessel designed and built by the Atlantic Works was the steamer *Le Voyageur de la Mer,* constructed in the fifties for the pacha of Egypt, who had been influenced to give the order to George A. Stone, a representative of a Boston commercial house and a resident of Syria for many years. The vessel was of 1,300 tons, 216 ft. long, 37 ft. beam, and 22 ft. deep; she had oscillating engines of 800 horsepower, 54 in. diameter and 36 in. stroke, four boilers, and a screw 15½ ft. diameter. *Le Voyageur de la Mer* is said by historians to have been the "first large iron vessel built in the United States," and we are told that "the plates and frames were rolled in Norristown and Philadelphia, the hull requiring 3,000 plates and 300,000 rivets, a total weight of 881,000 pounds of iron." Yet a description of the vessel reveals the fact that the steamer had an "inner wooden frame of great solidity ceiled with pitch pine." It would seem, therefore, that this pioneer large deep-sea American-built iron vessel was—as were the earliest "iron" boats—of composite construction with a wood framing, ceiling, and decking but with "five watertight iron bulkheads," iron outside plating and, most probably, iron deck beams and stringers, some intermittent iron framing, and iron angle-bar reinforcing of all iron bulkheads. It is reported that the yard built in the fifties the composite steamer *Niphon* for American owners. During the Civil War, the Atlantic Works built the iron turret monitors *Nantucket* and *Casco,* the turrets for four other monitors, and the engines for five naval steamers.

Harrison Loring established an iron ship- and engine-building plant at South Boston in 1857, and his first vessel was a small iron steamer, the *Sestos,* built for East Indian owners (who were so well pleased with her that they ordered a sister boat). In 1860 he built. for trading between Boston and New Orleans, two 1,150-ton iron steamers, which were sold to the government at the commencement of the Civil War. Loring built the 2,000-ton iron propellers *Mississippi* and *Merrimac* in 1861 and, afterwards, the monitor *Nahant,* the ram *Canonicus,* and the 1,500-ton side-wheeler *Winnipee.* Following the war, as there was "no money in iron shipbuilding," the plant virtually abandoned the marine field and used its shops profitably in the building of machinery for sugar and paper factories.

When William Cramp and sons, of Philadelphia, built the iron coasting schooner *Josephine,* they were criticized for using such thin (3/8-in.) shell plating. They replied, "American iron is much stronger and superior to British iron; so much so that it is not necessary to scantling a vessel built of American iron as heavy as would be necessary if British iron was used in her construction." In this connection, a statement made by Harrison Loring, of Boston, after thirty years' experience in building and repairing iron ships (British as well as American), is of interest:

> American iron is the best for shipbuilding on account of its superior tensile strength. I have repaired English-built vessels whose plates were so weak as not to have over one-half the tenacity of common cast iron. Mr. Martell, the surveyor for Lloyds at Liverpool, admitted to me the necessity in England for something better than their rolled iron for plates, and this led to the adoption by them of steel for shipbuilding.

During 1858, while New York was building "many large and handsome wooden steamers for the coasting and California trades," there was evident a distinct movement of conspicuous proportions for the engineering and shipbuilding establishments of the city to embark in the building of iron vessels (screw as well as paddle-wheel), which would have developed along practical, productive lines if the budding industry had received a definite measure of encouragement and if national political conditions had been more propitious and stable. At Bell's yard on the East River, the side-wheel light-draft iron steamer *Suchil* was launched forty-three days after the keel was laid, and it is said that there were 250 tons of iron in her hull. The *Suchil* was 140 ft. length, 35 ft. beam, and 5½ ft. depth of hold; she was fitted with two 120-horsepower engines, had a speed of 11 miles per hour, and drew only 16 in. of water. This boat was built to the order of the Tehuantepec Company to run on the California route from New Orleans via the Coatzacoalcos River. At the same time (1858), the Novelty Iron Works, builder of the large side-wheel engines for all of the Pacific Mail steamers and similar large marine tonnage, built an iron steamboat 168 ft. long and 30 ft. beam, while the Morgan Iron Works (later acquired by John Roach, who built America's first large iron shipbuilding plant at Chester, Pa., in 1873) began work on a contract for four iron screw steamers for Siam. The cost of all these iron hulls, however, proved "expensive and non-competitive," and the lack of plant facilities, with the high cost of iron and of labor to work it, "defeated all attempts to introduce iron ship construction."

It is evident that, if a farsighted Congress had encouraged the development of iron production and shipbuilding in the thirties and forties, American iron shipbuilding in the forties and fifties would have been fully as much ahead of British iron shipbuilding, at mid-century, as were United States-built wood vessels of every type—steam as well as sail—ahead of British-built wood ships. Americans not only had the inventive genius and the mechanical talent and leanings but also the initiative and the courage to act boldly and take risks if they could have seen any light ahead and been impressed with an opportunity and a square deal. The American political leaders in the thirties and forties were shortsighted; around mid-century, for a short period, they seemed to sense the importance of maintaining the United States's supremacy on the ocean and of combating the subsidized, monopolistic aggression of England, but the attitude of the South and of a country divided in a politico-economic sense sounded the death knell to America's growth to leadership in iron and steam navigation during the latter half of the fifties.

As long as the packets used in the transatlantic "ferry" were sailing ships, American-built and American-operated vessels absolutely dominated this trade. When steam packets built of wood and fitted with side paddle wheels were in the service, the United States built the best, biggest, and fastest steamers of this type; but when Britain—which could never build wooden vessels that could compete with American-built craft—abandoned wood in construction and supplanted the cumbersome and unsuitable paddle wheels housed in troublesome projecting boxes with the submerged stern screw propeller, it technically won the transatlantic trade. The British Government fostered and developed this business while the United States Government ignored it and refused support to sea-minded Americans who were inclined to follow in the footsteps of Britain. The United States was the world's leading maritime power at the time of the clipper ship era and following the California Gold Rush, but in the middle and late fifties the depression of reaction to a boom of unwarranted proportions, followed by the Civil War, caused America to drop low as a sea power; instead of continuing to be ocean- and ship-minded (iron, sail, or steam), the country concentrated its interests and efforts in the development of the western part of the continent, with railroad activities, manufacturing, public utilities, mining, etc., supplanting the former interest in marine matters and deep-sea trade.

Henry Hall, in the U. S. Government "Report on the Shipbuilding Industry of the United States" dated November 30, 1882, says: "No official separate record was kept of the iron shipbuilding of the United States until about 1868." However, Eugene T. Chamberlain, U. S. commissioner of navigation, in his annual report dated October 19, 1901, gives a statement showing the number and gross tonnage of iron and steel vessels built in the United States and documented and beginning with the year 1838. Hall has written: "Data have been gathered showing that almost exactly six hundred iron vessels (not including warships) have been constructed in the United States down to the year 1883." According to Hall's and Chamberlain's figures, which check quite closely, the United States built as much tonnage of steam-propelled vessels in 1819 as it did of iron vessels in 1870; in Britain, steam navigation and iron ship construction developed much more closely together.

Four iron shipbuilding plants stood out over all others in the country during the years prior to 1882. These yards were as follows:

				Number of Vessels Built Prior to 1883			
Name of Company	Location	Commenced Building Iron Vessels	Largest Iron Steamer Built Prior to 1883	Over 5,000 Tons	Over 3,000 Tons	Over 2,000 Tons	Comment
Harlan & Hollingsworth Company	Wilmington, Del.	1843-1844	EXCELSIOR of 3,264 tons	—	3	13	Began business in 1836 and built the first iron coasting vessel in the United States in 1843-1844.
Neafie & Levy	Philadelphia, Pa.	1844	WILLIAM T. HART	—	—	1	Builders of small iron vessels, marine machinery, and propellers.
William Cramp & Sons Ship and Engine Building Company	Philadelphia, Pa.	During Civil War 1861-1865	OHIO, INDIANA, ILLINOIS, and PENNSYLVANIA of 3,101 tons	—	4	?	William Cramp established wood shipbuilding yard in 1830; took sons into partnership in 1857 and 1863.
John Roach & Son (of New York and Chester, Pa.)	Chester, Pa.	1873	CITY OF PEKING and CITY OF TOKIO of 5,080 tons	2	8	38*	The first American iron shipyard designed and equipped to build and engine 5,000-ton steamships.

* In addition, three other vessels building and two built in 1878 of 1,997 and 1,992 tons, respectively.

The Harlan & Hollingsworth Company was the pioneer of the large- and medium-sized shipbuilding plants in America. It built, in 1843-1844, the iron screw steamer *Bangor* of 450 tons for Maine owners, and this was the first iron deep-sea coasting steam vessel constructed in the United States. In the first ten years of operation (1844-1853 inclusive), the company built twenty-two iron hulls (an average of 2.2 per year) totaling 8,550 tons—an average of 855 tons per year and 389 tons per vessel. Although the company turned out one sizable hull (the steam railroad car ferry *Maryland* of 1,150 tons), it is apparent that the yard and its facilities were inadequate to build iron screw (or paddle) ocean-going steamers of from 2,000 to 3,000 tons at a time when ocean commerce was demanding that such vessels be built for the mail and passenger packet lines. If this company had been encouraged by the United States Government to expand its facilities, build a few sizable naval vessels, and be equipped to take contracts for subsidized iron screw steamships in the early fifties and if a patriotic and united Congress had acted to promote and protect a United States deep-sea iron steam merchant marine at that time (the height of the clipper ship era), the supremacy of the seas—as far as commerce was concerned—would never have passed to Britain. The Harlan & Hollingsworth Company was the nucleus around which iron shipbuilding in the United States should have been developed.

The following table shows the number, type, and tonnage of the iron vessels built by the Harlan & Hollingsworth Company up to and including 1882:

Period	Number of Steamers			Tonnage of Steamers				Other Iron Vessels		Total Iron Vessels		Largest Vessel	
	Screw	Paddle-wheel	Total	Screw	Paddle-wheel	Total	Aver.	No.	Tonnage	No.	Tonnage	Name	Tonnage
1844-1849	5	1	6	1,950	270	2,220	370	—	—	6	2,220	Three steam propellers	450
1850-1854	6	12	18	2,390	4,920	7,310	406	2	780	20	8,090	Steam ferry side-wheeler MARYLAND	1,150
1855-1859	6	21	27	1,710	15,705	17,415	645	10	790	37	18,205	Side-wheel steamship CHAMPION	2,000
1860-1864	16	12	28	10,060	11,600	21,660	774	2	460	30	22,120	Side-wheel steamship W. G. HEWES	2,250
1865-1869	2	15	17	1,050	13,145	14,195	835	11	2,510	28	16,705	Side-wheel steamship JOSEPHINE	1,500
1870-1874	13	10	23	16,332	9,827	26,159	1,137	2	520	25	26,679	Screw steamships GRANADA and ACAPULCO	3,000
1875-1879	7	19	26	12,662	11,067	23,729	913	6	251	32	23,980	Screw steamships DECATUR and H. MILLER	2,296
1880-1882	5	13	18	4,789	10,399	15,188	844	—	—	18	15,188	Screw steamship EXCELSIOR	3,264
1844-1882 Total 39 years	60*	103**	163	50,943	76,933	127,876	784†	33	5,311	196	133,187	Screw steamship EXCELSIOR	3,264

* The ARANSAS of 1,157 tons, built in 1877, was fitted with twin screws.

** Four of these paddle-wheel vessels, aggregating 900 tons and built during the period 1851-1860, were stern-wheelers.

† The average tonnage of the screw steamers was 849 tons and of the paddle-wheel steamers 747 tons. Five of the screw-propelled vessels built during period 1874-1882 were fitted with compound engines.

One of the greatest American shipowners who concentrated on iron steam navigation from the earliest days that medium-sized iron hulls could be built in the United States was

Charles Morgan. Morgan and Cornelius Vanderbilt were early patrons of the Harlan & Hollingsworth Company, and each of these men in 1858 gave to that struggling but promising iron ship- and engine-building plant contracts for its first iron steamships. The iron vessels that the shipyard had theretofore built were river and inland waters steamboats, and all were of small size except the steam transfer ferryboat *Maryland* of 1,150 tons, built for the Philadelphia, Wilmington & Baltimore Railroad Company. (When bridges were built on the Chesapeake and the Delaware, the *Maryland* was placed in service between Jersey City and Harlem.)

Vanderbilt, who had endeavored unsuccessfully to run a line of steamers across the Atlantic in competition with British-subsidized lines, turned his attention from wood to iron in 1858 and gave contracts for the following iron steam vessels to the Harlan & Hollingsworth Company:

Name of Vessel	Type	Drive	Year Built	Tonnage	Engine
MATAGORDA	Steamship	Side-wheel	1858	1,250	44 in. x 132 in.
CHAMPION	Steamship	Side-wheel	1858	2,000	Two; each 42 in. x 120 in.

Previous to 1858, Vanderbilt had the Harlan & Hollingsworth Company build for him two small 150-ton light-draft iron stern-wheel steamers, the *Clayton* and the *Bulwer,* for service on the Chagres River, Isthmus of Panama.

Iron Steam Vessels Built by Harlan & Hollingsworth Company, Wilmington, Delaware for Charles Morgan

Name of Vessel	Type	Year Built	Tonnage	Trade
ARIZONA	Side-wheel steamship	1858	1,100	Gulf of Mexico
AUSTIN	Side-wheel steamship	1859	1,150	Gulf of Mexico
W. G. HEWES	Side-wheel steamship	1860	2,250	Gulf of Mexico
HATTERAS	Side-wheel steamship	1861	1,450	Gulf of Mexico
ST. MARY'S	Side-wheel steamship	1862	1,400	Gulf of Mexico
CRESCENT	Side-wheel steamship	1862	1,400	Gulf of Mexico
CLINTON	Side-wheel steamship	1863	1,450	Gulf of Mexico
FRANCES I	Side-wheel steamer	1863	850	West Indies
LOUISE	Side-wheel steamer	1863	850	Chesapeake Bay
FRANCES II	Side-wheel steamer	1864	850	
MORGAN	Side-wheel steamship	1865	1,450	Gulf of Mexico
HARRIS	Side-wheel steamship	1865	1,450	Gulf of Mexico
HARLAN	Side-wheel steamship	1865	1,450	Gulf of Mexico
LADY OF THE LAKE	Side-wheel steamboat	1865	800	Washington, D. C.; Norfolk, Va.
MARY	Side-wheel steamboat	1865	850	Gulf of Mexico
CITY OF NORFOLK	Side-wheel steamer	1866	900	Gulf of Mexico
LAURA	Side-wheel steamboat	1866	850	Long Island Sound
JOSEPHINE	Side-wheel steamship	1867	1,500	Gulf of Mexico
HUTCHINSON	Side-wheel steamship	1870	1,435	Gulf of Mexico
WHITNEY	Side-wheel steamship	1871	1,338	Gulf of Mexico
GUSSIE	Side-wheel steamer	1872	998	Gulf of Mexico
LONE STAR	Screw-propeller steamship	1875	2,255	New York-New Orleans
NEW YORK	Screw-propeller steamship	1875	2,255	New York-New Orleans
ALGIERS	Screw-propeller steamship	1876	2,270	New York-New Orleans
MORGAN CITY	Screw-propeller steamship	1876	2,271	New York-New Orleans
ARANSAS	Twin-screw-propeller steamship	1877	1,157	Gulf of Mexico
MARY MORGAN	Side-wheel steamboat	1878	370	Gulf of Mexico
EXCELSIOR*	Screw-propeller steamship	1882	3,264	New York-New Orleans

* Built for Morgan's Louisiana and Texas Railroad and Steamship Company.

The side-wheel iron steamboat *General Rusk* of 750 tons was built in 1856 for Harris, Morgan & Company, of New Orleans, La. Henry Hall, in his report (1882) to the government on the shipbuilding industry of the United States, says, "Charles Morgan, of New York, was one of the first merchants to understand the advantages of iron hulls in the coasting trade, and up to 1882 the Harlan & Hollingsworth, Wilmington, Del., yard had built for his coasting lines no fewer than 31 iron steamers."

Of the above-listed twenty-eight Morgan iron steam vessels aggregating 39,613 tons, all those built prior to 1875 were side-wheelers, but when Morgan started a deep-sea line between New York and New Orleans, he built screw steamships for that trade. Charles Morgan built one of the world's pioneer twin-screw vessels, the light-draft iron steamer *Aransas* of 1,157 tons, which he placed in the Gulf trade service in 1877. Whereas many of Morgan's earlier iron steam vessels were built for other runs, he concentrated later on developing the Gulf of Mexico steamship and railroad trade. As early as 1875, however, Morgan inaugurated a steamship line between New York and Gulf ports, and the Morgan Line service became favorably known. The Southern Pacific Company ultimately acquired by purchase Morgan's steamship and railroad interests and, in addition to service between New Orleans and Havana, ran a great fleet of fast screw steel steamships from New York to New Orleans, La., and to Galveston, Tex., known as the "Morgan Line," until the United States Government took over the fleet and suspended this coastwise service in 1941.

During the Civil War, the Harlan & Hollingsworth Company built the following vessels for the United States Government:

Name of Vessel	Type	Year Built	Tonnage	Engine: Diameter of Cylinder	Engine: Stroke
PATAPSCO	Ironclad (screw) monitor	1862	1,200	Two 40 in.	22 in.
SAUGUS	Ironclad (screw) monitor	1863	1,500	48 in.	24 in.
NAPA	Ironclad (screw) monitor	1863	850	22 in.	30 in.

There were also sold to the government the 160-ton tugboat *Rescue,* constructed for builder's account, and the 400-ton side-wheel steamboat *Virginia Dare* (renamed *Delaware*), building for the Albemarle Steam Packet Company—both of which craft were on the stocks in 1861. The iron sloop of war *Ranger* was built for the government in 1874; this vessel was of 1,100 tons and was fitted with a screw propeller driven by a compound engine with cylinders 22 and 48½ in. diameter, respectively, and 42 in. stroke. A marine historian says that during the war the company "constructed the ironclad, double-turreted monitor *Amphitrite* for the government," but the name of this vessel does not appear in the list of hulls built at the plant during the years 1844-1882. Henry Hall says, "In the early years of the struggle to establish an American iron shipbuilding industry, the Harlan & Hollingsworth Company stood practically alone, for there were few, if any, concerns in the country sufficiently well equipped to execute contracts regularly for the large class of iron vessels." (This would be more nearly accurate if it read, "to execute contracts regularly for medium-sized iron vessels," for until the Roach yard was established in 1873, there was no shipyard on the American continent equipped to build a 4,000- or 5,000-ton steamship.)

The firm of Neafie & Levy, in Philadelphia, came into existence in 1838 and built its first vessels of iron in 1844. In that one year, it was reported to have built six iron hulls of from 35 to 160 ft. length, 8 to 23½ ft. beam, and 3½ to 6½ ft. depth. No further iron ship construction was recorded until 1852, when three hulls of from 60 to 115 ft. length, 10½ to 23 ft. beam, and 3 to 8 ft. depth were reported, after which there followed two years of inactivity. According to the books of the company, which was gradually gaining a reputation for building good iron vessels of small size, the following numbers of iron vessels were constructed from 1855 to 1882:

Years	Number of Vessels	Average Built per Year	Average Dimensions			Longest Vessel	Shortest Vessel
			Length	Beam	Depth		
			Feet	*Feet*	*Feet*		
1855-1859	12	2.4	118.0	20.8	7.2	PHILADELPHIA 200 ft.	DECATUR 65 ft.
1860-1864	16	3.2	138.0	23.5	10.0	HAVANA 230 ft.	DASHING WAVE 60 ft.
1865-1869	2	0.4	129.0	37.0	4.0	JULIA SAINT CLAIR 129 ft.	BANDY MOORE 129 ft.
1870-1874	14	2.8	90.3	18.2	7.8	DAHLIA 141½ ft.	SALLIE 60 ft.
1875-1879	8	1.6	118.7	22.3	10.0	CUBA 211 ft.	STARTLE 60 ft.
1880-1882	14	4.6	124.5	22.0	9.8	WILLIAM T. HART 294½ ft.	W. M. WOOD 85 ft.

Neafie & Levy, from the start, was a builder of small and shallow-draft iron vessels, its only moderate-sized vessel being the *William T. Hart,* built in 1881, which was 294½ ft. long, 42 ft. beam, and 13 ft. deep. This company's next largest vessels were the *Havana* (length 230 ft., beam 34 ft., depth 24 ft.), built in 1863; the *Cuba* (length 211 ft., beam 32½ ft., depth 21½ ft.), built in 1878; the *Oriental* (length 210 ft., beam 32 ft., depth 20.7 ft.), built in 1860; and the two shallow-draft government boats *General Scott* and *Union,* which were 225 ft. long, 32 ft. beam, and only 10 ft. deep. Up to the fall of 1882, Neafie & Levy had built 737 marine engines (generally small), but for years had featured the casting of screw propellers, the number produced annually being about three hundred fifty of diameters ranging from 2½ to 15 ft.

During the Civil War, William Cramp and his sons changed the old Cramp wood shipbuilding yard (where, it is said, "106 vessels of different kinds had been built since 1830") into a plant for building certain classes of iron vessels. Cramp, during the early days of the period of transition, built the ironclad *New Ironsides* for the United States Navy, but this vessel had—as did the Webb-built ironclads of New York—a wood hull with iron plating bolted thereto. Cramp later built the monitor *Yazoo,* the steamer *Chattanooga,* and some transports. By 1868, the Cramp plant was comparable with Harlan & Hollingsworth in equipment for building iron steamers and their machinery, and contracts were made for the construction of iron merchant vessels. Two screw steamers were built for the Clyde Line, and in 1872 a contract was signed for the building of four transatlantic screw steamers of 3,011 tons for the new American Line at a cost of $600,000 each. These vessels (the *Ohio, Indiana, Illinois,* and *Pennsylvania*) were 355 ft. long over-all, 43 ft. beam, and 35 ft. deep. From the Civil War period to the close of 1882, the Cramp yard turned out about fifty vessels in all (including the conversion of four merchant steamers into warships for the Imperial Russian Navy). The most important merchant vessel built at the plant following the completion of the American liners up to 1883 was the screw passenger and freight deep-sea coaster *Chalmette* of 2,983 tons, which was built in 1880 and became a favorite in the New York-New Orleans trade.

The most important American iron shipbuilding plant in the seventies and eighties was that of John Roach & Son, of New York. This shipbuilding works was—as were the three other plants before mentioned—built on the Delaware in the general vicinity of Philadelphia, and this because of the nearness of the locality to the iron and coal mines and because of the remarkable development of the iron-manufacturing industry in towns lying inland. Moreover, the banks of the Delaware, where these yards were built, are well adapted for the constructing of sizable ships.

In the first ten years of existence, the shipyard of John Roach & Son, Chester, Pa., built sixty-four iron steamers aggregating 131,743 tons—an average of 6.4 vessels and of 13,174 tons per year. Of these, fifty-six vessels (87½ per cent) were screw propelled, and eight (12½ per cent) were driven by side paddle wheels. The following table indicates the number, tonnage, and type of these iron vessels, which were all steamers, for each of the years covering the output of the yard and works from its founding in 1873 up to and including 1882:

	Number of Steamers			Tonnage of Steamers				Largest Vessel	
Year	Screw	Side-wheel	Total	Screw	Side-wheel	Total	Average	Name	Tonnage
1873	4	2	6	8,619	1,590	10,209	1,702	COLIMA	2,906
1874	8	—	8	17,846	—	17,846	2,231	CITY OF PEKING CITY OF TOKIO	5,080 5,080
1875	4	—	4	10,161	—	10,161	2,540	CITY OF SAN FRANCISCO CITY OF NEW YORK	3,019 3,019
1876	4	—	4	5,904	—	5,904	1,476	RIO GRANDE	2,566
1877	7	—	7	12,466	—	12,466	1,781	CITY OF WASHINGTON	2,618
1878	6	—	6	15,830	—	15,830	2,638	CITY OF RIO DE JANEIRO	3,548
1879	4	2	6	9,179	665	9,844	1,641	COLORADO	2,765
1880	6	—	6	12,662	—	12,662	2,110	CITY OF AUGUSTA	2,870
1881	4	3	7	9,365	2,707	12,072	1,725	GUADALUPE	2,839
1882	9	1	10	21,249	3,500	24,749	2,475	PILGRIM	3,500
Total 10 years 1873-1882	56	8	64	123,281	8,462	131,743	2,058	CITY OF PEKING CITY OF TOKIO	5,080 5,080

All of the side-wheel steamers were fitted with simple engines ranging in size from 28 by 36 in. (on the small 425-ton *Juan Mir*) to a 110-in. diameter cylinder and 168-in. stroke (on the Long Island Sound 3,500-ton steamboat *Pilgrim*, built in 1882). Of the fifty-six screw steamers, fifty-three were fitted with compound engines, and the first iron screw steam vessels were equipped with this "modern, economical" type of engine. Of the three screw vessels fitted with simple engines, only the *City of San Antonio* of 1,450 tons, built in 1873, was over 850 tons register, and one of the vessels was a Panama railroad tug of only 75 tons.

Henry Hall, the government investigator, referring in 1882 to the iron shipbuilding plants on the Delaware, wrote:

> They constitute a valuable resource of public importance to the United States; and it is safe to say that, if the four large yards on the Delaware did not exist, the government would be compelled to maintain several establishments of similar magnitude for naval purposes, with their consequent great expense for the repairs necessary to keep them in order.

Another builder of small iron vessels located at Wilmington, Del., was the Pusey & Jones Company, which prior to 1883 built about a hundred iron vessels. Approximately eighty per cent of these were for foreign—chiefly South American—owners, and most of the vessels were light-draft stern-wheel and side-wheel paddle boats. This company built a few medium-sized vessels, the most important being the screw steamer *Hudson*, built in 1874 for the New

York-New Orleans Cromwell Line (later taken over by the Southern Pacific Company). The *Hudson* registered 1,872 tons and was 280 ft. long on the water line, 34 ft. beam, and 26 ft. deep.

It is significant that Henry Hall, in his report to the government on the shipbuilding industry of the United States, written in 1882, should conclude his section on iron vessels by saying:

The building of iron and steel vessels has made sufficient progress in the United States to have created the plant and trained the labor for producing sailing and steam craft for the merchant service of every description and of any size. . . . The total quantity of iron yearly consumed by the industry is not large, and should Congress provide the way for placing the American builder on a par with the European builder so far as the cost of iron and steel is concerned, it seems probable that the tendency toward the more modern class of tonnage would be greatly accelerated. This industry is a valuable one nationally in many important particulars. It robs the country of none of its resources. The exportation of grain, cotton, and tobacco is the shipping away of so many thousand tons of the best constituents of American soil, and the construction of wooden tonnage destroys the forests. There are other industries which effect changes for the benefit of this generation for which future generations will have to pay. Iron-shipbuilding appears to inflict no injury as far as consumption of materials is concerned, and it is a department of activity which employs a greater proportion of human labor to the value of material used than almost any other which can be named.

The Fallacy of the Principle of Narrow Beam in the Construction of Iron or Steel Ships

Light-draft hulls call for beamy vessels, and the earliest iron steamers built to navigate in shallow waters were naturally constructed with proportions similar to those of the wooden vessels they competed with or displaced. Historians have said that, from the first, iron hulls were made narrower and longer than wooden hulls, as "iron was not so well adapted to the building of vessels with a good beam." This is not only false but also the exact opposite of the truth. In the days when wood construction fought with iron construction for survival, the size of a wooden ship was limited by its beam, whereas in iron or steel shipbuilding, there neither is nor ever has been any maximum beam beyond which it would be unsafe, unwise, and impractical to attempt to go. Wooden ships, both sail (square-riggers and schooners) and steam, mercantile and naval, increased in size with the years, but when a beam of about fifty feet was reached, the maximum-sized wood hull was built, and any further addition to size had to be made in length and depth. Metal vessels were being built of seventy-three feet beam at the turn of the century, and during the 1930's three transatlantic merchant steamships were given a beam of about one hundred eighteen feet.

Even Henry Hall, writing in 1882, expressed the old fallacy that iron hulls had to be narrower than wooden ones. He said:

With reference to model, it should be stated that the change from wood to iron produces the effect of narrowing the beam of ships. The one weak place of the iron hull is the flat of the floor, which on account of the thinness of the material tends to buckle and collapse. . . . It has been considered safer by all builders of iron vessels, especially of sailing craft, to make the floor sharper, so as to give it a little more vertical stiffness, and then to narrow the beam a few feet. In order to gain the same register tonnage, the hull is made longer. This narrowing of the beam makes the vessel swifter both in the case of sailers and of propellers, which is an advantage, and its only drawback is that in sailing vessels it makes the ship crank. The center of gravity of an iron hull is always higher than in a wooden one, and the model aggravates the evil. The beam of an iron sailing ship is from 2 to 5 feet narrower than in a wooden one. The following comparison between average craft of the same tonnage will show the difference:

	Iron Sailing Ships (English)			Wooden Sailing Ships (American)		
Tonnage	Length on Deck	Broadest Beam	Depth of Hold	Length on Deck	Broadest Beam	Depth of Hold
	Feet	*Feet*	*Feet*	*Feet*	*Feet*	*Feet*
1,000	200	34	21	177	36	23
1,200	229	35½	21	186	37	23
1,300	230	36½	23	194	38	24
1,400	245	37	22	200	39	24
1,500	248	37⅔	23	215	40	24
1,600	253	38	23	220	40½	24
2,000	270	38	32	235	43	27

This statement (and quotation) was unfortunate, for twelve years after it was written, it was advanced as "an authoritative statement of fact" to justify an error of an American shipbuilder when, in abandoning wood construction and turning to steel, he reduced the beam of his vessels and, for economic reasons (cost of construction), even increased his initial fault as the years advanced from 1894 to 1902. Unfortunately, Henry Hall—an excellent investigator, historian, and writer—was not a practical shipbuilder or technical naval architect. The reason he gives for the alleged relative weakness of iron vessels was the very one that was responsible for such boats being used on America's southern rivers—the far greater strength of iron over wood construction. Hall falls into the error of being unable to differentiate between iron and wood ship construction, on the one hand, and between British and American construction on the other. He rightly heads his tables, however, as "Iron (English) and Wooden (American) Sailing Ships," but the comparison of the dimensions of the ships as given has nothing to do with the materials used in construction; the proportions—length, beam, and depth—of the vessels built in Britain and in the United States merely represent the ideas of the builders as to the model of a hull to be built to conform with a demand for a sailing vessel either of a given tonnage or to carry a certain stipulated amount of cargo.

In Britain, iron shipbuilding early developed into a highly competitive industry, and builders vied with each other to construct cheaply and obtain orders for ships on low bids. Early British tonnage laws penalized beam, and this fact alone, which affected the shipowners more than the shipbuilders, did much to get all British marine interests accustomed to and in the habit of building and operating narrow vessels. Beam is by far the most expensive dimension of a ship, so vessels came to be built, in the iron shipyards of the British Isles, with a beam so narrow that the danger line was skirted, and a large percentage of the British ships were not only crank but also unsafe. Most British ships would not stand up straight without ballast, and not only did they lack initial stability but also they could not be sailed with the holds full of certain light-weight bulk cargoes without heavy ballast being placed between the floors or in the lower holds. Britain's finest iron and composite-built tea clippers would not stand up straight when light, and they could not be sailed with cargoes of tea without a substantial quantity of nonrevenue-producing weight being carried down low to give a sufficient metacentric height so that enough sail could be carried to make speed. This fundamental error of British shipbuilders, originating in the cost factor, was maintained throughout the nineteenth and well into the twentieth century, affecting all types of marine construction (sail and steam), and has been responsible for so many ships being reported "missing." Until experimental basins became generally used in the testing of models of vessels to determine their resistance due to form, the British stubbornly persisted in their freely expressed conviction that narrowness of beam was the prime essential for speed (as they well and truly knew it to be for low cost); therefore, British shipbuilders "sold" the idea of narrow hulls to shipowners and got them to stagger under the handicap and expense of operating cranky, narrow vessels, the shipowners feeling that such nuisances and drains upon them were unavoidable unless they were willing to sacrifice the quality of speed.

In the United States, conditions have always been different. American wooden ships have never been built along factory, or mass-production, lines. It could never be said of American wooden ships, as it was of British iron steam tramps (and of some of the latest iron and steel sail), that they "were built by the mile and cut off" to the lengths required by specific offers, nor were the proportions of American ships ever influenced by tax laws. Up to the end of the days of wood sail, American-built wooden ships were individual affairs constructed with pride, the aim being to produce the best ships possible for the specified trades. Dimensions were decided upon without regard to the fundamental fact that beam was expensive, for it was well known that beam increased the stability of a ship—light or loaded—and sail-carrying ability, made a powerful and good cargo-carrying vessel, and did not of itself decrease speed. Too many 40-ft. beam American wooden square-riggers had shown their heels to 36-ft. beam British iron ships to cause any experienced American shipmaster, owner, or builder to take seriously the British claim that a narrower ship meant a faster ship. However, when Arthur Sewall & Company, of Bath, Maine, in 1893 decided to discontinue wood shipbuilding and establish an iron shipbuilding yard to build iron (or rather steel) sailing ships for its own account, the marine fraternity was surprised to find that, in changing from wood to metal, the Sewalls had scrapped all the fruits of experience of a century in the building of good wood ships and had adopted the British proportions with the relatively narrow beam. It was said, "Evidently, Henry Hall was right, and iron ships have to be built narrower than wooden ships or the Sewalls with all their accumulated knowledge, tradition, and experience would never build 3,000 [to 3,400] ton ships with only 45 ft. beam, for their wooden ships of this size had 49 ft. beam."

The story as to why Arthur Sewall & Company, well known as a leading shipbuilder and ship operator in the United States, built narrow metal ships after building beamy wooden ones is of interest. The Sewalls knew absolutely nothing about iron ships or iron shipbuilding. Not a member of the firm knew anything whatsoever about naval architecture, and when the firm decided to change from wood to iron shipbuilding, the members were timid. They would not consider having the Bath Iron Works, with its staff of competent technical men, design and build iron or steel hulls for them in harmony with American experience and tradition; they had always been primarily builders and operators, rather than owners, and they themselves insisted on building all of their ships. As they sold some ninety per cent or more of each ship built to outsiders at a profit, the Sewalls made their money building and operating, with their friends, the owners, taking almost all of the risk. They, therefore, decided to employ an experienced builder of British sailing ships to lay out a simple iron shipbuilding plant for them at their old, established yard in Bath, Maine. An Englishman (Waddington) experienced in the building of British sailing ships came to the United States under contract to build for the Sewalls a British steel ship in a setting permeated with the grand traditions of American wood shipbuilding. Therefore, America's first steel ship, built by the Sewalls, was a British ship, and this in more ways than one, for all of the steel used in her construction was bought in England and brought to the Kennebec River on a British tramp. As the Sewalls were decidedly economy-minded, after making a few changes in model ends on their second ship, they persisted—purely because of cost—in maintaining the beam of the original British-designed ship, the *Dirigo,* and the model of their second steel vessel, the *Erskine M. Phelps,* in all of the four-masted shipentines built by them during the years 1894-1902 and to the end of American steel square-rigged sail.

The following comparison of the dimensions of Sewall-built wood and steel square-riggers constructed during the 1890's and around the turn of the century is of interest as a supplement to the Henry Hall table when the cause of the relatively narrow beam of the American-built steel ships is known:

Wooden Sailing Ships					Steel Sailing Ships				
Name	Tonnage	Length	Beam	Depth	Name	Tonnage	Length	Beam	Depth
		Feet	*Feet*	*Feet*			*Feet*	*Feet*	*Feet*
RAPPAHANNOCK	3,054	287.2	48.9	28.8	DIRIGO	3,004	312	45.1	25.6
SHENANDOAH	3,406	299.7	49.1	28.6	ASTRAL	3,293	332.3	45.4	26
ROANOKE	3,539	311.2	49.2	29.2	WILLIAM P. FRYE	3,374	332.4	45.4	26.2

The *Shenandoah* and the *Roanoke* were built from the same model, the *Roanoke* having 11½ ft. added to the middle body and having the deck raised several inches. The *Astral, William P. Frye,* and all other Sewall steel shipentines built after the *Erskine M. Phelps* (1898), including the *Arthur Sewall, Edward Sewall, Acme,* and *Atlas,* were modeled after the *"Phelps,"* which was built with exactly the same dimensions as the pioneer British-designed *Dirigo,* but 20 ft. was added to the parallel middle body, and the deck was raised a few inches on the later and large ships.

Among the sailing square-riggers built at Bath, Maine, around the 1890's were the following vessels, whose dimensions can be compared with those set forth by Henry Hall in his report of 1882:

Bath-built Square-riggers					From Hall's Tables					
					Iron (English) Ships			Wooden (American) Ships		
Name	Year Built	Tonnage	Length	Beam	Tonnage	Length	Beam	Tonnage	Length	Beam
			Feet	*Feet*		*Feet*	*Feet*		*Feet*	*Feet*
OLYMPIC	1892	1,469	224.4	42.1	1,500	248	37.6	1,500	215	40
KAIULANI*	1899	1,570	225.7	42.3	1,600	253	38	1,600	220	40.5
ST. MARY	1890	2,043	240.6	42.4	2,000	270	38	2,000	235	43

* The KAIULANI was built of steel, of an American design, and without any British influence or old British plans or "moulds" to mar her production because of economic reasons.

Three other square-riggers were built in Bath during the last four years of the construction of wood merchant sail, and their proportions, length to beam, are herein set forth in comparison with those of similar-sized British sailing vessels constructed at the same time:

Name of American-built Wooden Vessel	Rig	Year Built	Tonnage	Length	Beam	Ratio of Length to Beam: American Vessel	Ratio of Length to Beam: British Vessel of Similar Tonnage
SUSQUEHANNA	Four-masted shipentine	1891	2,744	273.6	45.1	6.0	6.8
PARTHIA	Three-masted ship	1891	2,495	260.3	44.4	5.9	6.7
ARYAN*	Three-masted ship	1893	2,124	248.6	42.2	5.9	6.7

* The last wooden square-rigged sailing ship built in the world.

Arthur Sewall & Company built the only steel square-riggers constructed in the United States and during the years 1894-1902 launched a fleet of nine vessels totaling 27,323 tons (five for its own account, three for the Standard Oil Company, and a bark for the Williams, Dimond Company, San Francisco). During the latter part of the period of transition from wood to iron or steel sail, only three steel schooners, or fore-and-aft-rigged deep-sea merchant sailing vessels, were built on the Atlantic seaboard (two at Quincy, Mass., and one at Bath, Maine). That the use of iron or steel was at no time popular for sailing vessel construction in the United States is indicated in the following table by the small number of American sailing craft built of iron from the earliest days up to the time (1894) that Arthur Sewall & Company built its first steel square-rigger:

Name of Vessel	Type	Builder	Owner	Year Built	Tonnage	Length	Beam	Depth	Remarks
						Feet	*Feet*	*Feet*	
IRON AGE	Three-masted bark	Harlan & Hollingsworth, Wilmington, Del.	Tupper & Beattie	1869	650	142	30	18.5	First iron sailing vessel built on the Delaware.
JOSEPHINE	Center-board three-masted schooner	William Cramp & Sons, Philadelphia, Pa.	John Main et al.	about 1875	365	126	34	12	Cost $35,000 as against $27,000 for a similar wooden vessel.
TILLIE E. STARBUCK	Three-masted ship	John Roach & Son, Chester, Pa.	William H. Starbuck et al.	1883	2,033	257	42.7	23	First iron ship built in the United States.
T. F. OAKES	Three-masted ship	American Shipbuilding Company, Philadelphia, Pa.	William H. Starbuck et al.	1883	1,997	255	40.6	23.5	Yard built by New York men to construct iron ships under management of Lieut. Gorringe, U.S.N.
CLARENCE S. BEMENT	Three-masted ship	American Shipbuilding Company, Philadelphia, Pa.	William H. Starbuck et al.	1884	1,999	259.9	40.6	23.6	Third and last iron three-masted ship built in the United States.

The Atlantic Works, of East Boston, Mass., in the sixties built a small iron sailing vessel, the brig NOVELTY, for the transportation of molasses from the West Indies in bulk; the hold of the little vessel was completely lined with cement.

The three Delaware-built iron ships—the *Tillie E. Starbuck, T. F. Oakes,* and *Clarence S. Bement*—were unsuccessful vessels and could not compete in either speed or the profitable carrying of cargo with Bath wood Down Easters built at the same time, earlier, or later. All of the trio that comprised the United States's only attempt to construct iron deep-sea sailing ships were branded failures by their owners and the American marine fraternity.

Causes That Drove American Wood Sail from the Seas and the Transition from Wood to Iron and from Sail to Steam

Following the California Gold Rush and clipper ship boom of 1849-1854 came a depression which, in conjunction with sectional politics and the gradual splitting open of a country, developed into a panic and financial collapse in 1857-1858. Anti-maritime legislative and administrative moves that commenced in 1855 continued to the beginning of open hostilities in 1861, and during the war the all-important deep-sea merchant marine of the United States—built, owned, and operated by the maritime interests of the North—was ignored and left unprotected, the Union Navy was wretchedly managed, and the country's foreign trade treated with "criminal indifference."

The American Civil War deeply injured for all time the American mercantile marine and American shipbuilding, for foreign trade was at low ebb in the United States in the first half of the sixties. At the close of the war, vessels propelled by steam tended to relegate the sailing ship to obscurity in certain trades, such as the North Atlantic "ferry." For several years, Canada had supplied to some degree a market for wooden ships, and because of hostilities in the "States," Canada's shipyards boomed, but only temporarily. While America was wounded and helpless, in an international sense, iron successfully supplanted wood in ship construction generally throughout the world, and the factors that enthroned Britain as Mistress of the Seas were iron, coal, and steam, which provided low cost of construction and a low cost of operation for cargo carriers on the Seven Seas.

Whereas in Britain the change from wood to iron as a shipbuilding material became general at a sufficiently early date to cause a large fleet of British sailing ships for deep-sea trade to be built of iron, the change in the United States—deferred some twenty years by politico-economic conditions—was, when made, direct from wood steam to iron steam, and American wood merchant sail held its own with foreign iron (or steel) sail to the end of the nineteenth century. The causes that finally drove American wood sail from the seas were: (1) Britain's domination of practically all ocean trade; (2) the economic operation of foreign (and particularly British) steam freighters, with fueling and repair facilities located in abundance all over the globe; (3) the advantage to steam vessels of the Suez and Panama canals, which greatly shortened almost all long-distance trade routes; (4) the discrimination of underwriters and insurance companies (dominated by the British) in favor of iron vessels and the penalizing of American wooden ships without cause and in opposition to the facts of accumulated experience; (5) the ability of steel hulls, which were lighter and stronger than wooden hulls, to carry more paying cargo on a stated draft; (6) the saving of cost of handling rock or similar ballast, when traveling light, effected by the use of water ballast tanks on steel sailing vessels; and (7) the shortage of men—both officers and seamen—to handle deep-sea square-riggers.

The history of American transition from wood to iron is practically confined to the change from wood deep-sea steam in the forties, fifties, and sixties to iron steam in the seventies, and with this change was associated the switch from the paddle wheel to the screw for the propulsion of ocean-going vessels. As in England, the screw propeller was from the first considered a better mode of propulsion for iron than for wooden hulls, and no country in the world has ever been able to approach the record of American shipbuilders in producing large wood hulls for sailing ships, for paddle side-wheel drive, or even for screw propulsion. Whereas the British had trouble with the sterns of their screw-driven wood steamers, Americans quickly solved the difficulty. Webb built very large wooden screw warships in the early sixties, and as late as 1890 the wood propeller steamships *Manhattan* and *Cottage City* were built in Bath for the outside coast run (winter and summer) between Portland, Maine, and New York.

The approximate percentage of total marine tonnage propelled by wind (sail) and steam for each ten years during the period 1810-1920 is set forth herewith:

Year	Percentage of Total Tonnage: Sail	Percentage of Total Tonnage: Steam	Year	Percentage of Total Tonnage: Sail	Percentage of Total Tonnage: Steam
1810	100.0	—	1870	79.0	21.0
1820	99.5	0.5	1880	60.0	40.0
1830	98.5	1.5	1890	38.0	62.0
1840	96.5	3.5	1900	20.0	80.0
1850	94.5	5.5	1910	10.0	90.0
1860	90.0	10.0	1920	5.0	95.0

The Evolution of Marine Steam Engineering

The following table shows how the working steam pressure of boilers in marine installations has increased and the fuel consumption per horsepower of propelling machinery, with associated auxiliaries, has correspondingly decreased by the use of higher-pressure steam boilers, multiple-expansion engines, turbines, etc., during the century 1820-1920.

Year	Pressure Lbs. per Sq. In.	Lbs. of Coal per I.H.P. per Hr.	Year	Pressure Lbs. per Sq. In.	Lbs. of Coal per I.H.P. per Hr.
1820	8	13.00	1880	85	2.25
1830	12	10.00	1890	125	2.00
1840	25	6.00	1900	175	1.65
1850	30	5.00	1910	215	1.55
1860	40	3.25	1920	250	1.45
1870	60	2.75			

These are neither record nor average figures, but can be considered a fair result for the period of sizable installations in deep-sea work, generally regarded as good and modern at the time of construction.

Whereas improvements in naval architecture, marine engineering, and in shipbuilding and propulsion have been based, to a great degree, on the gradual development of relatively old ideas, the following shows the approximate period when changes of importance passed the experimental stage and were generally adopted as either necessary or highly desirable for large seagoing merchant vessels:

Screw propeller 1848
Iron hull construction....................1855
Surface condenser 1858
Compound steam engine..................1870
Steel hull construction...................1880
Triple-expansion engine 1882
Twin-screw propulsion...................1885
Quadruple-expansion engine 1898
(never deemed necessary except with the higher-steam pressures)
Water-tube boiler 1900
Multiple (three or four) screw propulsion...1900
Superheated steam 1905
Marine steam turbines...................1905
Diesel motor drive......................1925
Electric motor turbine drive..............1928

Small merchant vessels, river and lake steamers, and naval vessels, with occasional sizable deep-sea units of the mercantile marine, often adopted successfully the various factors, as above set forth, many years before the dates given.

The decades of international progress in the design and construction of steam vessels and their machinery are set forth herewith:

Period	Hull and Machinery	Boiler Pressure Lbs. per Sq. In.	Coal Consumption in Lbs. per I.H.P. per Hr.
1845-1855	Iron supplanting wood as building material. Steam supplanting sail for propulsion.	15 - 30	4.0 - 7.5
1855-1865	Screw propeller supplanting paddle-wheel in ocean-going vessels.	30 - 40	3.0 - 4.0
1865-1875	Compound-expansion engines supplanting simple engines.	40 - 60	2.3 - 3.0
1875-1885	Steel supplanting iron as building material. Introduction of triple-expansion engines and the express passenger steamer.	60 - 120	1.9 - 2.5
1885-1895	Application of twin screws and introduction of quadruple-expansion engines and forced draft.	120 - 160	1.7 - 2.0
1895-1905	Introduction of triple screws; water-tube marine boilers and electric-driven auxiliaries.	160 - 250	1.5 - 1.8
1905-1915	Application of four screws in express liners. Introduction of steam turbines; superheated steam and use of oil fuel.	185 - 300	1.4 - 1.7 (fuel oil less)

It is claimed by the British that the first twin-screw steamer was built on the Thames River in 1862, but several twin-screw vessels were built in the United States and operated successfully in both domestic and foreign trade in the 1840's. The S.S. *Ruahine,* fitted with twin screws and described as the pioneer deep-sea twin-screw steamship, was built in Britain in 1865 for the Panama-New Zealand and Australian Royal Mail Company. The first transatlantic steamship fitted with twin screws is said to have been the *Notting Hill,* built in Britain in 1881, but the pioneer express liners fitted with twin screws were the *City of New York* and *City of Paris* of the American Inman Line, built by the Thomsons on the Clyde, and the *Teutonic* and *Majestic* of the White Star Line, built at Belfast during the period 1887-1890. However, single-screw first-class full-powered steamships were built for the Atlantic service as late as the 1930's.

Triple-expansion engines were first sponsored by Benjamin Normand, of Havre, in 1871 and put to use in 1873. In England, such engines were patented by Dr. A. C. Kirk and first built in 1874. The idea was used in the United States a few years later and was generally adopted for vessels on a steady run (not for tugs, ferries, or short-run boats) in the late eighties. In 1881 the *Aberdeen* of 3,616 tons was built for the Australian trade and fitted with Kirk's triple-expansion engines. The coal consumption was stated as 1.3 lbs. per I.H.P. per hour on trial (propelling machinery only). This vessel gave satisfaction and is said to have had an abnormally small consumption of fuel. Her success caused a large number of steamers originally built with compound engines to be changed to triple-expansion by the addition of a third cylinder during the eighties and nineties. The first transatlantic liner fitted with triple-expansion engines was the *Aller* of the North German Lloyd Line, built by Fairfield at Glasgow in 1885 (the same firm had built the big Cunarders *Umbria* and *Etruria* the year before and fitted them with three-cylinder compound engines). At the end of the nineteenth and the first part of the twentieth century, a few quadruple-expansion engines were built, but their employment was strictly limited. The first transatlantic liners fitted with quadruple-expansion engines were the *St. Louis* and *St. Paul* of the American Line, built by Cramp, of Philadelphia, in 1895. Four-cylinder triple-expansion engines fitted with two low-pressure cylinders (about the same diameter as the intermediate-pressure cylinder) were occasionally used. Multiple cylinders of three or even more were used in many of the larger compound engines built in the eighties, and the *Lahn,* built by Fairfield for the Germans in 1887, had triple-expansion engines with five cylinders as had the *Campania* and *Lucania,* built in 1893.

Water-tube boilers were first used experimentally in the United States, but were developed in design and first used in a commercial sense with a measure of success in France. The British vessel *Propontis* (2,083 tons), built in 1874, which was the first vessel to use Dr. Kirk's triple-expansion engine, was also fitted with water-tube boilers, but these boilers were not satisfactory for marine purposes, and they were replaced with fire-tube boilers. The Great Northern transpacific steamships *Minnesota* and *Dakota* (laid down in the U.S.A. in 1900) were the first deep-sea vessels engaged in a long run to be fitted with water-tube boilers that were successful and economical in operation; but such boilers were in use on the Great Lakes in the 1890's, and small-pipe water-tube boilers were also in popular demand in the eighties for pleasure yachts and small craft. Water-tube boilers, with small bent tubes, were an essential for high speed in torpedo boats, but large straight-tube water-tube boilers were demanded and used for large vessels engaged in both the Great Lakes and deep-sea trade.

XIII.

THE CLIPPER SHIP ERA AND THE RISE AND DECLINE OF THE UNITED STATES MERCHANT MARINE

"Speed Is King"—United States Shipping in the 1850's Leads the World

IN THE turbulent, competitive years prior to the gold rushes and booms that brought forth the extreme clipper, Yankee transatlantic packets, we read, "seized to themselves a monopoly of a trade that was, to all intents and purposes, as practical and binding as the charter under which the Honorable John Company enjoyed its exclusive Indian privileges. The Black Ball, Red Star, Swallowtail, and Dramatic lines, of New York, Enoch Train's line, of Boston, and Cope's line, of Philadelphia, were the boast and pride of the nation." The sailings of the Yankee wind-propelled wood packets in the Atlantic "ferry" trade were scheduled with an amazing exactitude. "Fair weather or foul, they sailed as advertised. The skill of their driving commanders had reduced a passage of terror and of from a month's to three months' duration, and frequently longer, to one of comparative luxury and a definite number of days—from fourteen to twenty. These packet ships were the master shuttles in the loom of modern civilization." American bottoms were carrying 84¼ per cent of United States combined imports and exports in 1838-1839, 76½ per cent in 1848-1849, and 75½ per cent in 1855-1856; but they could and would have carried a much larger percentage of American foreign trade had not the American shipowners found it more profitable at times to transport goods between foreign countries and engage in such trade for years without visiting the home port. During much of the forties and fifties, American ships, in addition to carrying some three-quarters of the nation's exports and imports, were skimming the cream of all the ocean trades except those in which foreign merchants were compelled by the protective laws of their own country to freight their goods in vessels carrying their own flag.

Speed first commenced to harass and threaten the domination of established packet lines in 1838, when a packet vessel driven by steam crossed the Atlantic westbound in somewhat over 15 days, or about the sailing packet's record time, and, furthermore, soon proved that steam-driven vessels were to a very great degree independent of wind and that a very uniform length of transatlantic passage of 15 to 17 days could be guaranteed as against a sailing packet's average of some 35 days over the westbound course, with a possible range of from 16 to 80 days (or even more), depending on the weather—wind and seas. Cabin passengers and mail deserted sail for steam quite promptly when steam, with its much greater average speed on a total passage, port to port, became available and passages regular and reliable. Speed was in demand on the Atlantic Ocean, and the British Cunard Line supplied it when the Cunarders made direct sailings between Liverpool and New York in 1848, with the American Collins Line winning the honors from the date of its first sailing in 1850 and holding these honors as long as it had properly subsidized steamships to continue the service. Speed was king in the Atlantic in mid-century, with steam getting the glory and the mail, passenger, and fine freight business, especially on the westward crossing.

When gold was discovered in California, the demand was for speed and more speed. Steamers were used, which, in conjunction with a trek across the Isthmus of Panama, would get passengers and freight from eastern points to California as rapidly as possible; but these steamers had to be built and were expensive to construct and operate, and to fuel them and keep them in repair were both costly and difficult. Moreover, the change from one steamer to another and the trail and caravan land journey across the Isthmus was annoying, laborious, chaotic, and time consuming, with accommodations inadequate. The big demand for transport to California in 1849 and the early fifties (and certainly until the Panama railway was running during the last part of 1855) was for fast sailing vessels that would make a continuous passage by water from an East Coast port to San Francisco. The call was for ships that would make the run not in the usual six months or more but in five or four months and, later, in even less. A premium was put on speed. Owners of ships demanded speed and were willing to pay a high price for fast ships built quickly, with a bonus for rapid delivery. With freight and passenger rates high, they were extravagant in urging builders to elaborate on the fastest and sharpest heavily canvased China packet clippers and illegitimate traders and build equally speedy (and, if possible, faster) as well as bigger ships capable of making good time on the all-water route to California, which meant rounding Cape Horn against the westerlies and usually in very turbulent weather in addition to crossing the tropics twice.

The real clipper ship era followed the arrival of news in the East of the California gold find and the reaction to it that caused a migration of major proportions to the West Coast. Discovery of gold in Australia increased the demand for fast ships through the first half and around the middle of the fifties. Britain had let down its navigation barriers at mid-century, and American ships had a chance to take cargoes to Britain and get a bonus for speed on such cargoes as China tea. Speed began to be demanded in most trades on the oceans of the world. In 1849 a large percentage of the westbound Cape Horn passages to San Francisco took 200 to 240 days; in 1850 the semi-clipper *Samuel Russell* (built for speed in the China trade) established a record of 109 days; and about two and a half months later another China clipper, the *Sea Witch,* romped into San Francisco, completing a Cape Horn passage from New York in 97 days net (102 days gross—clearance to arrival via Valparaiso). In December 1850, the new clipper *Surprise* left New York and reached San Francisco in March after a passage of 96 days 15 hours, and this record was lowered by the arrival in San Francisco of the *Flying Cloud* on August 31, 1851, 89 days and 21½ hours from New York. California was "only 90 days from New York" by sailing ship. (The steamer *California* had made the passage through the Magellan Strait in the period from October 6, 1848, to February 28, 1849; i.e., 145 days.)

On the Atlantic, the American Collins liners had brought Liverpool within ten days of New York by steam, and American clipper ships throughout the Seven Seas were almost monthly establishing new sailing records, while United States transatlantic steam packet liners were decisively beating all competition for speed and both reliability and quality of service. The leadership and superiority of American steamships on the North Atlantic were concurrent with the booming and brief clipper ship era, and the United States discontinued its Collins Line transatlantic steam packet service about the time that it became apparent that the country had overbuilt in fast merchant sail and that there were more clipper ships on the Seven Seas, including the Cape Horn California trade and the Cape of Good Hope Australian, Indian, and oriental trades, than could hope to obtain cargoes and keep operating at a profit. American clipper ships continued to the end of the fifties and the commencement of the Civil War to make speed records. The *Andrew Jackson,* in 1860, established both the westbound transatlantic and the Cape Horn-to-California records for sail, which hold to this day; but it was the medium and not the extreme clippers that survived in competition when a period of sound business based on economic principles returned and freight rates and the number of passengers as well as the charges for carrying them again became normal. Clipper ships had their spars reduced in length and their sail spread lessened in the mid-fifties; smaller crews were shipped; and speed, which had been considered king for a few years, tottered on his throne and had to abdicate before the powerful, insurgent force that demanded business for profit and not for renown. The clipper ship era was as brief as it was glorious and romantic, and during that time United States shipbuilders, commanders, and managing owners showed what the country could do when the demand existed and compliance with it was profitable in the realm of sail—and also of steam.

The shipping of the United States engaged in foreign commerce (excluding whalers) increased from 943,307 tons in 1846 to 2,268,196 in 1857; i.e., 2.4 times in a period of eleven years. Although "the evening of our greatness was upon us," the American tonnage engaged in foreign trade and the total marine tonnage of the United States continued to increase slightly up to the outbreak of the Civil War, when the young American offshoot from the British Empire, with 2,642,628 tons of shipping engaged in foreign trade (including 145,734 tons of whalers and 102,608 tons of steam) and 5,539,813 tons all told (including 877,204 tons of steam), owned a greater floating tonnage than the United Kingdom and nearly as much as the total of 5,710,968 tons in use for all purposes in the entire British Empire. In 1860-1861, American-built, owned, and operated ships engaged in foreign trade, besides participating in the general marine business of the world, were carrying 66 per cent of the exports and imports of the United States. In 1864, American merchant tonnage engaged in foreign trade had shrunk to 1,486,749 tons (excluding 95,145 tons of whalers), and the year's percentage of imports and exports transported in American bottoms was down to 27.5. By 1881, the United States was handling only 16½ per cent of its foreign trade, and the total national tonnage (ocean, coastwise, river, and lake) was only 73 per cent of that of 1861—a reduction of 1,482,079 tons; but all foreign trade tonnage, sail and steam, had lowered from 2,642,628 tons to 1,335,586 tons during the twenty-year period—a drop of 50 per cent. As a maritime nation, the United States virtually surrendered leadership to British iron steam in the mid-fifties and gradually backed out of the picture as a dominant marine power. The Civil War turned the retirement into a rout, and since that time the United States maritime interests have been practically restricted to its coastwise trade, including its vast inland waters—the Great Lakes, etc.

The record of the number of ships built in American shipyards, whereas an index of building activity and usually of shipbuilders' prosperity, bears, at times, but little relation to the prestige and prosperity of American shipping and foreign trade. Toward the end of the American clipper shipbuilding boom, the yards of the United States were overbuilding fine-lined and heavily sparred ships and also constructing some vessels for foreign owners; in 1854 and 1855, an overwhelming percentage of the total tonnage turned out in one of America's largest shipyards (McKay's, of Boston) was for Liverpool owners. During the depression that followed the boom and throughout the period of the Civil War, American-built ships were sold cheaply to foreign shipping interests. Gradually, American foreign commerce passed into the hands of foreigners, and this primarily because of our national non-protective policy and the refusal of Congress to foster United States deep-sea shipping. Every foreign maritime nation, because of government encouragement and support, could afford to operate, and later both build (of iron) and operate, its ships at lower cost than the United States, and the spread steadily increased as the American plane of living and wage rates advanced in relation to those of foreign countries.

Evolution of American Shipbuilding through Speed Demands

Prior to the early forties of the nineteenth century, the average American wooden ship was a bluff freighting craft. There had been built some excellent small deep-sea vessels, popularly known as "packets," which enjoyed a well-earned reputation for speed in distant deep-sea trade. This type of vessel was beamy and rather full forward, but had good water lines aft and a pronounced deadrise or a bottom sloping well up from the keel. She was generally high out of water at the bow and had a good flare forward, with a short, buoyant overhang and moderate freeboard aft. The masts were sloped aft more than was usual, and much sail was carried, giving a rather low and rakish appearance. The demand for speed in many American vessels built in the early nineteenth century capitalized the experience of colonial days and the fight for independence and caused ships to be built of this general type, but with finer lines and more heavily sparred, as (1) privateers in the War of 1812, (2) blockade runners and evaders of coastguard cruisers of Spain, France, and other countries controlling the trade of the islands of the West Indies, and (3) vessels engaging for profit in illegitimate trades—opium, slaves, etc.

American floating tonnage improved greatly in strength and general quality of construction during the last decade of the eighteenth and the first part of the nineteenth century. Sturdy building and powerful vessels were necessary to withstand the hard driving of Yankee skippers, who amazed the maritime world by their refusal to follow the traditions of British and other sailing masters; yet American ships were never heavy and cumbersome as were the British. The United States was a natural wood shipbuilding country, and this cannot be said of Great Britain at any time in its history. When Britain built wood ships, whether naval or mercantile, it had to import most of its timber and planking from abroad. British oak and elm were of good quality, but limited in size, quantity, and availability. An account of a wood barque (113 ft. length, 28.3 ft. beam, 20 ft. depth, and of 397 tons) built at Sunderland on the northeast coast of England in 1835 gives some interesting information with respect to the material utilized in British shipbuilding when Britain boasted of its "hearts and walls of oak" and its warships supposedly dominated all the oceans of the world:

> The keel was 13 inches deep and 10 inches wide, made in three lengths of American and English elm, which was also used for the bottom planks. The frames, or main timbers (some 18 inches square), as well as the bow and stern pieces, were of African oak. The outside planks were of oak—English, Baltic, African, or American—generally 3¼ inches thick. Pitch pine was used for the sides above the upper deck, which was planked with yellow pine.

It is evident that even in the thirties of the nineteenth century British shipbuilders had to obtain most of their wood from abroad, and the price was high. We are told that "a load of English oak which cost £1-7-6 at the time of James I fetched £7-7-0 in 1815 and was still £6-0-0 in 1833."

American ships were often scornfully and falsely referred to by the British as "softwood" ships when a comparison was made with their inferior ships of smaller size, which they claimed were "hardwood" ships of far greater strength and longevity. This false differentiation has been continued to this day in the writings of bigoted British historians. As a matter of fact, the materials used by the builders of ships in both countries were very much the same, and when Britain, in the sixties and seventies, built its famous composite ships, the outside planking (over iron frames) was of teak wood imported from India. An abundance of cheap and suitable timber, readily accessible, materially assisted the United States to win a leading position among the world powers as a builder of ships. It was the availability and relatively low cost of timber in America, coupled with courage, daring, and initiative of Yankee skippers, that caused the United States to lead the world in the 1840's and 1850's as a marine power and operate for many years as the veritable mercantile Mistress of the Seas.

From the forties down through the years to the nineties of the nineteenth century, the unequal battle between "wood sail" and "metal sail" and "metal steam" was waged. Americans preferred wood ships, for they felt at home with them and could build them better and more cheaply than any nation of the world. With a high standard of living, American operating costs soared, and when Britain built cheap iron ships in quantity—and later iron steamers—and operated them at a very low cost, the United States merchant marine was doomed. As William Brown Meloney says in "The Heritage of Tyre": "Unable to build, unable to insure, unable to raise the other fellow's standards to her own, unable to operate in competition with any other nation, the United States had to surrender. It was cheaper to let the other fellow do it, and he was to be found in every port ready to take what we had to transport—the British, the Germans, the French, the Norwegians, the Japanese, the Italians."

On the North Atlantic in the early fifties, the American Collins Line steamships *Arctic, Atlantic, Baltic,* and *Pacific* were competing successfully with the British Cunarders *Niagara, Canada, Asia,* and *Africa.* The *Baltic* held the speed record for both the eastern and western passages between New York and Liverpool, while the American transatlantic sailing packets still held their own in competition for freight and steerage passengers with British steam and were supreme in the realm of sail. No sailing ships of other nationalities could compete with them, and though hard pressed by steamships of various lines, they still retained a good measure of their popularity with shipping merchants, booked a few cabin passengers eastbound, and held the best of the steerage passenger trade, which sail (packets and general traders) dominated during most of the fifties.

Capt. Arthur H. Clark, in THE CLIPPER SHIP ERA, referring to mercantile marine conditions in 1851, has written:

> American ships from home ports were profitably engaged in the India, China, African, and South American trades; the New Bedford and Nantucket whaling ships were to be found upon every sea; the Mississippi, Hudson River, and Long Island Sound steamboats were the most perfect types of this period for inland navigation; and the Massachusetts fishing schooners, the North River sloops, and the New York pilot-boats were far famed for speed and beauty; while the American clippers were now known and admired throughout the maritime world. It was in this year also that the Royal Yacht Squadron presented a cup to be sailed for at Cowes by yachts belonging to the yacht clubs of all nations, which, as every one knows, was won by the *America,* representing the New York Yacht Club.

Captain Clark further says that, whereas in 1851 the mercantile tonnage of the United States was somewhat less than that of the British Empire, yet its quality was much higher, and its value expressed in total carrying power per year (and as "per ton per mile per annum") was much greater. The primary reason for the existence of a merchant ship is her ability to pay her way and earn money for her owners. When a ship ceases to be able to do this, the sooner she is converted into a hulk or broken up the better. The true measure of a nation's merchant marine is its earning capacity, not merely the number or tonnage of its ships, and judged by this standard, the merchant marine of the United States was at this time far in advance of the merchant shipping not only of Britain or the United Kingdom but also of the whole British Empire.

Captain Clark says that the merchant ships of the British Empire "were of such massive construction that they could not carry at the very most more than ninety per cent of the cargo carried by ships of similar tonnage owned in the United States"; that in the matter of speed, "an American merchantman would make five voyages while a British ship was making four of equal length"; and that as to freights, "the American ships had the splendid rates to San Francisco all to themselves, while from China to England the rates of freight were quite double in their favor, as compared with British ships." It is, therefore, evident that, at the middle of the nineteenth century, the merchant marine of the United States "held a commanding position in the maritime carrying trade of the world"; furthermore, American shipbuilders "excelled in every branch of merchant marine architecture." It has been said that, following the Revolution, America gained ascendancy on the seas within a period of seventy years because of its ships and its men (notwithstanding the severe setback due to Jefferson's embargo of 1808 and Madison's War of 1812) and that "by 1855 the fleet of the United States had grown over twenty-fivefold and stood nearly equal in total registered tonnage measurement to the entire merchant marine of Britain—the generally acclaimed Mistress of the Seas—and much superior to it in quality and average size of ships and in the operation of the fleet, both as to speed and reliability at sea, transportation service and effective money-making foreign trading."

In the early fifties, United States-built wood square-rigged ships of from 2,000 to over 3,000 tons were on the Seven Seas in quantity, while "deep-sea traders of 1,000 tons register were more numerous than ships of one-tenth this size seventy years before." Instead of the few scattered shipyards of the early days of the republic, the United States in the early years of the sixth decade of the nineteenth century had several hundreds of well-managed shipyards in operation on its immense Atlantic shore front from Virginia to the Canadian border, many with an annual building capacity thirty or forty times the tonnage output of the largest post-revolutionary American yards. By 1854, the United States, "with its ships afloat and building, its shipyards, its ship designers and shipwrights, its ship captains, officers, and sailors, and its merchants and foreign shipping establishments and organizations, led the world and was at the height of its national marine power, influence, and glory." Unfortunately, however, the decline of the United States as a maritime nation engaged in foreign trade was fully as spectacular as, and much more rapid than, its ascendancy, but "as long as wood sail was to be found upon the seas, American ships were to be seen struggling for survival and for long years enjoying a good and profitable volume of business in competition with British iron and steam tonnage, and this because of the high quality of American wood ships and the courage, resourcefulness, and unequaled ability in sailing and trading of the 'Iron Men' who operated them."

Robert P. Tristram Coffin, in KENNEBEC—CRADLE OF AMERICANS, has said that there were several reasons why the United States took the lead with its sailing ships in the world's ocean commerce.

> One reason was cotton in the South needing manufacturing in England. Another was the apparently unlimited lumber in the forests of Maine and beyond. Still another was the opening of California and the Pacific Coast to the world. All goods had to be carried around the Horn, and America was there to carry them. And the opening of the Pacific Coast meant new lumber, and that lumber was the key that opened China and all the Orient to American sailors. They carried it across the Pacific to sell and brought back cargoes of tea and silk and spice and rice and hemp. Fortunes at both ends of the wide ocean.

The discovery of gold in California in 1848, which threw the United States and the shipping world into a furor, gave a powerful impetus to shipbuilding and created a demand for fast ships. In 1849 the greatest Gold Rush in history was under way, and in that year 775 vessels cleared from Atlantic ports for San Francisco, and 91,405 new people arrived in the Golden City from all parts of the world. Fares and freight rates in the around-the-Horn trade rocketed 400 per cent, and of the three ways of reaching California from the East, (1) overland, (2) via the Isthmus of Panama, and (3) by ocean around South America, the all-water route around the Horn was deemed by far the safest, the surest, and, many asserted, "the quickest."

The first "flyer" to be sent from an East Coast port to California was the *Memnon* (1,068 tons; built in New York in 1847), and on this run of from fifteen to sixteen thousand nautical miles from Sandy Hook to the Golden Gate, made during May-September 1850, she cut the time of the passage, which had previously taken from six to nine months, to a reported length of 120 days (122 days' elapsed time according to records). The *Memnon* is one of the vessels that has been proclaimed by some writers as "the first of the clippers," but she was not a true clipper. Soon after the *Memnon's* fast run had received the plaudits of the public, American clippers electrified the world with amazingly fast passages of under 100 days from New York to San Francisco around "Cape Stiff," and the time of a passage by water all the way from an East Coast port to California was lowered by the *Flying Cloud* in the summer of 1851 to less than three months—a scant 90 days.

Following the finding of gold in California, freights rose to as high as sixty dollars per ton of forty cubic feet, and many ships paid for themselves from the profits flowing from a single voyage around the Horn bound westward. Ships that could travel fast and be built rapidly were wanted. A bonus was paid the builders for speed in construction. It has been claimed that Donald McKay built the clipper ship *Stag Hound* "inside of nine weeks." This vessel was of 1,534 tons and 215 ft. long, and when she was launched on December 7, 1850, she was heralded as "the largest and longest American merchantman." However, there is grave doubt about McKay's having built this ship "inside of nine weeks," as other records say that she was "launched 100 days after laying the keel." Meloney states that Glidden & Williams ordered two ships, which "were launched sixty days from the signing of the contract," and that "thirty days afterward they were both outward bound [for the Golden Gate via Cape Horn] with general cargoes at forty dollars a ton." One of these vessels was evidently the extreme clipper *John Bertram* of 1,080 tons, launched December 9, 1850 (two days after the *Stag Hound*), from the East Boston yard of Elwell & Jackson, which, we are told, was put in the water "61 days after her keel was laid," and she sailed from Boston for San Francisco on January 11, 1851, or 33 days after launching. In the early fifties, there was a great demand for "90-day ships," and this became a slogan regarding speed in construction, very much like the sailing slogan, "80 days to California"; the latter was never realized, and no authoritative records seem to be available to prove that any clipper ship was built in 90 days or "launched sixty days from the signing of the contract." However, some of the clippers did sail for California within the stated time of "thirty days after launching," but they were partially rigged and well along toward completion when they slid into the water. A clipper ship is known to have sailed from Boston to California, deep laden, within three weeks after launching, but one of the earliest and fastest of the real clippers, the *Sea Witch* of 908 tons, built by Smith & Dimon, New York, for the China trade before the days of the California Gold Rush, was launched December 8, 1846, and, according to the records, sailed for China under the command of hustling Capt. Bob Waterman on December 23, 1846, which means only fifteen days after she was launched. This official date of sailing of the *Sea Witch* from New York on her maiden voyage is verified by the old record written aboard the ship stating that the vessel was speeding in the North Atlantic before a northwest gale on her way to China on Christmas Eve of 1846.

Several early American vessels in the "semi-respectable" China trade were fast, but they were small ships with fine lines and not much cargo capacity. These ships, with the privateers, were the prototype of the general American-Chinese fast trader and the China tea clipper. The China tea clippers were driven hard by Down East skippers, and the market encouraged speed of delivery of cargo and paid for it by premiums, the amount of which was based upon the reduction in the time of passage. The China tea clippers and the Newfoundland "fish boxes," as they were called, were the earliest "hard-driven ships"—hard driven because they "had to run for market"; in both trades the most successful skippers were Down Easter or "blue nose" captains who piled canvas on their craft and defied the elements. Swift passages in these and a few other kindred trades meant profits to shipowners not only in more voyages a year but also in the enhanced value of rapidly delivered perishable cargoes. In the tea trade, long sea voyages were known to be detrimental to fine teas; the most delicate varieties became moldy in sea air. The value of tea went up for each day saved in transportation, and it gradually became considered as "good business" for ship captains, in sailing against time to win bonuses for speed, "to drive and blow mainsails out of their bolt ropes and even to send an upper spar crashing to leeward with its gear, when every day gained by such reckless driving for speed added a couple of thousand dollars or so to the value of a big tea cargo." A ship that could bring some sixteen hundred tons of tea to London from Hong Kong in

100 days, as American clippers in the fifties frequently did, it has been said, "would make about seventy thousand dollars profit for her owners."

Fish cargoes from Down East to the markets of South America had to be delivered with dispatch; moreover, some of these cargoes were seasonal. The first ship down to Pernambuco from Canada would get the best price, and some good fast ships sailed out of St. John's in this fish trade, which, unfortunately, has had no chronicler and about which little is known today. The owners made very heavy bets on their ships, and a captain was paid a bonus for speed—cash plus the profit on a number of drums of fish. There was some "terrible driving and cracking on sail" in this trade, and it is said that the ships were at times "under water throughout the passage."

The principal trades for the so-called "clipper" ships, following the oriental activities of fast but small "opium clippers," blockade runners, slavers, and speedy, illegitimate traders, privateers, etc., were: (1) the Chinese tea trade, with the bulk of the cargo going to England, (2) the around-the-Horn Atlantic U. S. seaports and San Francisco run, following the discovery of gold in 1848 and in which American ships had the monopoly, and (3) the Australian-British, known as the "colonial clipper," service commencing with the gold boom of 1851, with its fast passenger and supply ships outbound, and continuing in later years with the paying passage homebound instead of outbound and with the British iron "wool clipper" fleet carrying the Golden Fleece and, later, wheat, etc., from Australia to England. During the clipper ship era, American sail reached the height of its glory and the peak of its fame. The performances of American ships in the Cape Horn passages and California trade are unequaled in the records of merchant sail. But American ships outclassed the vessels of Britain and of all other nations in the competitive Chinese, Indian, East Indian, Australian, and South American trades. As long as the American sailing ship was given an even chance to win on merit of design, construction, and operation at sea, she was supreme.

The Clipper Ship—an American Creation

The real era of the clipper ship and the boom period of shipbuilding in America were one and the same and surprisingly short. The clipper ship—as we now generally accept the term, which is a popular rather than a technical one—was an American creation. There was nothing particularly novel about the idea either as to model of hull or sail plan; the ship was more a product of evolution than a revolutionary creation. The design of fast Brittany smugglers and French privateers was responsible for the form and rig of early American blockade runners, illegitimate traders, and privateers and for the much-heralded and emotionally overemphasized Baltimore clipper—built for speed in order to evade the Spanish naval vessels that attempted to reserve the West Indies trade for the Spanish flag.

The most famous of the Baltimore clippers, a vessel proclaimed by many writers as the pioneer American clipper and as "the first clipper ship built in the world," was the *Ann McKim,* constructed in 1833 by Kennard & Williamson at Fell's Point, Baltimore, Md., for Isaac McKim. This vessel of 494 tons burthen (length 143 ft., beam 27½ ft., depth of hold 14 ft., draft forward 11 ft. and aft 17 ft.) was a full-rigged ship with skysail yards and studding sails fitted as far up as the royal. She had a very sharp rise of floor and, with fine yacht-like lines, had a very small carrying capacity. She was the largest "Baltimore clipper" of her day and was intended for the "semi-respectable" China trade. Her owners, command, and builders claimed for her the honor of being not only the "first vessel of a new type" but also the "fastest ship afloat." When McKim died, the vessel was bought by Howland & Aspinwall, New York, and sold in 1847 by that firm to Valparaiso owners. In the California Gold Rush, she operated between Valparaiso and San Francisco and was one of the first gold boom ships to sail through the Golden Gate (January 1849). On her first run in this service, she made the passage via Guayaquil in 51 days and the following year cut her time to 47 days. She was broken up in 1852 when nineteen years old.

The experience with opium runners in the Orient and fast sailers built for the China trade was responsible for the early American tea clippers constructed by Webb, of New York. Each of four craft of this class turned out in the early forties, following the death of Isaac Webb in 1840, by his son William H. Webb (or by the partnership of John Allen with young Webb, which built ships in the old Webb shipyard for a few years terminating in 1843) has been described as the pioneer American clipper. The *Helena* of 598 tons, built in 1841, is sometimes proclaimed to be the "first American clipper"; the *Cohota* of 691 tons, built in 1843, was claimed to be the "first oriental tea clipper"; the *Panama I* of 612 tons, built in 1844, has been referred to as "one of the earliest of the American clippers"; and the *Montauk* of 505 tons, built for William S. Wetmore, New York, in 1844, was said to be the "pioneer clipper in the China trade at the time of her first sailing." The China "packets" or so-called early China clippers *Helena, Cohota,* and *Panama I* were all built for N. L. & G. Griswold, of New York, but the *Cohota,* the largest of the trio, was said to be partly owned in Singapore. In 1844, three years after Webb built the *Helena,* Brown & Bell, of New York, built the *Houqua* of 583 tons (length 142.3 ft., beam 29.8 ft., depth 16.7 ft.) as a fast and handy sailer for A. A. Low & Bro. and the China trade. There are historians who single out this vessel, which was modeled by Capt. Nathaniel B. Palmer, as the world's first real clipper ship, one authoritative writer saying: "The *Houqua* can with a great measure of justice be called the real pioneer clipper according to the later meaning of the term."

Another famous early American semi-clipper engaged in the China trade was the armed brig *Antelope,* built in 1843 by Samuel Hall, East Boston, Mass. Owned by Russell & Company and the Forbes' of China, the *Antelope* was commanded by Philip Dumaresq, who hailed from the Kennebec River, Maine. Captain Dumaresq early made a name for himself as a fearless and extremely competent skipper, and he became so popular in China that it was said, "When he arrived in a port no other vessel could be unloaded or loaded until Captain Dumaresq's ship was cared for." The *Antelope* was a swift sailer and a reliable vessel; she is referred to in the annals of the sea as "the only square-rigged vessel that ever beat through the Formosa Channel against the northeast monsoon."

John Willis Griffiths, a draftsman employed by Smith & Dimon, New York, and the reputed designer of the *Rainbow* of 752 tons, which was laid down in 1843 and after unconscionable delays was launched in New York in January 1845, has been given the credit by most American marine historians of conceiving and producing the "first of the clippers." Such an acclamation is an exaggeration, for evolution is a steady, developing change, and no rung in the ladder of growth, unless it be the bottom one, can be singled out and featured as an origination or an initiation. Moreover, Griffiths, a competent technical marine draftsman and calculator, was an employee of Smith & Dimon (a famous shipbuilding firm), and Stephen Smith himself was not only an able and experienced constructor but also a naval architect of demonstrated ability and in direct personal charge of the design and technical department of the shipbuilding firm. Again, it takes more than a designer and a builder to produce a vessel; an owner is necessary, and in the case of the *Rainbow* the courage and initiative of William Aspinwall, of the firm of Howland & Aspinwall, the owners, were prime factors that led to the production and successful operation of the epoch-making *Rainbow.*

The *Rainbow* (length 159 ft., beam 31.8 ft., depth 18.3 ft.) sailed from New York for China on her maiden voyage in February 1845. She was back again in September after a profitable round voyage, which, it is said, returned her owners 200 per cent on her initial cost.

"We met no ship, American or foreign, that doesn't know the looks of her heels," reported her skipper, Captain Land, in pride. "The vessel will never be built that can beat her."

The *Rainbow* was cleared again from New York on October 1, China bound. "As month after month passed, bringing no word of her, the shipping fraternity in New York grew anxious, but one April morning she romped in past Sandy Hook. There was a very good reason why nothing had been heard from her. She carried the news to New York of her own arrival at Canton! Captain Land had taken her out in 92 days against the northeast monsoon, beating up the treacherous China Sea against a head wind, and drove her home again in 88 days. Only six months and fourteen days were required for the complete round voyage, and three weeks of this time was consumed in discharging and loading cargo."

The *Rainbow* "went missing" in 1848, but she crowded five successful voyages into her three years' service and covered as much mileage as the ordinary merchant ship was capable of logging in five years. After the *Rainbow* had proven herself, Howland & Aspinwall, her owners, built the *Sea Witch* of 908 tons (length 170 ft., beam 34 ft., depth 19 ft.) at the yard of Smith & Dimon for Capt. Robert H. (Bob) Waterman to command. He had done much to put his employer's house flag in the foreground in the China trade by his fine performances with the *Natchez*—an old flat-floored New Orleans packet of 524 tons, built by Webb, of New York, in 1831. At the time of the building and launching of the *Rainbow,* Waterman sailed the *Natchez* from the Island of Patoe, near Macao, rounded the Cape of Good Hope 39 days out, crossed the line in the Atlantic on the 61st day, and took a pilot off Sandy Hook 78 days 6 hours out from the port of departure—having covered in that time 13,955 nautical miles and made the second shortest passage of all time. The year following, Waterman brought the *Natchez* home to New York from China in 81 days. He was "a driver *par excellence,* a graduate of the North Atlantic packet service, where sheets were padlocked and halyards racked to prevent faint hearts from shortening sail when an officer's back was turned."

The *Sea Witch,* which was 156 tons larger than the *Rainbow* and the "tallest ship afloat," launched December 8, 1846, cleared New York December 23, 1846. Though she did not equal the *Rainbow's* passage out to China (she was 104 days to Hong Kong), she went out to Java Head in the record time of 70 days 10 hours and came back from Canton in 81 days against the monsoon—a record. The next year, she sailed home in 78 days; the following voyage, in 77; again, in 74½; and under Capt. George W. Fraser (1850) from Java Head in 73 days. Her passage of 74 days 14 hours from China (Hong Kong) to New York is the all-time sailing record and has never been equaled by any vessel under sail.

Samuel H. Pook's *Surprise,* built in Boston from plans made by the designer when only twenty-three years old, was an outstanding, beautiful ship of 1,261 tons and a fast sailer (length 184 ft., beam 39 ft., depth 22 ft.). Young Pook, in a brief period of time, designed several California clippers that made a voyage of less than 100 days from an Atlantic port to San Francisco. He also designed, in 1851, the famous *Northern Light* (1,021 tons), which made the record of 76 days 6 hours that still holds from San Francisco eastbound around the Horn to Boston. By beating the time of the *Sea Witch* to the Golden Gate by a scant day (elapsed time) and about five days, port to port (as the *Sea Witch* called at Valparaiso), the *Surprise* "not only attracted the attention of the marine world to herself, to Boston, and to her brilliant young designer, but also caused about twenty thousand dollars of known wagers to change pockets." From San Francisco the *Surprise* "cut across the Pacific, loaded tea for London at eight pounds a ton, and in less than eight months paid her owners a profit of fifty thousand dollars over and above her cost of construction and all expenses of operation." Before the *Surprise* reached England, however, the *Oriental* of 1,003 tons, built in New York in 1849 and belonging to the same owners, A. A. Low & Bro., of New York, had created a sensation that was to make history.

Repeal of the British Navigation Laws and Reform in Tonnage Measurement

W. S. Lindsay, the British historian, says that it was not until 1850 that any great progress was made by British shipowners to improve their vessels. The great alterations of 1832 in the form of government and the breaking up of the East India Company, when its charter was taken away, effectively prepared the way for changing the sea trade that followed the repeal in 1849 of the Navigation Acts of Cromwell and Charles II and caused Britain to begin to build and operate ships to compete with the superior sailing craft of the United States. By 1835 most of the ships of the East Indian monopoly (which were, in fact, slow-moving and unhandy vessels of a type that was half warship and half merchant ship) had been disposed of to shipowners and shipbuilders who had chartered the vessels to, or built them for, the one-time all-dominating East India Company, and competition had been inaugurated among British shipping interests in the rich foreign trade between England and India, the Orient, etc. The Second Navigation Act of Cromwell's administration, which was passed October 9, 1651, had among its provisions one which stipulated that imports for Britain and its new possessions and plantations must be carried in British-built and British-owned ships. This law was in effect for two centuries, and its repeal, following the breakup of the East Indian monopoly, not only saved the British merchant marine but also operated to make it possible for British shipbuilding and shipowning interests to learn from the United States and later to avail themselves, during the American panic and business depression of the late fifties and the period of the American Civil War (1861-1865), of opportunities presented to gain the lead in, and later the mastery and control of, the world's deep-sea trade.

The repeal of the British navigation laws in mid-century, after almost violent opposition to any change in such "marine protection measures" on the part of British shipbuilders and shipowners, actually operated to give new impetus to the building of fast "quality" ships, as the British merchant marine was then, for the first time, brought into direct competition with the vessels of the United States. The repeal gave American shipbuilders—limited to a great degree in their field as far as world trade was concerned—a real opportunity and "something to shoot for." They soon commenced to build the largest, fastest, and finest sailing vessels in the world, which quickly made history and commanded admiration on the Seven Seas and the cream of the traffic.

British shipbuilding had also been handicapped by antiquated and unscientific tonnage measurements. The real reform in tonnage laws was not obtained until the British Merchant Shipping Act of 1854 was passed; this provided that the actual cubical content of a vessel's hull be measured, a registered ton being designated as 100 cubic feet of internal volume. This is known as the Moorsom System and is the method of computation now in general use, having been adopted by the United States in 1865, Denmark 1867, Austria 1871, Germany, France, and Italy in 1873, Spain 1874, and Sweden 1875. The old method of calculating tonnage in the United States—continued from colonial days until the close of the Civil War—was based on the ridiculous formula (a heritage from the English) of

$$\frac{(L - 3/5\,B) \times B \times 1/2\,B}{95}$$

where L was the length on deck measurement and B the maximum breadth of the vessel from outside to outside of planking. The measurement of the tonnage of British ships changed materially in 1819, 1842, and 1854; the American measurement approximated the British during the period 1819 to 1842, but differed very materially thereafter until 1865, when general similarity again became effective. These facts confuse and make impossible a scientific comparison of the size of British and American ships or of British and American ships built and measured in different periods. It is interesting to note that whereas the old tonnage laws produced some abominably proportioned ships in Britain, the tax phase, which greatly influenced the ratios of prime dimensions of British ships, did not dictate the dimensions of the American-built ships to any noticeable degree; this fact accounts to some extent for the superiority of American over British sailing craft during a substantial part of the nineteenth century.

The tonnage tax in effect in Britain in the first half of the nineteenth century was based, as we have seen, on a method of computing the tonnage that most unfairly emphasized and penalized beam. The method of determining a vessel's tonnage used in the United States was also based on the radical and ridiculous old British formula. Fortunately, American shipbuilders and owners refused to construct inferior and unstable vessels in order "to cheat the tonnage tax," whereas British shipbuilding and shipping interests gave prime consideration to tax reduction and lessened the beam of their vessels to a most dangerous degree. A beamy ship in Britain was deemed to be an ill-designed vessel, greatly handicapped in operation because of the tonnage tax, and evidently no consideration was given to relative safety, initial stability, and sailing ability or to the economy of operation and money-making power of comparatively beamy ships that could be handled light and sailed with a full homogeneous "paying cargo" without ballast. The early British shipbuilders and owners had the notion that a narrow ship was necessarily faster than a more beamy one, and they held to this opinion tenaciously until comparatively recent days. The old method of computing tonnage, as indicated by the tax formula, considered only the dimensions length and beam and strongly emphasized the beam. For instance, a ship with a block coefficient of, say, 100 per cent—for simplification in computation and comparison—could have had any depth, for that dimension was ignored. If a rectangle, comprising the length on deck and the extreme beam, were uniformly maintained at, say, 1,000, then extreme proportions of length to beam, giving the vessel far too much or too little beam, would result in the following tonnage figures, based on the old system of measurement and computation; whereas the later and present system, which is based on $\frac{L \times B \times D}{100}$, would theoretically give the same tonnage to each of the three vessels:

Length	Beam	Area of Rectangle	Tonnage Based on Old Law
Feet	*Feet*	*Square Feet*	*Tons*
50	20	1,000	80
100	10	1,000	49
200	5	1,000	26

Such a ridiculous method of computing tonnage, on which taxes had to be paid, penalized beam outrageously and resulted in the building of relatively long and narrow British vessels; for the depth dimension was almost always limited by a restricted draft, beyond which the ship could not be operated in the trade for which she was intended.

Lauchlan McKay, a brother of Donald McKay, in his "The Practical Shipbuilder" (1839), wrote: "According to our present law, like that of the English, you can build a double-decked vessel a mile high, and she will not measure one ton more than though she were but 20 feet."

The substitution of the depth of hold for the ½ beam in the old tonnage formula made it:

$$\frac{(\text{Length} - 3/5\ \text{Beam}) \times \text{Beam} \times \text{Depth of Hold}}{95}$$

This was a step in the right direction, but for years depth of hold was arbitrarily assumed to be the same as one-half the beam. In any event, the reform in tonnage measurement did not go anywhere near far enough because no consideration was given to the form and relative sharpness, or fullness, of the model, and a straight-sided box of a hull without form would show no more tonnage than the sharpest possible ships with triangles instead of rectangles predominating throughout in cross sections, entrance, and run.

The British Shipping Act of 1854, revising the computation of tonnage, removed this restrictive and cramping evil in Britain, but the building of relatively narrow ships had by that time become a habit, and it is only within recent years that British naval architects have given the beam dimension of a ship the consideration that it deserves. The sensible formula for measuring the tonnage of a vessel based on internal volume was not adopted by the United States until 1865. However, prior to that time and from the first, no matter what the tonnage taxes and the method of computing tonnage in the United States were, Americans, when freed from British domination and influence, designed their ships for service and consistently sought to build not only good ships but also the best as far as proportions, stability, and sailing qualities were concerned; hence the wonderful record of small American sailing craft with relatively big beam on the Seven Seas and in trades where small narrow boats could not be operated and would not live.

It was in 1842 that the British, by act of Parliament, first moved to lessen the extent of the evil in the method of tonnage computation as required and set forth in the Rules of the Lord Commissioner of the Admiralty promulgated in 1819, but it was not until 1854, as before stated, that the error was entirely removed and tonnage measurements became technically worthy, nonrestrictive as to proportions, and based on sound common sense. One of the arguments used with the British Parliament in 1842, "to overcome the prime error in computing tonnage as set forth in the rules now in effect," was expressed as follows: "Tonnage as now computed is based only on length and beam and it is evident that in consideration and proportioning of the dimensions of ships more consideration is being given to lower the tonnage tax than to produce a good, safe vessel and a fine sailing craft." Dr. Burney remarked at the time of the controversy: "More attention is paid to evade the tax on tonnage than to a ship sailing well with the wind in different directions; and if the real tonnage of ships were taken an alteration would soon be made in the construction for the better."

Foreign ships visiting Whampoa (Canton) were measured for tonnage by the Chinese to determine a basis for the assessment of taxes. The method used by the Chinese, like old European formulae, emphasized beam and considered only two dimensions, length and beam; the length was taken not of any part of the hull proper but of the distance between the center of the foremast and the center of the aftermast (mizzenmast in a ship-rigged, or three-masted, vessel and mainmast in a brig-rigged, or two-masted, vessel), which was carefully measured. The Indian "country ships" trading from Bombay to Canton, in an effort to keep the Chinese tonnage measurement low, sought to reduce the length dimension "by removing the after wedges of the foremast and removing the stay so as to allow of wedging it close against the after part of the partners, simultaneously performing the opposite operation with the mizzenmast." Indian ships, when repaired, were often sheathed over the old planking, and the Chinese measurements for maximum beam were so exact that Thomas Addison, early in the nineteenth century, says that the Chinese tontiff often insisted on re-measuring a ship that he had measured on a previous voyage, saying, "Ship make a changee; grow a littee more large." With such exactness on the part of the Chinese measurer and the great trouble taken by the command of Indian ships to reduce the length dimension by reducing the distance between the centers of two masts, it would seem that the Chinese formula for tonnage used in assessing port taxes must have affected the design of ships built in both Europe and India for the Chinese trade and operated, as did the old British tonnage formula, to produce narrow and poorly proportioned ships and further, probably, to influence the proper setting of the masts.

The effect of the new measurement rules for the determination of tonnage of United States ships (adopted in 1865) upon the registered tonnage of many American clippers, when original tonnage was computed on the old formula and measurement in effect prior to 1865, is set forth herewith:

Name of Clipper	Tonnage: Old Measurement	Tonnage: New Measurement	Ratio Old to New Measurement
WITCH OF THE WAVE	1,498	997	1.503
NIGHTINGALE	1,060	722	1.468
GOLDEN STATE	1,363	944	1.444
JOHN BERTRAM	1,080	778	1.398
SEA SERPENT	1,337	975	1.371
YOUNG AMERICA	1,961	1,439	1.363
INVINCIBLE	1,769	1,325	1.335
RED ROVER	1,021	766	1.333
INO	895	673	1.330
TYPHOON	1,611	1,215	1.326
STAR OF THE UNION	1,057	797	1.326
CYCLONE	1,109	840	1.320
MESSENGER	1,351	1,026	1.316
EUTERPE	1,985	1,509	1.315
PANAMA (III)	1,139	867	1.314
NONPAREIL	1,431	1,097	1.304
FEARLESS	1,184	909	1.302
SPIRIT OF THE TIMES	1,206	928	1.300
KINGFISHER	1,286	999	1.286
BLUE JACKET	1,790	1,403	1.276
SAMUEL RUSSELL	957	752	1.272
NAPIER	1,811	1,424	1.272
RESOLUTE	786	622	1.264
COMPETITOR	871	690	1.262
SURPRISE	1,261	1,006	1.253
N. B. PALMER	1,399	1,124	1.245
GAME COCK	1,392	1,119	1.244
RATTLER	1,121	909	1.233
SYREN	1,064	876	1.215
WHITE SWALLOW	1,192	985	1.210
ARCHER	1,095	905	1.210
LOOKOUT	1,291	1,068	1.209
ROBIN HOOD	1,181	981	1.204
OCEAN TELEGRAPH	1,495	1,244	1.202
COEUR DE LION	1,098	915	1.200
ORPHEUS	1,272	1,067	1.192
SANCHO PANZA	876	736	1.190
UNION	1,012	853	1.186
ENDEAVOR	1,137	960	1.184
WINGS OF THE MORNING	915	770	1.170

Name of Clipper	Tonnage: Old Measurement	Tonnage: New Measurement	Ratio Old to New Measurement
HERALD OF THE MORNING	1,294	1,108	1.168
FLORENCE	1,045	896	1.167
SWALLOW	1,435	1,239	1.158
DREADNOUGHT	1,413	1,227	1.152
GRACE DARLING	1,197	1,042	1.149
MIDNIGHT	962	838	1.148
OCEAN EXPRESS	1,697	1,483	1.144
MARY WHITRIDGE	978	862	1.134
RAVEN	711	630	1.129
NEPTUNE'S FAVORITE	1,347	1,194	1.129
WINGED ARROW	1,052	933	1.127
ANTELOPE	1,186	1,055	1.124
WILD RANGER	1,044	930	1.122
DASHING WAVE	1,180	1,054	1.120
NOR'WESTER	1,267	1,134	1.117
GEM OF THE OCEAN	702	629	1.116
GALATEA	1,041	939	1.109
GOVERNOR MORTON	1,429	1,303	1.097
ALBONI	917	837	1.096
FLYING EAGLE	1,094	1,004	1.090
DAVID CROCKETT	1,679	1,547	1.085
THATCHER MAGOUN	1,248	1,155	1.081
WILD HUNTER	1,081	1,000	1.081
MORNING LIGHT I	1,713	1,589	1.078
PANTHER	1,278	1,185	1.078
MYSTERY	1,155	1,074	1.075
QUEEN OF CLIPPERS	2,361	2,197	1.075
FLEETWING	898	829	1.073
WILD ROVER	1,100	1,036	1.062
MALAY	868	821	1.057
WAR HAWK	1,067	1,015	1.051
BLACK HAWK (II)	1,109	1,059	1.047
GOLDEN FLEECE (II)	1,535	1,475	1.041
CHARMER	1,055	1,024	1.030
REYNARD	1,051	1,029	1.021
ELECTRIC SPARK	1,216	1,204	1.010
ARAMINGO	716	729	.982
CHARGER	1,136	1,169	.972
DERBY	1,062	1,094	.971

The classification of these clippers into extreme, regular, or medium clippers (or as "out-and-out" clippers, the clipper type, and moderate, medium, or part clipper as sometimes designated) depended to a large extent upon the salesmanship of the builder (influenced by the popular or market demand of the moment) and the advertising publicity of the shipowners used to appeal to merchants and passengers. Some ships that, according to the new tonnage measurement of 1865, must have had a rather full model were classed by either builders or owners as "extreme" clippers when it is evident that they were very moderate, or medium, clippers in form of hull, even if they did have lofty masts, long yards, and a great wealth of canvas. It would seem that any ship whose registered tonnage by old measurement was

30 per cent in excess of that based on the 1865, or new measurement, rules (based on cubical contents of the hull) was an extreme clipper; yet W. H. Webb's *Young America* and *Invincible,* whose registered tonnage measurements were 36 and 33 per cent, respectively, in excess of their 1865 (new) measurements, were admittedly at the time of building "moderate clippers as to sharpness of hull" and carrying capacity for the early fifties, and whereas these vessels were "clippers," they were not considered as "extreme clippers." Economic factors were at play in 1865 that may have tended to give relatively low tonnage figures for some ships, and it is noted that the *Young America's* tonnage was still later set at 1,380 tons; possibly the influences in the early fifties were "to measure big," whereas in later highly competitive days the urge of shipowners was "to measure small," particularly as British official tonnage measurements were consistently less than those of the United States and the lessened operating cost associated with a relatively small registered tonnage began to outweigh greatly the pride of building and ownership of bigger vessels.

It would seem that, considering model fullness alone and ignoring spars and sail spread, the clippers built in the United States during the 1850's could be divided with a fair measure of accuracy, based on the difference between old and new measurement official registered tonnage figures, somewhat as follows: *Extreme Clippers*—those with old tonnage measurement 30 per cent or more in excess of the tonnage determined by the new (1865) measurement rules. *Clippers*—those whose tonnage by old measurement was from 15 to 30 per cent in excess of the new (1865) measurement. *Medium Clippers*—those whose old, or original, tonnage ran up to 15 per cent in excess of the 1865 tonnage computed by the new measurement rules. It is difficult to consider that any hull that showed a less tonnage under the new measurement rules (adopted in 1865) than under the old measurement rules, previously in effect, qualified as any type of clipper as far as hull sharpness, or fullness, is concerned.

The difference between the tonnage measurement (old rules in effect prior to 1865) of certain American clippers and the British tonnage measurement of these ships is set forth herewith:

Name of Clipper	U. S. A. Tonnage (old)	British Tonnage	Ratio American to British	Name of Clipper	U. S. A. Tonnage (old)	British Tonnage	Ratio American to British
FLYING CLOUD	1,782	1,139	1.564	FLEETWING	898	786	1.142
SWORDFISH	1,036	730	1.419	STORM KING	1,289	1,148	1.123
FLYAWAY	1,274	912	1.397	DEFIANCE	1,900	1,695 (Spain)	1.121
RATTLER	1,121	833	1.362				
EMPRESS OF THE SEAS	2,197	1,647	1.334	CANVASBACK	731	673	1.086
CHARIOT OF FAME	2,050	1,573	1.303	ADELAIDE	1,831	1,694	1.081
WILD PIGEON	996	768	1.297	ATMOSPHERE	1,485	1,378	1.078
KATHAY	1,438	1,123	1.280	BELLE OF THE SEA	1,235	1,165	1.060
UNDAUNTED	1,371	1,075	1.275	TORNADO	1,802	1,721	1.047
SIERRA NEVADA	1,942	1,616	1.203	REPORTER	1,474	1,431	1.030
				WEBFOOT	1,091	1,061	1.028

Of the above-mentioned clippers, the first four were rightly classified by their builders as "extreme" clippers, as were the seventh and eighth. The *Empress of the Seas* and *Sierra Nevada* were each referred to as "a clipper," and the *Chariot of Fame* and *Undaunted* as a "medium" clipper. The balance of the twenty clippers tabulated were all described by their American builders as medium clippers except the *Defiance,* which was reported as an "extreme" clipper, and the *Tornado,* which was referred to as a "clipper." It is interesting to note that the fast clipper *Rattler,* which originally measured 1,121 tons, was 909 tons as per new (1865) United States measurement. However, the British measurement, presumed to be based on the same fundamentals as the new American rules, gave this ship a tonnage of only 833 tons and made her original tonnage 36.2 per cent in excess of the new; whereas, according to United States measurement, the difference was only 23.3 per cent.

British Shipbuilders Copy the American Clippers and Attempt to Equal "the Yankee Speedsters"

Soon after the first American clipper set sail to round Cape Horn for California, Britain, wearying of her declining prestige on the Seven Seas and "driven to desperation by her decadent and shrunken mercantile marine," abandoned her long-established protective system and repealed her exclusive navigation laws. The *Oriental* (1,003 tons), a newly built fast ship, was the first American vessel to land a cargo of tea in London after the repeal of the navigation laws. "She had brought this cargo home in the then incredible time of 97 days, and she was the first clipper to be seen in London." Illustrations of her were printed and broadcast throughout Britain, and the *Oriental* became the subject of newspaper leaders and editorials that adjured Britishers "to take a lesson from this Yankee speedster or else prepare to lose for all time not only our domination and leadership on the sea but also our prestige and self-respect."

The first British ships built in an attempt to copy and equal the product of American shipyards were the two pioneer full square-rigged clippers, the *Stornoway* (506 tons) and *Chrysolite* (471 tons), designed and constructed in Aberdeen, Scotland, for the China tea trade and to beat the Yankees. What had become known as "Aberdeen clippers" were, in fact, sharp-lined topsail schooners with a big sail spread, which craft were built in the early days of steam and were designed to resist the inroads of the steamer into the British coasting trade. They were analogous to the American "Baltimore clippers," which also were small and for years were schooner-rigged and intended to be "fast and handy." The American product had to be that in order to evade foreign warships in the West Indies trade following the War of 1812, whereas in the thirties, forties, and fifties British sail engaged in coastwise trade had nothing to fear except competition from rapidly developing steam vessels. Aberdeen clippers and all of the clippers built in Britain for the China tea trade during the fifties and up to and including the seventies were small and narrow vessels. Even when the tonnage measurement rules and the basis for taxation were revised, Britishers, having got accustomed to building narrow ships, persisted in constructing such vessels, for they were stubbornly convinced that narrowness, or a relatively high ratio of length to beam, was an essential to speed. The United States shipbuilders thought differently and built beamy, well-modeled vessels that had the power to carry lofty spars, long yards, and a wealth of canvas. These Yankee ships not only made fast time under all conditions of weather and sea but also had good initial stability and "stood up stiff" without ballast when cargo holds were empty. British ships, on the other hand, were tender and cranky. They had to have ballast placed aboard when light to keep them from listing dangerously, and the tea clippers (including the most famous, such as the later-built *Thermopylae* of 945 tons and *Cutty Sark* of 921 tons) could not carry homogeneous, full-load, light-weight cargoes or fill their holds with tea without placing a good deal of deadweight—which generally means ballast and nonpaying or unprofitable weight—in the bottom of the cargo spaces to make the vessels stiff enough to sail well and utilize their big spread of canvas.

From the time of the arrival of the *Oriental* in London, most of the American clippers that made unusually fast passages to Britain or had gained a reputation for speed had their models, spars, and rigging scrutinized and measured when they arrived at a British port, and the admiralty took off the ship lines for the benefit of British shipbuilders and owners when a "top flight Yankee clipper" was put in dry dock for the cleaning of her bottom. However, the British, with an extensive experience in the China trade and in passages that involved much sailing in the tropics, felt that they knew more of the requirements of the China trade than did the Americans. Moreover, a Yankee clipper in the fifties had to be designed and built large enough to sail in any trade, and the California Cape Horn route demanded big ships; so the British felt, with some degree of justification, that they would have an advantage over the Americans if, especially or solely for the China trade, they built small, light ships of good model, "with a Yankee clipper fineness," which would sail well and "ghost along" in the tropics, where the big, all service American clippers would be relatively handicapped in speed because of their size and weight. After the discovery of gold in California and Australia, United States shipowners did not build clippers exclusively for the China trade as did the British, but sought to own and operate vessels that would be general traders and give a good account of themselves on any trade route of the Seven Seas, giving special attention for years, however, to the requirements of the turbulent Cape Horn California run.

Britain's early clippers were, therefore, small vessels proportioned solely for the China trade, and this fact, it was felt, would give them a four- to eight-day advantage over a big (1,000-ton) general utility Yankee clipper in the China tea trade. The British proceeded with confidence to copy the lines but not the dimensions and proportions of Yankee clippers for the tea trade, and their early clippers and all their China tea clippers to the end of sail took advantage of American initiative, but maintained British traditions as to size, proportions, and certain distinctive characteristics based on British experience and prejudice.

Britain's earliest clippers and all the vessels of this class constructed by the British prior to the end of 1854 were built for the China tea trade and were eight in number. Before the close of 1854, the United States had built and registered 344 clipper ships during the five-year period 1850-1854 inclusive, or 43 times as many as were constructed in Britain. (The American figures are excluding the many clippers built in the United States prior to 1850, such as the famous *Oriental, Sea Witch, Samuel Russell, Rainbow, Architect,* and a host of fast sailers built in the years 1844-1849.) The list includes 24 recognized clippers registered in 1850, 54 in 1851, 75 in 1852, 120 in 1853, and 71 in 1854. Britain's eight earliest clippers were the following vessels:

Built	Name	Tonnage	Builder	Built	Name	Tonnage	Builder
1850	STORNOWAY	506	Hall, Aberdeen	1853	NORTHFLEET	896	Northfleet, Thames
1851	CHRYSOLITE	471	Hall, Aberdeen	1853	LORD OF THE ISLES	770	Scott, Greenock
1852	CHALLENGER	699	Green, Blackwall	1853	CREST OF THE WAVE	924	Pile, Sunderland
1853	CAIRNGORM	938	Hall, Aberdeen	1854	SPIRIT OF THE AGE	878	Pile, Sunderland

Following the shock and awakening stimulation received from the performance and quality of the Yankee clipper *Oriental* in the China-to-England tea trade, the British made a good deal of their early British-built tea clippers and not only were quick to make big claims for their performances under sail but also were so prejudiced in their favor that the truth was persistently ignored and "doctored" in claims of their prowess. American shipowners and shipbuilders gradually became annoyed at both the mental attitude of and the false statements being constantly made by the British in regard to the superiority of British clippers to those built in the United States. In 1851, Richard Green, of the famous British Blackwall Line and its Thames shipbuilding firm, at a London dinner with members of the American legation present, boasted of British supremacy on the seas notwithstanding a temporary setback then being experienced due to the repeal of the navigation laws. Green did not think much of the spirit of harmony that evidently permeated the meeting, but was in a self-satisfied, defensive, and, ultimately, a challenging mood, saying: "We, the British shipowners, have at last sat down to play a fair and open game with the Americans, and, by Jove, we'll trump them." Green, leaving the meeting, promptly set out to build a somewhat larger clipper than the Aberdeen-built speedsters that, he declared, would show her heels to any Yankee-built clipper in the Britain-China trade, and he aptly named his 700-ton tea clipper the *Challenger.*

The British press boldly announced in 1851 that Hall, of Aberdeen, had built the clippers *Chrysolite* and *Stornoway* "expressly to contest the voyage [in the China tea trade] with the *Oriental*, and no expense was spared to make the vessels worthy of the British name." After a good but by no means a record run (reported as "80 days out to Anjer"), the same press in the fall of the year said that, based on this sailing performance, "the *Chrysolite* has the palm"; whereas the *Oriental* had gone out to Anjer over a tougher course with less favorable winds in 71 days, and prior to the wonderful passage of the *Chrysolite*, Cutler says, "a dozen American ships had sailed from New York to Anjer in passages averaging less than 75½ days"—and this over a course acknowledged to be several days longer than that from Liverpool to Anjer because of prevailing winds. It can be said with emphasis in the words of Cutler: "For many long years neither the *Chrysolite* nor any other foreign-built clipper permanently lowered an American record over any course which the ships of the two nations travelled in common."

On January 3, 1852, the ILLUSTRATED LONDON NEWS published an article claiming that the British clippers *Chrysolite* and *Stornoway* had beaten the Yankee "clipper" *Memnon* (of 1,068 tons; built in 1847). This was strange, for the United States ship *Memnon* was not a clipper and, on her first appearance in the China-Britain tea trade, left Whampoa August 16, 1851, and was wrecked on coral reefs in the Gaspar Straits on September 14, 1851.

The British claimed that the *Chrysolite* made the best run in the China tea trade in 1851. This new British clipper was reported as sailing from Whampoa August 18 and arriving off Liverpool December 1, which gives a passage of 105 days. However, the American clipper *White Squall* (1,119 tons; built at New York in 1850) cleared Whampoa September 8 and soon ran into a "wicked" typhoon, had a bad passage down the China Sea, was at anchor off Anjer for two days, lost a topmast off Madagascar, and yet was off the Isle of Wight December 16 and anchored in the Downs December 18 after a passage recorded as 101 days' elapsed time or 99 sailing days. Knowing these facts and many more of a like nature regarding British publicity, with its essentially false statements permeated with national prejudice and loosely made with a total disregard of the truth, the American Navigation Club, of Boston, through its president, Daniel C. Bacon (owner of such vessels as the clipper *Game Cock* of 1,392 tons, built in 1850), challenged the shipowners and shipbuilders of Britain to an ocean race from a port in England to a port in China and back for £10,000 a side, the two vessels—deep laden—to be designed, built, officered and manned by British and Americans, respectively, and the winning vessel "to be paid without regard to accidents or to any exceptions." This challenge being ignored, the Navigation Club, after waiting a reasonable period of time for a response or any sign of interest, publicly announced its willingness to increase the stakes to £20,000 a side or to a higher sum if desired and to consider giving the British vessel certain believed advantages; but these offers failed to draw fire, and the result of the "put up or shut up" Boston challenge was that the British refused to back their vessels (or even any new clipper to be built) with money. While the British publicists were silenced for a while, it was too much to expect the rabid nationalistic British marine fraternity to "shut up" for any length of time. In the meanwhile, American clippers, although handicapped by their size and weight in many parts of the run and by the limited experience of their commands in certain waters, continued to defeat the fastest British clippers in the China-Britain tea trade and steadily win new honors. Meloney gives the following summary of events in the China trade following the ignoring by the British of the American Navigation Club's challenge:

Not long afterward *Chrysolite* and *Stornoway*, and a dark horse, the *Challenger* [built by Richard Green, of Blackwall], got a drubbing that shut up their followers for a long time. The two formed part of the homeward tea fleet of 1852, which included the Americans, *Witch of the Wave*, of Salem, *Challenge* and *Surprise*, of New York, and *Nightingale*, of Boston, named in honor of Jenny Lind.

Witch of the Wave, which got away from Canton at a most favorable period of the northeast monsoon, backed her maintopsail for a pilot off Deal ninety days out! *Stornoway*, *Challenger*, and *Chrysolite*, sailing with a diminished monsoon, arrived out in one hundred and nine, one hundred and thirteen, and one hundred and six days respectively. *Challenge, Surprise,* and *Nightingale,* sailing at practically the break-up of the monsoon, made the passage in one hundred and five, one hundred and six, and one hundred and ten days. The times speak for themselves. It was claimed for the *Challenger* that she cleared from Shanghai, and not Canton, thus adding to her mileage. But so did the *Nightingale* and under less favorable conditions, and beat her by three days. The Americans got eight pounds a ton that year, the highest freight ever paid for tea, and the English bought the *Challenge.*

The following season the *Challenger,* arriving out in one hundred and ten days, hoisted a broom to her foretruck, having beaten out *Nightingale* and *John Bertram;* but her triumph lasted only until she warped into dock. There lay the *Architect,* of Baltimore, which had come home in one hundred and seven days. London had been drinking *Architect's* tea for a week previously and had already chartered her for the next year at an advance over the English fleet of two pounds a ton.

The American owners of the clipper *Nightingale,* disgusted at the publicity given their vessel's sailing achievements and being convinced of the sailing superiority of their ship to anything afloat in any fair race between ports made under similar conditions, challenged the owners of any ship to a Britain-China tea voyage race for £10,000 a side, but like the previous offer of the American Navigation Club, this challenge met with no response.

It is interesting to record that whereas Richard ("Dicky") Green, of Blackwall, talked much of the superiority of the British to the Americans in both building and operating ships and whereas he was undoubtedly a party to the essential falseness of British marine propaganda and insinuated that he bet and won wagers with the Americans that he never made, yet he never built another tea clipper in the fifties, and the tea clipper *Highflyer* of 1,012 tons, which R. & H. Green, of Blackwall, built in 1861, was historically important for three reasons: (1) She was Britain's first 1,000-ton tea clipper and one of the only two such clippers of this size ever built out of 85 such vessels constructed during the entire period of twenty-one years (1850-1870 inclusive) that China tea clippers were built in Britain. (2) The much-heralded Green clipper *Highflyer,* under the command of Capt. Anthony Enright (Britain's greatest commander in the trade), made a couple of voyages to China, followed by a third under Captain Smith, and was then withdrawn, for British historians tell us that "she did not prove fast enough" for the China tea run, having made her runs home in a reported 129, 134, and 128 days each, respectively, in the races of 1862, 1863, and 1864. (3) The *Highflyer* was the second and last clipper ship built by "Dicky" Green or the Green family and associates, of Blackwall, England, famous in the day of East Indiamen.

The Clipper Era—a Contest between Britain and the United States

The middle of the nineteenth century was a momentous time for shipping and shipbuilding in both America and Britain. What has been termed the "clipper ship era," commencing as a result of the growing demand for a more rapid delivery of tea from China, continued and developed under the stimulating influence of the discovery of gold in California in 1848 and in Australia in 1851. It ended, as far as the United States was concerned, during the late fifties and the conditions that led to the Civil War (1861-1865) and terminated in all ocean trades in the year 1869 with (1) the opening of the Suez Canal, (2) the completion and operation of the United States transcontinental railroad, and (3) the ascendancy of the steamship over the sailing vessel as an economical carrier. The so-called "clipper ship era" is the story of a spirited contest upon the seas between the United States and Great Britain, for the shipyards of no other country built—and the flag of no other nation was carried on—any floating tonnage to any noticeable degree (excluding the eastern provinces of Canada) during this great fighting period of sail, which was also, in fact, a conspicuous period of transition from wood to iron for building material and from sail to steam as a means of propulsion. The broad and extended clipper ship era saw the fight between large, sharp-ended, relatively beamy and full (midship) sectioned, loftily sparred, and energetically driven American vessels—well but cheaply built of wood—and British ships of smaller size and of inferior model, construction, and quality built of similar materials (generally oak and hard pine) and later either of composite (i.e., iron frame and teak planking) or iron construction.

When England attempted to copy the American type of clipper in the early fifties and gave orders for the construction of the famous McKay quartet to be built in America (in addition to the purchase of a number of other new American-built vessels), England thereby very definitely acknowledged the U. S. A. supremacy in ship design and construction, and practically all of the American clippers built for the British were used as models for English and Scotch shipbuilders to copy. The British Admiralty, moreover, took a great interest in the model and sail plans of the early American clippers and "took the lines off" the hulls when they were put in dry dock in England and measured all the spars and sails of the American ships. When the big Yankee-built *James Baines* arrived in Liverpool on her maiden voyage, she was praised as "the most perfect sailing ship that ever entered the River Mersey." When this American clipper loaded troops for India in 1857, the vessel was inspected by Queen Victoria at Portsmouth, and "after going over the ship, the queen remarked that she did not know that she possessed such a splendid ship in her mercantile marine." The first American clipper to deliver tea to England from China (incidentally, in record time), the *Oriental,* was promptly measured—both hull and sail plan complete. Her lines were copied by the British Admiralty for the benefit of British shipbuilders, as also were those of the *Challenge* (after she had defeated Britain's best clipper in a famous tea race), built by Webb, of New York; the *Nightingale,* built at Portsmouth, N. H.; the Black Ball Australian clipper packets built by McKay in East Boston; and many other famous American-built clippers. The *Oriental* was the first inspiration of Britain's "clipper ship" builders, who, though they were to launch many beautiful and fast ships in the fifties and sixties (wood, composite, and iron), never succeeded in producing one to vie with the American champions. The fastest sailing vessels that Britain or any other foreign nation ever owned were built in the United States.

In the years 1850-1852, the United States constructed seventy-seven clipper ships for deep-sea trade, but during this period the British, although intensely interested in the performance and ownership of fast sailing ships of the clipper type, turned out only three (all small) from their own shipyards, and features of these were copied from American-built craft. Britain built no clipper ships in the first half of the fifties for the Australian trade nor clippers large enough to participate in the emigrant rush to Australia, for which only big and fast vessels (of large internal volume) were suitable. British shipowners engaged in the colonial passenger trade chartered or purchased sizable American vessels (both Canadian- and United States-built), for these were the only ships afloat that were suited to handle the demands of the Australian trade. Because of the fast voyages of American clippers, the British White Star Line, owning some United States- and Canadian-built clippers, contracted with the postmaster general in 1855 to land mail from Liverpool at Melbourne, Australia, within 68 days and pay a penalty of £100 a day for longer passages; the Baines Black Ball Line, with big new clippers built by Donald McKay at Boston, offered to guarantee 65-day passages and carry the mail between the same ports.

Britain could not build satisfactory large wood merchant sailing ships in the 1850's and "fought shy" of attempting to do so. While the United States (and Canada to a much smaller extent) was building big clipper ships for service on the Seven Seas, British shipyards constructed only a few small clippers but no sizable sailing vessels. When James Baines, the Liverpool shipping merchant and head of the Black Ball British-Australian (colonial) packet line, felt the need of big, fast ships for the Australian trade and placed an order with Donald McKay, of East Boston, to build him three such ships in 1854, the *Lightning, Cham-*

pion of the Seas, and *James Baines* of from 2,083 to 2,525 tons (U.S. measurement), the British press was very critical. When Baines ordered a fourth big clipper, the *Donald McKay* of 2,594 tons, to be built for his line at Boston and purchased other craft then building at the McKay yard, he felt compelled, in order to promote good will and placate the British press and marine propagandists, to order "a 2,300-ton monster colonial clipper" to be built for the Black Ball Line by Hall, of Aberdeen. This vessel, the only wood ship ever built in a British yard that could compare in size with the product of United States (and even Canadian) yards, was a much ballyhooed ship named the *Schomberg*. Hall boasted of her great superiority in construction, model, rig, and speed to anything that the Americans had produced. She proved to be a very costly vessel to build, but the expense, it was claimed, would be justified by her high quality, long life, and good speed, for she was advertised as "the finest, strongest and fastest ship in the world." James Baines, for commercial policy reasons, gave the builder and his creation every possible advantage to make good and prove that Britain could produce a big clipper ship superior to any product of the Yankees, whose vessels were dominating the ocean trade routes of the world. Capt. James Nicol ("Bully") Forbes, of *Marco Polo* and *Lightning* fame and the commodore of the Black Ball Line, was placed in command of the *Schomberg*. He expressed himself as being delighted with the ship and pleased with her tremendous spars (which included a 110-ft. long main yard) and talked boastfully of what he was going to do with this thoroughly British clipper ship.

The vessel sailed from Liverpool for Australia October 6, 1855, with a great send-off from a crowd of patriotic enthusiasts and with the builder's and captain's boast of "Sixty days to Melbourne" flying from her signal halliards. The ship's lack of speed and her unhandiness irritated Captain Forbes throughout the passage, and he could not help but compare her performance with that of the much faster, better balanced, and responsive clipper *Lightning,* his last command. When it was evident that the passage, notwithstanding all his driving and early boasting, would occupy 85 or more days instead of the promised 60 days, the temperamental and highly chagrined "Bully" Forbes acted "peeved" and indifferent, and the ship, refusing to come around when asked to do so, slid up on a sand bank about midnight on December 27, 1855 (when about 82½ days out), some thirty-five miles west of Cape Otway. When Captain Forbes was told by an officer that the ship was hard aground, he angrily responded with, "Let her go to Hell" and went below. The vessel, notwithstanding the builder's boast of her novel super-strong construction and earnest outside efforts to save her, became a total loss; but all the passengers were safely disembarked because of the efforts of the chief officer and a steamer that fortunately sighted the ship the next day and rendered the needed assistance. At a mass meeting of the rescued passengers in the Mechanics Institute, Melbourne, Captain Forbes was severely censured, and it was declared that he "was so disgusted with the slowness of the passage that he let the ship go ashore on purpose." The British marine historian Basil Lubbock, who writes highly of the ability of Forbes as a driver and a seaman and his "wonderful passages in the *Marco Polo* and *Lightning,*" says: "With regard to the *Schomberg* I have little doubt in my own mind that Forbes was disgusted with her sluggishness and by no means sorry when she tailed on to the sandspit." This was Britain's only attempt to compete with the United States in the construction of sizable wood clipper ships, and the venture was a most unfortunate, unsuccessful, and expensive one.

From the time of the height of United States marine supremacy in the 1850's, Britain devoted its major energies to the development of iron ships, for iron in those days was a natural resource of Britain, and the teak used in composite ships was a product of its Indian possessions; whereas the United States had been backward in the development of iron mines or rolling mills and was primarily a timber country. Britain also turned to steam in order to use both iron and coal, its two major natural resources, and because of these it became, following the Civil War in America, the undisputed Mistress of the Seas.

Webb of New York and McKay of Boston, the Greatest Builders of Ships during the Clipper Ship Decade

Isaac Webb (1794-1840), of New York, has been called "the father of American [nineteenth century] shipbuilding." He was a great man, and his son William H. Webb (1816-1899) was a worthy successor, more technical, versatile, and progressive, and carried on the business with marked success. W. H. Webb was the greatest practical and scientific American shipbuilder of the wood sailing packet and clipper era. (He designed and built steam wood naval vessels until 1866 and wood merchant steam until 1872, when he retired from the business, but his last wood merchant sailing vessel was built in 1869 after a decade of relative inactivity in this field.) W. H. Webb built the fastest and most famous transatlantic sailing packet, the *Yorkshire,* in 1843 and during the years 1841-1844 inclusive constructed an important quartet of fast packets for the Pacific, or oriental, trade, which have been described as "the first China tea clippers" of a fast pre-extreme clipper type. These were the *Helena* (598 tons), *Cohota* (691 tons), and *Panama I* (612 tons)—all three for the Griswolds, of New York; and the *Montauk* (505 tons), built for William S. Wetmore, also of New York.

Webb built his first real clipper, the *Celestial* of 860 tons, in 1850 for Bucklin & Crane, New York, and this vessel was described by contemporary authorities as "the sharpest ship built up to this time." While much too small to keep steadily in the turbulent California trade, the *Celestial* gave satisfaction as a Cape Horner, and her arrival at San Francisco the end of October 1850, when 104 days out from New York, was the second best run from an East Coast port to California prior to March 1851. She was beaten only by the fast clipper *Sea Witch,* which reached the Golden City on July 24, 1850, 102 days' elapsed time and 97 sailing days from New York.

In 1851, Webb constructed five real clippers: the *Gazelle* of 1,244 tons for Taylor & Merrill; the *Challenge* of 2,006½ tons for the Griswolds; the *Comet* of 1,836 tons for Bucklin & Crane; the *Invincible* of 1,769 tons (a clipper packet) for James W. Phillips; and the *Swordfish* of 1,036 tons for Barclay & Livingston, all being New York owners, merchants, and operators. Three of Webb's first six real clippers later sailed under the British flag: the *Comet* as the *Fiery Star* (an Australian packet), the *Challenge* as the *Golden City,* and the *Gazelle* as the *Harry Puddemsey.* The *Celestial* was sold to the Spanish during the depression of 1858, and the *Gazelle* for a few years between 1855 and 1861 sailed under Peruvian colors. The other two of Webb's first clipper sextet came to tragic ends while under the American flag. The *Swordfish* stranded and was lost on the Yangtze River, China, in 1862, and the *Invincible* was destroyed by fire at New York in 1867.

In 1852, Webb built two clippers, the *Flying Dutchman* of 1,257 tons, a very fast and successful Cape Horner, and the *Australia,* a packet clipper of 1,289 tons; each was wrecked, the former when approaching New York from San Francisco in February 1858 and the latter near Ayab in May 1864. During 1852 and 1853, the peak years of extreme clipper ship production, Webb was a leader in conservatism among the owners and builders and steadily urged the use of models of greater carrying capacity and with less sail spread. He suggested giving much more attention to fundamental economic principles and the cost of carrying cargo per ton-mile. He advocated the building of less extreme vessels in the interest not of the builders but of the owners (and of the command, whose business it was to find and direct the crews when able seamen were becoming scarce and the men available were generally "an incompetent, unreliable and undesirable lot," sometimes described as "worthless" or even "gutter sweepings"). Webb emphasized the need of building ships that would require much smaller crews and that could be operated with a much less cost of repairs, while carrying more paying cargo acceptably, than the extreme clippers that owners were demanding in 1851. In 1853 he built two clipper ships, the famous and historic *Young America* of 1,961 tons and the *Flyaway* of 1,274 tons, and the small medium clipper bark *Snapdragon* of 619 tons. Webb, also in 1853, modeled the *Neptune's Car,* a fast clipper of 1,616 tons built by Page & Allen at Portsmouth, Va. The *Young America,* the finest and most profitable Cape Horner of clipper type, saw the longest service of any vessel (1853-1883, i.e., over thirty years) in the trade from the East Coast (and North Atlantic) to California. In 1883 she was sold to the Austrians, renamed *Miroslav,* and "went missing" in 1886, when thirty-three years old. The *Flyaway,* a fast and successful ship in all trades, went under the Spanish flag in March 1859 and was renamed *Concepcion,* with hailing port Cadiz; in 1875 she was registered as the British bark *Bothalwood* of Newcastle-on-Tyne.

For quality of design and construction, no shipbuilder within such a limited period as three years (1851-1853 inclusive), in addition to other clippers and other types of vessels (both sail and steam), ever built such a diversified group of outstanding clippers as the following sextet of splendid fast sailers designed personally by William H. Webb and constructed at his New York yard:

Name of Clipper	Launched	Tonnage	End of Vessel	Name of Clipper	Launched	Tonnage	End of Vessel
CHALLENGE	May 24, 1851	2,006	Wrecked on French coast, 1876	SWORDFISH	Sept. 20, 1851	1,036	Wrecked on the Yangtze, 1862
COMET	July 10, 1851	1,836	Burned at sea, May 1865	FLYING DUTCHMAN	Sept. 9, 1852	1,257	Wrecked on the New Jersey coast, Feb. 1858
INVINCIBLE	Aug. 6, 1851	1,769	Burned at Brooklyn, Sept. 1867	YOUNG AMERICA	Apr. 30, 1853	1,961	"Went missing" in No. Atlantic, 1886

This outstanding achievement in the realm of production of quality merchant sail for service on the Seven Seas is further emphasized when it is noted that four "famous flyers" were on the building stocks of the Webb yard in the boom year of 1851 at the same time. When the big and magnificent *Challenge* (the first three-decked clipper, the largest merchantman built up to that time, the most heavily sparred vessel of her size, and the loftiest ship ever built) was launched May 24, 1851, she slid down ways between building berths on which the record-breaking speedster *Comet* and the clipper packet *Invincible* (described as "the fastest packet of all time") were building, with their big iron-braced hulls well advanced; while on nearby stocks the remarkable fast clipper *Swordfish* of a size more adapted to the China than the Cape Horn trade, but destined to prove unbeatable in both, was in frame and partially planked. These four vessels, each one unique in design and sailing ability, were launched from the Webb yard within a period of three months and twenty-seven days (or 119 days of each other).

Earlier in the same year (1851), William H. Webb built the beautiful clipper *Gazelle* of 1,244 tons, but her owners insisted on a sharp-bottomed model that, Webb insisted, would make her a very fast sailer in the tropics but unsuitable for the Cape Horn trade. In light leading airs, the *Gazelle* proved unbeatable, but in a heavy blow she could not sail with the clippers modeled with a flat floor. The same day that the clipper ship *Gazelle* was launched (January 21, 1851), Webb put overboard from his yard the Pacific Mail steamship *Golden Gate* (2,067 tons) and the transatlantic packet ship *Isaac Bell* (1,072 tons), built for the Havre Line. The launching on the same tide of a fast clipper ship, a big deep-sea steamship for service in the Pacific, and a modern transatlantic sailing packet ship is suggestive of the famous New York builder's great versatility.

It was after building extreme clippers in 1851 and launching four outstanding and world-famous vessels of this class within a period of four months that Webb became decidedly cool toward the building of sharp-modeled, heavily canvased sailing vessels of the extreme type, and it was a year (September 9, 1852) before he launched his next real clipper, the *Flying Dutchman,* which authorities said had "a faultless model." Notwithstanding her moderate size (1,257 tons), she proved to be an admirable and fast Cape Horner and very speedy in the Australia and China trades. Seven months and three weeks after the *Flying Dutchman* was put overboard, Webb launched the *Young America,* generally considered his "masterpiece" when speed, carrying capacity, profits in operation, reliability, and longevity are taken into consideration. The *Young America* sailed from New York for San Francisco on her maiden voyage June 10, 1853, and she arrived at New York from San Francisco with wheat to complete her last voyage under American ownership on October 6, 1883, or thirty years and four months later. The clipper was always a prime favorite with shippers in the difficult Cape Horn trade. She commanded the highest freight rates and, it was said, "proved to be a veritable mint to her owners" and a profitable vessel for the underwriters to insure.

It was not disappointment over the sailing performances of the quartet of extreme, sharp-lined, and heavily canvased clippers that William H. Webb built in 1851 from his own designs that caused him to denounce the extreme type of sharp-lined, overcanvased, and heavily manned clipper ship as an uneconomic production; for each of these four Webb-built vessels proved to be an amazingly fast sailer and a maker of records. (From the first, he protested some features of the *Gazelle* that the owners, nevertheless, insisted upon.) Before the big *Challenge* was clear of Sandy Hook, Webb remarked to a member of the Griswold firm: "You may get the proper captain and officers to command that big lofty ship, but you won't get competent crews in these days to man her and it will take a lot of experience and willing A.B.'s to handle that sail spread." The maiden passage of the *Challenge* proved that Webb was correct. Capt. "Bob" Waterman was a great navigator, seaman, and driver, but he could not make sailors out of bums in a few days' time; the result was mutiny, floggings, and deaths. The ship made a fast run to San Francisco of 106 days (from clearing Sandy Hook to the Golden Gate), a splendid performance for a July sailing and, it is said, "beaten only once in the history of sail." She outsailed the clippers *Eagle* and *Telegraph,* the only other ships to make July sailings, by twenty-three and nineteen days, respectively, from anchor to anchor. The trouble with the crew and the charges made against Captain Waterman drove that able commander not only from the *Challenge* but also from the seas. Captain Land replaced Captain Waterman, took the big clipper to China with a makeshift crew, and made all-time speed records with her, running from Hong Kong to San Francisco in 33 days and from the coast of Japan to the Golden Gate in 18 days. Returning, the ship was only 8 days from San Francisco to Honolulu and fifteen days later was within four hundred miles of Hong Kong. Captain Land died at the Chinese port, and the first mate of the *Witchcraft* took temporary command and made a record run from Anjer to Deal in 65 days, overtaking the crack British clipper *Challenger,* which left Anjer nine days before her, both vessels reaching Deal on November 18, 1852, while the *Challenge* left Anjer September 13 and the *Challenger* on September 4.

The *Comet* was a handsome ship and proved herself to be "one of the very fastest of all clippers" and "one of the most successful sailing ships ever launched from any shipyard." The *Comet* holds the all-time record for sailing in the Northern Hemisphere from the equator to New York in the Atlantic and between San Francisco and the equator in the Pacific. In early March 1854, the *Comet* made the record run of 14 days from the Atlantic line to Sandy Hook. In February 1853, she ran from the Golden Gate to the Pacific equator in 11½ days (later that same year, leaving San Francisco December 27, she crossed the line 13½ days out). On February 25, 1856, the *Comet* reached San Francisco after a record run of 12 days from the equator. She also holds the record for the fastest eastbound Cape Horn passage from San Francisco to any East Coast U. S. A. port, reaching New York March 14, 1854, after a passage from the Golden City of 76 days and reported as 76 days 7 hours, anchor to anchor. On this run, the ship also established an all-time record from the Golden Gate to Cape Horn of 35 days 7 hours. In 1854, with California freights low, the *Comet* crossed from New York to Liverpool and, loading there for China, made another all-time record passage (June-September) from Liverpool to Hong Kong of 83 days 21 hours, pilot to pilot, and 84 days 16 hours, anchor to anchor. In December 1854, the world's fastest speedster made another record by sailing from Hong Kong to Batavia in 7 days. On her maiden voyage, the *Comet* ran from New York to San Francisco (October 1851-January 1852) in 103 days, beating the clippers *Trade Wind, Wild Pigeon,* and *Golden Gate,* which sailed about the same time, and making better time than any vessel that sailed from an East Coast port during August, September, and October.

The *Invincible* was not an ocean sprinter but a very fast and commodious clipper packet designed for the North Atlantic trade. She has been authoritatively described as the fastest of all packets. It is a question, however, as to whether or not she was faster than Donald McKay's clipper *Staffordshire,* built for Train's Boston-Liverpool line of packets. The *Invincible* had fuller lines and less sail spread than the *Staffordshire* and was more of a packet than a clipper; whereas the *Staffordshire,* with her sharp concave entrance lines, was more of a clipper than a packet. A comparison of the dimensions of the two rival ships is set forth herewith:

Name of Vessel	Launched	Builder	Tonnage	Dimensions in Feet: Length (keel)	Length (over-all)	Beam	Depth	End
STAFFORDSHIRE	June 17, 1851	McKay, East Boston	1,817	228	243	41	29	Lost Dec. 25, 1853, near Cape Sable
INVINCIBLE	Aug. 6, 1851	Webb, New York	1,769	225	245	42.8	25.5	Burned at Brooklyn, N. Y., loading dock on Sept. 11, 1867

The *Staffordshire* had a life of only two and a half years; whereas the *Invincible* saw steady service for sixteen years, which included the periods of depression and the Civil War. The *Staffordshire* has to her credit a run from Boston to Liverpool of 14 days 18 hours, a Cape Horn passage from Boston to San Francisco of 102 days, and a run from Sand Heads (Calcutta) to Boston of 84 days. She was lost, with only 44 persons out of 214 on board being saved, when making a westward transatlantic packet passage from Liverpool to Boston.

The *Invincible* saw service as a Cape Horner, making six California voyages, which averaged 117.8 days on the westbound passage, during the years 1851-1866. This vessel did not specialize in the California trade as did the record-making Cape Horners *Young America,* which averaged 117.9 sailing days on twenty-four westward passages during 1853-1882, and *David Crockett,* which averaged 118.9 days for twenty-five passages during 1857-1883. The *Invincible* saw service over all the main trade routes on the Seven Seas and, notwithstanding her full bow lines, did admirable service in all of them during her eventful life (1851-1867). Although designed and built for the North Atlantic trade, the *Invincible* did not enter that service until 1860, when she was purchased by Spofford & Tileston. She was a regular packet in that firm's New York-Liverpool line during 1860-1863 and made eight good round voyages, her first being made in 19 days out and 16 days home. Completing her maiden voyage in early 1853, the *Invincible,* after reaching London from China, sailed from that port home and made an all-time record of 6 days 3 hours from the Scilly Islands to the eastern edge of the Banks (Lat. 48° W.). She registered a speed of 15½ knots for a while. On account of the great demand for tonnage in the California trade when the *Invincible* was built, she was diverted to the Cape Horn run for her first two voyages. Captain Johnson claimed that if he had not been required to put into Rio de Janeiro for water because of a leaky tank, she would have made her maiden passage out in 107 days and that her average for the first two Cape Horn westward runs would have been 108½ days against 113 days, port to port, as officially recorded. On her maiden voyage, the *Invincible* covered 400 nautical miles in one day, which is the third best day's run ever recorded on the California passage and within a few miles of the record of the *Great Republic* and the best day's run ever claimed by the *Flying Cloud.* For the next five years, the *Invincible* operated between England and Australia under charter as a White Star packet, during which she made runs from Liverpool to Melbourne in 76 days and 79 days. The ship made two passages in the Britain-China tea trade. In 1852-1853 (out of season), she ran from Whampoa to the Downs (London) in 105 days and was only 40 days from the Cape of Good Hope. The length of this passage was practically duplicated in early 1856, and after her last Australian passage the *Invincible* went to China and reached New York in October 1859 only 78 days from Anjer. Completing her 1854 voyage, the packet clipper went from Melbourne to Bombay and ran from there to Liverpool in 92 days. The last three voyages of the *Invincible* in the California trade showed faster westward Cape Horn runs to San Francisco than those made by other clippers at about the same time. In 1864 she beat the *Dreadnought* by twenty-five days and in 1865 by eight days. Her average of four passages made in the sixties was only 114½ days (best, 109 days; longest, 119 days), and these runs were made generally in the worst season of the year for speed. The *Invincible* was a favorite ship in every trade in which she was engaged and, with her packet-clipper model, proved to be an admirable and comfortable sea boat as well as one of the fastest vessels afloat.

The last of Webb's great quartet of extreme clippers to be built in 1851 was the *Swordfish,* a relatively small ship of 1,036 tons and of a size more suitable for the China trade than for Cape Horn service. On her maiden voyage, she was put in the California run and left New York in early November 1851 at about the same time that Donald McKay's new crack clipper *Flying Fish* (1,505 tons) sailed from Boston on her maiden run, also bound for San Francisco. The McKay-built vessel was about fifty per cent larger than the Webb-built clipper; but the *Swordfish* outsailed the *Flying Fish* and made a passage of 90 days 18 hours out as against 100 days 6 hours for the McKay clipper. The *Flying Fish* was a wonderfully fast ship and one of the greatest and speediest of all Cape Horners; yet she was decisively beaten by the much smaller Webb clipper, which on this voyage, when size (not to mention luck) is considered, made the fastest westward Cape Horn crossing of all time. The *Swordfish* ran to the Pacific equator in shorter time than the best performance of the *Flying Cloud* and in over three days' less time than the best run ever made by the *Flying Fish.* When 89 days out, the *Swordfish* was within 100 miles of her destination and 140 miles ahead of the *Flying Cloud* on her 89-day 21½-hour record run of 1851. Then the Webb clipper encountered calms and light unfavorable winds, and her passage was stretched out to 90 days 18 hours; whereas that of the *Flying Cloud* ended with a burst of speed in heavy favorable winds.

Continuing her maiden voyage, the *Swordfish* sailed from San Francisco westward around the world and made a record performance of 226 days at sea for the entire trip. The time was, say, 91 days from New York to San Francisco (90 days 18 hours), 46 days from there to China, and 89 days from China home against the monsoon. Capt. David S. Babcock rightly reported: "This time has never been equalled, and if the size of the ship is taken into consideration, the *Swordfish's* passage to California is far ahead of any other." The record of 226 days around the world made by the *Swordfish* on her maiden voyage can be compared with the four voyages of the *Flying Cloud* around the world, which were completed without accident and which occupied 229, 251, 242, and 244 days, respectively. The first four and best runs of the *Flying Fish* around the world via either China or the Philippines occupied 275, 240, 264, and 266 days, respectively. The *Swordfish,* on her second voyage, made a record transpacific passage of 32 days and 9 hours from San Francisco to Shanghai, and she averaged 225 miles a day on this run. For several years, the *Swordfish* made fast passages in the Cape Horn and the China trades, but in 1859-1860 did a magnificent bit of sailing when she established an all-time record of only 81 days from Shanghai to New York. She ran from Shanghai to Anjer in 10 days and covered the last lap from the Atlantic equator to New York in 16 days and from the Cape of Good Hope home in 41 days.

While William H. Webb became somewhat indifferent to the building of sharp and heavily canvased clippers in late 1851 and built no vessels of this type exceeding 2,000 tons thereafter and only one clipper of over 1,300 tons (the *Young America* of 1,961 tons), Donald McKay pursued an entirely different course, ignored the economic factors of freight revenue and costs of operation, maintenance, and depreciation, and ardently advocated the construction and use of bigger and still bigger and faster and still faster sharp-modeled ships. In 1852, McKay built the *Westward Ho* of 1,650 tons, the *Bald Eagle* of 1,704 tons, and the *Sovereign of the Seas* of 2,421 tons. The following year (1853), he built the *Romance of the Seas* of 1,782 tons, the *Chariot of Fame* and *Star of Empire,* each of 2,050 tons, the *Empress of the Seas* of 2,197 tons, and the famous "white elephant" *Great Republic,* which registered 4,555 tons as he built, launched, and sent her to New York to load (but which, after a fire before she sailed, had a deck removed and was cut down by her new ownership and management to 3,357 tons). In 1854 and 1855, Webb built no clipper ships, but concentrated on sailing packets and steamers, building seven vessels a year as against four in 1853 and eight in 1852. McKay, on the other hand, built for James Baines and the British-Australian Black Ball Line, of Liverpool, a famous quartet of big, fast clippers named the *Lightning* (2,084 tons), *Champion of the Seas* (2,447 tons), *James Baines* (2,515 tons), and *Donald McKay* (2,595 tons).

After the experiences with the big clippers that McKay had built "on spec" *(Great Republic, Sovereign of the Seas,* and *Empress of the Seas),* the enthusiastic East Boston advocate of big, sharp-modeled, heavily canvased ships did not have the means to build for his own account any more large clippers, and no United States shipping merchants cared to own such vessels and attempt to operate them. The record-breaking *Flying Cloud* (1,782 tons; built in 1851), known as "the Queen of Cape Horners" and considered by most authorities as McKay's best and fastest clipper, was not making money for her owners (Grinnell, Minturn & Company, of New York), and she sailed on her sixth and last voyage to California in May 1856. This vessel was showing the effects of five years of hard driving, and she made a long and expensive passage of 185 days to San Francisco, port to port, following which she was laid up to save operating losses and later "sold foreign." McKay was fortunate in obtaining a contract from the British to build four big clippers. They greatly needed fast sailing vessels of size to carry large numbers of emigrants in the early and mid-fifties, but this business terminated in 1855, and whereas McKay built five so-called "clippers" of from 1,031 to 1,698 tons (averaging 1,380 tons) for Americans from the close of 1853 to the end of the fifties, not one of this quintet was noteworthy for speed or any other characteristic that appealed to the shipowners. Donald McKay's greatest backers and customers for his product were Enoch Train, of Boston, and James Baines, of Liverpool, and each of these men, as did Donald McKay himself, lost his fortune because of big, fast clipper ships that could not be operated at a profit under ordinary commercial conditions, with normal freight rates.

William H. Webb built no clipper ships in 1854 and 1855, but constructed at least fourteen important vessels of other types, both sail and steam, including three paddle-wheel vessels and one screw steamer (the *Astoria* for B. C. Saudert, of San Francisco), seven high-class packets and some general traders, including the three-decked *Ocean Monarch* of 2,145 tons (built for W. T. Frost & Company), the largest general trader of her day in the North Atlantic. In 1856, Webb built his last three clippers of a type that he advocated and classed as medium, or half, clippers; but only two of them, the *Intrepid* and *Black Hawk (II),* were over 1,000 tons register, the third (*Uncowah* of 988 tons, built for Wakeman, Dimon & Company, New York) being sold to the Peruvians because of conditions brought about by the Civil War. The *Intrepid* of 1,173 tons, built for Bucklin & Crane, was an outstanding vessel. Capt. E. C. Gardner, her master and part owner, who had previously commanded the clippers *Celestial* and *Comet,* declared that the *Intrepid* not only was a handsome, fast ship, a great carrier and a good money-maker but also "had never met her equal in sailing qualities." This vessel, in a run from Shanghai to Hong Kong during early March 1860, left port side by side with the fast mail steamer *Yang Tsze;* each made a direct run to Hong Kong, but the *Intrepid* arrived at her destination two hours ahead of the mail steamer. Unfortunately, the *Intrepid* grounded on a reef in the Straits of Gaspar on March 31, 1860, when en route for New York, and she was attacked and burned by pirates. The *Black Hawk (II)* of 1,175 tons, also built by Webb for Bucklin & Crane, New York, in 1857 and described as a "moderate clipper with good-carrying, rather full lines and conservatively canvased," proved a fast, popular, and successful Cape Horner. She made twenty California voyages, which averaged only 124½ days on the westbound passage. When her then owners, George Howes & Company, retired from business in 1880, the *Black Hawk* was sold to the Germans for the North Atlantic trade. Her end is unknown, but she was at Baltimore in 1888, when thirty-one years old. Only two vessels, the *Young America* of 1,961 tons, built by Webb, and the *David Crockett* of 1,679 tons, built at Mystic, Conn., both in 1853, have a somewhat longer and better all-time record as Cape Horners than the much fuller-modeled and less canvased *Black Hawk (II).*

Whereas Donald McKay built no steam vessels and practically nothing but clippers (extreme, regular, and medium) from late 1850 to the Civil War, the rival builder, W. H. Webb, of New York, was much more versatile and the output of his drawing board and yard much more diversified and more in harmony with the time, which, while known as the clipper ship era, was also a transition period from sail to steam. Unfortunately, the Webb family records of the vessels that William H. built are incomplete, with known omissions and some duplications; ignoring the latter, the following shows the diversity of Webb's construction during the years 1850-1860 inclusive, but some vessels of which there is evidence that the master designed and built during this period are not included:

	Number of Vessels of the Various General Types Built Each Year							
Year	Clippers	Clipper Packets	Packets	General Traders	Brigs and Schooners	Total Sail	Steamers	Total Vessels
1850	1	1	—	2	—	4	2	6
1851	5	—	2	—	1	8	2	10
1852	2	1	—	1	2	6	2	8
1853	3	—	1	—	—	4	—	4
1854	—	1	4	1	—	6	1	7
1855	—	—	2	1	1	4	3	7
1856	3	—	2	1	—	6	3	9
1857	—	1	—	2	—	3	2	5
1858	—	—	—	—	—	—	2*	2
1859	—	—	—	—	—	—	2*	2
1860	—	—	1	—	2	3	—	3
Total 1850-1860	14	4	12	8	6	44	19	63

* A Russian steam screw corvette built in 1858 and a 5,000-ton steam frigate in 1859.

Donald McKay (1810-1880), the most publicized of the old American wood shipbuilders and, after 1850, a builder of clipper ships solely, was in the heyday of his career in the first half of the fifties, with Boston, Mass., as the scene of his operations. In 1867-1869, after relative inactivity for a decade, he built his last two square-riggers and retired from the field of wood shipbuilding, feeling most deeply the passing of the clipper and, to him, the fall of the sailing empire.

Donald McKay gained his shipbuilding experience by constructing sailing packets and general traders, but when installed in his own yard and financed by Enoch Train and his friends, McKay developed a "speed and big ships" mania. From that time on, throughout the period of his brief career, he was identified almost exclusively with the building of large and powerful clippers—probably the world's best in the realm of speed for certain trades but relatively poor carriers for their size, expensive to operate, and generally of short life. McKay clippers were fine vessels to meet the demands of the California Gold Rush and the British transportation requirements following the Australian gold find, but this period was of only a few years' duration, and after some three or four years of boom, in which shipping tonnage was greatly overbuilt but made good money in service for a short time, American clippers in large numbers floated idle in most ports of the world. Those operating made little, if any, money, and many degenerated into undesirable or illegitimate trades after the British and French demands for transport tonnage, brought about by the Crimean War and the Indian mutiny, terminated. After the depression and panic of 1856-1858, the American clipper ship was doomed; it was fast, but it did not carry enough cargo, and its operating cost per ton-mile was high. The Civil War, 1861-1865, completed the demoralization of the American mercantile marine that the depression of the last few years of the previous decade—caused by unwarranted expansion, building, and boom—had initiated. After the Civil War, American shipowners demanded ships of less fineness of model, and carrying less canvas, that would carry more paying cargo with smaller crews and less operating and maintenance expense and yet sailed fast. Donald McKay and other builders in Massachusetts, New York, and the South failed to design and build tonnage to meet the requirements of the period, and Maine gradually became the shipbuilding state of the Union, with the "Down Easter" supplanting the clipper and later the half clipper.

The name "Donald McKay" is synonymous with "big Yankee clipper," and of the thirty-one ships (the entire output of his yard except the topsail schooner *Benin* of 692 tons, built for Liverpool owners in the African trade, and four small 107-ton schooners for the Cape Cod fishing fleet) launched during the period following October 1850 to the fall of 1861, a period of about eleven years, all were designated by their designer-builder as clippers. Of these, thirteen were described as "extreme clippers," six as "clippers," and twelve as "medium clippers"; but the date of construction seems to have influenced the builder in his designation of type. All the thirteen ships launched by him following the transatlantic packet ship *Daniel Webster* in October 1850 to the end of 1853 (a period of three years and two months) he described as "extreme clippers" except the *Great Republic* (built toward the end of this period, when the enthusiasm of shipowners for extreme clippers was waning), which he rated as a "clipper," although she was sharper and carried a greater relative sail spread than the *Chariot of Fame* and *Star of Empire,* launched four and five months earlier and described as "extreme clippers." During 1854 and 1855, McKay launched ten ships. Four of these vessels, built for high speed, their builder classed as "clippers," and the other six, which had somewhat fuller models and carried less canvas, he designated as "medium clippers." However, the speedster *Lightning* was notorious for her concave forward lines, which were so conspicuous and criticized abroad that her owner permitted an attempt being made by mechanics to bolt and spike blocks of wood on the outside to fill out the extreme hollowness of the hull forward; yet McKay called this vessel a "clipper" and not an "extreme clipper." From early 1856 to the Civil War period, the seven deep-sea square-rigged ships that McKay built were all described by their builder as "medium clippers," but the *Henry Hill,* a 568-ton bark constructed for Boston owners, he rated as a "clipper."

Donald McKay built four big fast "clippers" for James Baines & Company, of Liverpool, in 1853-1855 (launched during the period of a year from January 1854 to January 1855), and he also sold the same British shipowner in 1854 two ships that he had built on speculation and that he described as "medium clippers." When McKay built the *Reindeer* of 806 tons in 1849, he rated her as a clipper, but as she proved disappointing in speed, she was later described by her designer and constructor merely as a "ship," and when the *Stag Hound* was launched on December 7, 1850, McKay proclaimed her to be his first clipper. The following is a list of the thirty full-rigged ships built by McKay from the fall of 1850 to 1861. During this period, he built no steam vessels, no vessels that he described as packets, general traders, or ordinary ships; the only other tonnage constructed consisted of a "clipper barque," a foreign trade topsail schooner, and four small fishing schooners.

Name of Ship	Builder's Desig-nation	Year Launched	Tonnage	Name of Ship	Builder's Desig-nation	Year Launched	Tonnage
STAG HOUND	Extreme clipper	1850 (Dec. 7)	1,534	JAMES BAINES	Clipper	1854 (July 25)	2,525
FLYING CLOUD	Extreme clipper	1851 (Apr. 15)	1,782	BLANCHE MOORE	Medium clipper	1854	1,787
STAFFORDSHIRE	Extreme clipper	1851 (June 17)	1,817	SANTA CLAUS	Medium clipper	1854 (Sept. 5)	1,256
NORTH AMERICA	Extreme clipper	1851 (Sept.)	1,464	COMMODORE PERRY	Medium clipper	1854	1,964
FLYING FISH	Extreme clipper	1851 (Sept.)	1,505	JAPAN	Medium clipper	1854	1,964
SOVEREIGN OF THE SEAS	Extreme clipper	1852 (July)	2,421	DONALD McKAY	Clipper	1855 (Jan.)	2,594
WESTWARD HO	Extreme clipper	1852 (Sept. 14)	1,650	ZEPHYR	Medium clipper	1855	1,184
BALD EAGLE	Extreme clipper	1852 (Nov. 25)	1,704	DEFENDER	Medium clipper	1855 (July 28)	1,413
EMPRESS OF THE SEAS	Extreme clipper	1853 (Jan. 14)	2,200	MASTIFF	Medium clipper	1856 (Feb.)	1,030
STAR OF EMPIRE	Extreme clipper	1853 (Apr.)	2,050	MINNEHAHA	Medium clipper	1856 (Mar. 22)	1,695
CHARIOT OF FAME	Extreme clipper	1853 (May)	2,050	AMOS LAWRENCE	Medium clipper	1856	1,396
GREAT REPUBLIC	Clipper	1853 (Sept. 4)	4,555	ABBOTT LAWRENCE	Medium clipper	1856	1,497
ROMANCE OF THE SEAS	Extreme clipper	1853 (Nov. 15)	1,782	BALTIC	Medium clipper	1856 (Oct.)	1,372
LIGHTNING	Clipper	1854 (Jan. 3)	2,083	ADRIATIC	Medium clipper	1856	1,327
CHAMPION OF THE SEAS	Clipper	1854 (Apr. 19)	2,447	ALHAMBRA	Medium clipper	1858 or 1859	1,097

The *Flying Cloud* of 1,782 tons (length 225 ft. on deck, beam 41 ft., depth 21.5 ft.), built for Enoch Train in 1851 by McKay, was the second clipper constructed by that famous builder and, up to that time, his largest vessel and the biggest clipper afloat. The *Flying Cloud* was a great ship as measured by speed performance and was known as the "greyhound" in the Cape Horn California trade. On her first voyage to the Golden Gate, this entry appears in her log for July 31, 1851: "Distance run this day by observation three hundred and seventy-four miles. During squalls eighteen knots of line were not sufficient to measure the rate of speed." Translated, this means an average speed of over 15½ knots an hour for twenty-four hours. Not until 1874 was an ocean-going steamer to attain a 15-knot speed. For four consecutive days, earlier in the voyage, this flyer and new speed queen averaged 13½ knots and for twenty-six consecutive days, 9⅜ knots per hour.

In 1852, McKay built on speculation, with money borrowed through the help of his great friend and backer, Enoch Train, the extreme clipper *Sovereign of the Seas,* the biggest ship of her day (2,421 tons; length on deck 245 ft., beam 44 ft., depth 23.5 ft.). The new vessel was sent around the Horn to San Francisco in nominal command of Donald McKay's brother Lauchlan, a practical builder who had some experience at sea as a carpenter (warrant officer, U.S.N.), and she "electrified the nation," it was said, with her fine performance under sail. Off the coast of Chile on her maiden voyage, the *Sovereign of the Seas* lost her fore- and main-topmasts, fore lower yard, and eight sails, but Lauchlan McKay completed repairs in fourteen days while continuing the voyage, and she entered the Golden Gate 103 days out from New York. Homeward bound the *Sovereign of the Seas* made a good run. She sailed from San Francisco to Honolulu light and there loaded 8,000 barrels of sperm oil and some bone for New York, being the pioneer vessel in transporting our American whalers' catch in the Pacific to an Atlantic home port. Sailing shorthanded, she cleared Honolulu on February 13, 1853. Captain McKay had occasion to display his ability to repair his ship on this homebound passage also, for on the 20th day at sea she sprung her fore-topmast, and although it was "fished" in a couple of days, that mast, with the main-topmast tender, was a source of anxiety for the remainder of the passage.

The speed actually made by the *Sovereign of the Seas* on this passage, when she encountered strong winds from the northwest in the Pacific as she headed for Cape Horn, has been the subject of much controversy. The figures of Donald McKay's brother (Lauchlan) have been distrusted, with cause, as he was a shipwright and not a competent navigator and shipmaster; moreover, he was naturally prejudiced, as the *"Sovereign"* was for sale, and McKay money was in the ship. Apparently, Lauchlan McKay introduced distance stated as statute, or land, miles into his statements instead of sticking to marine miles, but his log claims a day's run of 430 miles and a speed of 19 knots per hour for three successive hours. Lieutenant Maury, the greatest authority of the period, wrote that the *Sovereign of the Seas,* "from March 9 to 31 from 48° South in the Pacific to 35° South in the Atlantic, in 22 days made 5,391 nautical miles or 6,245 statute miles, averaging 283 statute miles per day. From noon to noon she made 362 nautical or 419 statute miles; she made slightly better than this by figuring out the direction and time, i.e., 374 nautical or 433 statute miles, a little better than the *Flying Cloud."* The *Sovereign of the Seas* arrived off Sandy Hook May 6, 1853, 82 days out from Honolulu—a record at that time. She sailed on June 18, 1853, for Liverpool and crossed in time stated as 13 days 19 hours and 13 days 23 hours; also "from the Banks of Newfoundland in 5 days 17 hours." In a week, she is said to have outsailed by 325 miles the Cunard steamer *Canada,* which left Boston on the day of the *"Sovereign's"* departure from New York. The *Canada's* best day's run for the passage was 306 miles; the *Sovereign of the Seas's,* 344. Upon arrival at Liverpool, the big McKay clipper was chartered by the British shipowner James Baines for his Australian Black Ball Line, and "Capt." Lauchlan McKay relinquished his command. The ship's chief officer, Warner, as Captain Warner, took the *"Sovereign"* on her voyage from Liverpool to Melbourne, making a run out in 78 days and returning in a reported 68 days.

United States shipowners refused to show any interest in the purchase of the *Sovereign of the Seas,* for she was considered too big for the available trades, far too expensive to operate, oversparred, and not of sufficient revenue-producing power (even when freight rates were quite high) considering the cost of running her. Surprisingly, James Baines, who was to have Donald McKay build for him four big clippers for the British-Australian (colonial) packet service, three of which were larger than the *"Sovereign,"* declined to purchase her; so McKay, being forced to get the vessel off his hands, sold her to the Germans at a reduced price. Whereas she proved to be a fast ship, she was never a money-maker after her first two voyages (and one of these was under charter).

The *Sovereign of the Seas's* fast passage of 82 days from Honolulu was bettered in a race between the *Contest,* of New York, and the *Northern Light,* of Boston, in early 1853. These clippers, in ballast, sailed from the Golden Gate, 2,100 miles farther from New York than the Hawaiian port. The *Northern Light* arrived off Boston Light in 76 days and 8 hours; the *Contest* was off Sandy Hook in 80 days and 8 hours. This record from San Francisco to Boston held throughout the entire era of sail, but the New York clipper *Comet,* the following year, reached New York in March 1854 after a passage of 76 days and 7 hours from San Francisco, anchor to anchor, which is the all-time record from the Golden City to any North Atlantic port. The clipper *Comet* was a Webb-built New York flyer that made numerous speed records. The British purchased her in early 1863 (during the Civil War), rechristened her the *Fiery Star,* and put her in the Australian packet service as a "colonial clipper liner."

The *Lightning,* built by McKay in East Boston for James Baines, of Liverpool, followed the *Sovereign of the Seas* and, on her maiden crossing from Boston to Liverpool, is credited with a run of 436 miles in the twenty-four hours ending March 1, 1854, a steady average of 18⅛ knots an hour—the second longest day's distance ever covered (or at least claimed) by a wind-propelled vessel. (The Maine-built clipper *Flying Scud* [1,713 tons; built 1853], on November 6, 1854, during an 80-day passage from New York to Melbourne, was reported to have covered 449 nautical miles in one day.) The following abstract from the log of the *Lightning* covering her wonderful day's run is of interest: "Wind, south. Strong gales; bore away for the North Channel; carried away the foretopsail and lost jib; hove the log several times and found the ship going through the water at the rate of 18 or 18½ knots; lee rail under water and rigging slack."

It was not until 1889, thirty-one years afterward, that an ocean-going merchant steamer exceeded that day's work. The *Lightning,* three years afterward, was to come within six miles of her own record, when, as an Australian Black Ball liner, running her easting down, she made 430 miles. The *James Baines,* on her delivery transatlantic passage from the McKay shipyard to her owner, James Baines, Liverpool, ran in 12 days and 6 hours from Boston Light to Rock Light, Liverpool; the *Donald McKay,* also on her delivery voyage, sailed from Boston to Cape Clear, Ireland, in 12 days, making a twenty-four-hour run of 421 miles. The *Lightning,* on her first voyage from Liverpool to Melbourne, made a run out of 77 days, but on her return passage she hung up the record of 63 days, making a run of 3,722 miles in ten consecutive days and doing 412 miles for her best day's work. On this voyage, she is reported to have carried five million dollars worth of gold.

The *James Baines,* sailing on December 9, 1854, in the British-Australian service, logged 420 nautical miles during a splendid 63-day run outbound. She sailed home to Liverpool in 69 days, thus circumnavigating the globe in 132 days at sea. An abstract from the log of this fast ship during an Australian passage in 1856 reads:

June 16th: At noon sighted a ship in the distance ahead; at 1 P.M. alongside her; at 2 P.M. out of sight astern. The *James Baines* was going 17 knots with main skysail set; the *Libertas,* for such was her name, was under double-reefed topsails.

June 17th: Lat. 44 S., Long. 106 E., ship going 21 knots with main skysail set.

During the Sepoy (Indian) mutiny, the *James Baines, Lightning,* and *Champion of the Seas* (all McKay-built clipper ships) were chartered as troop ships by the British Government. The *James Baines* and *Champion of the Seas* ran out to the Hooghly in 101 days; the *Lightning* in 87 days, beating the entire transport fleet, including a large number of auxiliary steam vessels.

The climax of Donald McKay's career as a shipbuilder was reached in 1853 with the construction of the *Great Republic,* designed by McKay to be "the biggest and the fleetest sailer the sea should ever know." This vessel was 305 ft. long on deck, 320 ft. over-all, with a 295-ft. keel; extreme beam 53 ft. and, as originally built, a depth of 39 ft. She was very heavily sparred and canvased. Her fore and main lower masts were each 3 ft. 8 in. in diameter; the mizzen 3 ft. 4 in. From the deck to the extremity of the skysail mast pole, the mainmast measured 205 ft. The main yard was 120 ft. long and 2 ft. 4 in. in diameter. The vessel was unlucky from the start, and McKay's idea to build such a mammoth wood vessel was not considered favorable by any shipowner—American or British—or any investor. McKay, being unable to get financial backing in such a venture, other than secured loans, put up his own money to an amount which actually represented his entire fortune. Old sea salts wagged their heads knowingly and foretold bad luck when Boston ladies were permitted "as a boost for temperance" to substitute Cochituate water for champagne at the christening.

The *Great Republic,* when finished, was towed from East Boston to New York to load cargo. On the night of December 26, 1853, she was burned at the loading dock before commencing her maiden voyage. When she was sold by the underwriters, McKay declined "to bid her in," so she was acquired by competent shipowners, who rebuilt her and promptly (1) reduced her colossal spar and sail plan and (2) eliminated the upper deck and reduced the depth of the vessel 7½ ft. The *Great Republic,* as rebuilt, measured 3,357 tons instead of 4,555 tons as originally, but even as cut down she remained the largest wood sailing ship for forty years, or until Arthur Sewall & Company, of Bath, Maine, built the *Roanoke,* which, like the *Great Republic,* was a four-masted shipentine (square-rigged on the fore, main, and mizzen and fore-and-aft-rigged on the spanker, or jigger, mast). On her first voyage, the ill-starred *Great Republic* crossed the Atlantic, it is said, in 12 days from land to land. She later made a fast run reported as 92 days around the Horn to San Francisco, and a day's run of 413 miles and a nineteen-hour run of 360 miles were claimed for this vessel. However, the *Great Republic* was constantly in trouble throughout her career. This mammoth clipper was not dimensioned to suit the sea trades, channels, and harbors available and proved to be a "white elephant" in operation. The *Great Republic* figured in litigation, had many changes of ownership, and after a turbulent and unprofitable career foundered in the Atlantic, off Bermuda, in early March 1872 after a sea life of seventeen years.

Whereas Donald McKay was an outstanding practical builder of large wood ships, he greatly lacked in balance and common sense in the realm of economics. His success in building large, fast ships in the boom years of the early fifties (when any builder and operator of floating tonnage could make money) and the plaudits of the crowd, particularly of Bostonians, went to his head. His building and sale of the *Sovereign of the Seas* resulted in a financial disappointment to him, and his loss when the new *Great Republic* was burned at New York before sailing ought to have chastened him and "brought him back to earth"; but his personal ego and senseless confidence in his star carried him on to greater heights of economic folly. While William H. Webb, of New York, who was a sound conservative businessman as well as a courageous designer and builder, operated in harmony with economic law, sensed conditions and the trend of the times, and lived through periods of depression and of great national stress to retire as a very wealthy man after a most useful and successful life, Donald McKay, with a sort of fanatical frenzy and a blind belief in his infallibility, drove straight ahead to his doom—with extravagance, poor judgment, and a defiance of the dictates of common sense and the laws of cause and effect and of compensation.

When James Baines & Company, of Liverpool, gave Donald McKay a contract to build four big, fast clippers for the Liverpool-Australian Black Ball Line and bought two large packet clippers that McKay had on the stocks and was building "on spec," thus relieving the Boston builder of possible pronounced losses and paying him good cash, McKay had an excellent opportunity to rehabilitate himself, plant his feet on solid ground, and get his business operating on sound economic principles. However, in March 1854, shortly after the burning of the *Great Republic,* McKay greatly enlarged his East Boston shipyard and invested large sums in plant, including a new 150-ft. steam saw, planing, and woodworking mill. Three months later, McKay announced his intention of establishing a line of fast transatlantic sailing packet ships and of operating four vessels in this service to be known as the "McKay Line," which were to ply between Europe and Boston and to be operated "with special reference to peopling Nebraska from the Continent of Europe." The keel of the first of this contemplated quartet of 2,000-ton packet clipper ships, the *Japan* (originally named *Great Tasmania*), had been laid in May 1854, and shortly afterwards work on a sister, the *Commodore Perry,* was commenced. Before the year end, McKay was fortunate to sell these two ships to James Baines, and McKay's project to own a transatlantic sailing packet line fell through, as he could get no financial support from hardheaded New England businessmen. In the spring of 1855, however, Donald McKay was again in the news with another grandiose scheme. He, with Train, Upton, Hall, and Beebe, incorporated the Boston and European Steamship Company, with an initial capital of half a million dollars, "for the purpose of navigating the ocean by steam." They announced a plan to build "a splendid line of Atlantic steamers rivalling in every respect the Collins Line of New York" and to operate them between Boston and Milford Haven (Britain). At a public meeting called to solicit financial backing held in Boston July 12, 1855, Donald McKay showed a model of a wood paddle-wheel steamer, which he called the *Cradle of Liberty* and which, he declared, "would cross the Atlantic in six days." The claims made by the enthusiastic designer and would-be builder were void of either engineering merit or economic sense, and no Bostonians would put their money into such "a crazy scheme."

After the completion of orders for James Baines & Company, McKay tried to keep his big yard going by building "on spec" a few vessels that no one wanted, and in September 1856 the great Boston shipbuilder failed. It was said at the time of suspension that McKay was really solvent, his assets being in excess of his liabilities by $145,000; but unfortunately he could not raise needed cash, as so many of his assets were frozen in plant, etc. However, additional liabilities of $115,000 soon came to light, and it was proven that McKay was insolvent and his creditors would lose heavily. McKay defended his shipbuilding activities and blamed others instead of himself for his financial collapse. He talked about "misplaced confidence" and "members of his own family having dug his grave," but the fact remains that McKay had no money sense, was extravagant and an egoist. Enoch Train, McKay's friend and backer, who was Boston's greatest shipping merchant (and at one time owned thirty vessels sailing out of Boston in the Atlantic trade), failed in 1857, and his business was taken over by Thayer & Warren, which later became the Warren Line of transatlantic steamers and flew the old Train house flag. The McKay yard was closed until 1859, when it opened to complete a 1,000-ton ship then on the stocks and build a diminutive schooner; however, Donald McKay was through as a shipbuilder of note, and his name lives among "the great" because of the big, fast vessels that he built in the years 1850-1855.

In later years, Donald McKay built two more square-rigged sailing ships. The first was the *Sovereign of the Seas II* of 1,502 tons gross and 1,443 tons net, launched in November 1868. She was extremely slow and, in 1884, was sold to the Germans. The second and the last ship built by McKay was the *Glory of the Seas* of 2,102 tons gross (2,009 tons net), which was launched in November 1869; this vessel, described by her builder as a "medium clipper," was a good sailer and a lucky ship. Her last voyage as a sailing vessel was made in 1907-1908, when she was about thirty-eight years old; she was burned for her metal at Puget Sound in May 1923. Most of McKay's clippers were short-lived, but his last two ships lived to a ripe old age. The *"Sovereign,"* after being converted to a coal barge, was lost off Barnegat in 1910, when forty-two years old; the *"Glory,"* after being stripped of spars and canvas, was used as a salmon packer tow barge and a floating refrigerator for a while and was fifty-three and a half years old when finally intentionally destroyed by fire for her metal.

In 1869, when McKay built his last square-rigged merchant ship, he also built his last fore-and-after, which, like the four schooners that he had constructed for the Cape Cod fishing fleet during 1858-1860, was a very small craft. This last of McKay's schooners was the *Frank Atwood* of 107 tons, and she obtained much publicity from the fact that she was used for carrying the notorious "Bill" Tweed of Tammany political fame on his "getaway" from New York to Cuba.

Donald McKay was born September 4, 1810, at Shelburne, Nova Scotia, the second of a family of eighteen children, among whom were his brothers Lauchlan, Hugh, David, John, Nathaniel, etc., who later followed him to Boston. After the building of the *Glory of the Seas* in 1869, McKay dabbled with repair work at East Boston, but in 1877 acquired and moved to a farm at Hamilton, Mass., where he died September 20, 1880, when seventy years old. McKay's life can be summarized by thirty-five years of struggle, eleven years of achievement "on his own," which included five years of outstanding fame, followed by twenty-four years of mediocrity and "living in the past and retirement."

The relatively short life of McKay's real clipper ships and medium clippers is indicated by the following record of all his ships built during the period 1850-1856 inclusive that qualify as either extreme or moderate clippers:

Name of Clipper	Years Built	Years End	Years Life	End
STAG HOUND	1850	1861	11	Burned off Pernambuco, Oct. 12, 1861.
FLYING CLOUD	1851	1874	23	Sold British, 1862. Wrecked Canadian coast, 1874.
FLYING FISH	1851	1858	7	Wrecked River Min, China, Nov. 23, 1858.
STAFFORD-SHIRE	1851	1853	2	Struck rock near Cape Sable on Dec. 25, 1853, and foundered.
BALD EAGLE	1852	1861	9	Left Hong Kong, Oct. 15, 1861, for San Francisco and "went missing."
SOVEREIGN OF THE SEAS	1852	1859	7	Sold Germans, 1854. Lost in Straits of Malacca, 1859.
WESTWARD HO	1852	1864	12	Sold Peruvians, 1857. Burned at Callao, Feb. 27, 1864.
CHARIOT OF FAME	1853	1873	20	Sold British, 1863. Disappeared from records.
EMPRESS OF THE SEAS	1853	1861	8	Burned at Port Phillip, Australia, Dec. 19, 1861.
GREAT REPUBLIC	1853	1872	19	Burned 1853 and rebuilt; sold British, 1866; foundered in No. Atlantic on Mar. 5, 1872.
ROMANCE OF THE SEAS	1853	1863	9	Sailed from Hong Kong Dec. 31, 1862, for San Francisco and "went missing."
STAR OF EMPIRE	1853	1856	3	Put into Algoa Bay on June 28, 1856, and condemned.
CHAMPION OF THE SEAS	1854	1876	22	Abandoned off Cape Horn, Jan. 3, 1876. (Built for British.)
JAMES BAINES	1854	1858	4	Burned at Liverpool on Apr. 22, 1858. (Built for British.)
LIGHT-NING	1854	1869	15	Burned at Melbourne on Oct. 31, 1869. (Built for British.)
SANTA CLAUS	1854	1863	9	Abandoned Aug. 9, 1863, in So. Atlantic in sinking condition.
DEFENDER	1855	1859	4	Lost on reef in So. Pacific, Feb. 27, 1859.
DONALD McKAY	1855	1881	26	Sold by British to Germans, 1879. Cut down to coal hulk in 1881. (Built for British.)
MASTIFF	1856	1859	3	Burned in No. Pacific on Sept. 10, 1859.
MINNE-HAHA	1856	1867	11	Wrecked at Baker's Island on Dec. 3, 1867.

Of these McKay clippers, only two out of twenty (or 10 per cent) can be said to have gradually worn out in service and finally reached the shipbreaker or bone yard. The *Donald McKay,* after being cut down to a coal hulk, gradually deteriorated to uselessness, but there is doubt as to whether the *Chariot of Fame* was laid up and sent to the shipbreaker prior to her absence from the 1874 register or whether she came to a tragic end. Of the twenty McKay real clippers, six (or 30 per cent) were burned, six (30 per cent) were wrecked, five (or 25 per cent) foundered at sea or "went missing," and three (or 15 per cent), it would seem, were condemned as unseaworthy—one when only three years old as the result of damages sustained at sea and the other two after a sea service of twenty and twenty-six years, respectively. The average life of the eighteen McKay clippers that, it is known, came to a tragic end was a scant ten years, and the sea life of the whole twenty clippers was slightly over eleven years, five ending their careers in from two to four years and eleven in from two to nine years.

Record Shipbuilding Years and the Clipper Ship Construction Boom—Big Freight Rates for American Clippers in Foreign Trade in the Early Fifties

With the annexation of California, quickly followed by the discovery of gold, the advent of the clippers, the opening up of the British tea trade, and the boom in Australia, the United States rapidly reached the zenith of its power as a maritime nation. The years 1852-1857 inclusive were the record American shipbuilding years, and building had enjoyed a boom since 1847, with 1848 an unusually high-volume year in both number and tonnage of ships built. The previous depression years in the industry were 1843, 1835, 1830, and 1820.

The following is a record of the number and tonnage of the merchant vessels—both sail and steam—built in the United States during each of the years 1846-1859 inclusive:

	Sail		Steam		Total			Sail		Steam		Total	
Year	No.	Tonnage	No.	Tonnage	No.	Tonnage	Year	No.	Tonnage	No.	Tonnage	No.	Tonnage
1846	1,195	141,844	225	46,359	1,420	188,203	1853	1,437	332,339	280	95,155	1,717	427,494
1847	1,400	193,403	197	50,230	1,597	243,633	1854	1,493	447,216	284	88,830	1,777	536,046
1848	1,676	265,549	175	52,526	1,851	318,075	1855	1,781	510,690	246	72,760	2,027	583,450
1849	1,339	213,970	215	43,018	1,554	256,988	1856	1,482	404,054	232	65,239	1,714	469,293
1850	1,225	227,997	197	51,258	1,422	279,255	1857	1,171	304,345	263	74,459	1,434	378,804
1851	1,123	221,146	245	78,326	1,368	299,472	1858	999	179,338	226	65,374	1,225	244,712
1852	1,184	269,822	268	85,534	1,452	355,356	1859	698	121,297	172	35,305	870	156,602

The booming year of 1853 was not without many ominous signs. In 1854 the national business depression was well under way, but shipbuilders ignored it, and in 1855, with liquidation fully developed, shipbuilding in the United States reached its peak and record high for the century. From 1850 to 1854, the United States had been "riding high," and in 1855 its registered foreign trade tonnage of 2,535,136 tons and total merchant marine tonnage of 5,212,001 tons were far greater than ever before (and twice that of some eight years earlier) and, outside of a very slight temporary increase in 1860-1861, were never exceeded in total tonnage throughout the entire nineteenth century. The United States foreign trade tonnage in 1900 (826,694 tons) was only 32.6 per cent of that of 1855 and 31.3 per cent of the registered tonnage as of June 30, 1861. During the latter part of the fifties, the American merchant fleet was as large as that of Britain in total tonnage; whereas in size, condition, speed, and general efficiency of its units, it was far in advance.

The following table shows the number and class of vessels of all types and the tonnage thereof built in the United States during the years 1815 to 1859 inclusive:

	Class of Vessels Built						
Year	Ships and Barks	Brigs	Schooners	Sloops and Canal Boats	Steamers	Total Number of Vessels Built	Total Tonnage
1815	136	224	680	284	5	1,329	155,579
1816	76	133	781	424	17	1,431	135,186
1817	34	90	559	394	10	1,087	87,626
1818	53	85	428	332	25	923	87,346
1819	53	82	473	240	28	876	86,670
1820	22	60	301	152	22	557	51,394
1821	43	89	248	127	12	519	57,275
1822	64	131	260	168	16	639	77,569

Continued on next page.

Year	Ships and Barks	Brigs	Schooners	Sloops and Canal Boats	Steamers	Total Number of Vessels Built	Total Tonnage
	Class of Vessels Built						
1823	55	127	260	165	23	630	75,857
1824	56	156	377	166	38	793	92,798
1825	56	197	538	168	41	1,000	116,464
1826	71	187	482	227	66	1,033	130,373
1827	58	135	464	242	52	951	106,456
1828	73	108	474	197	34	886	98,964
1829	44	68	484	145	55	796	79,408
1830	25	56	403	116	48	648	58,560
1831	72	95	416	94	35	712	85,556
1832	132	143	568	122	100	1,065	144,544
1833	144	169	624	185	65	1,187	161,492
1834	98	94	497	180	88	957	118,389
1835	43	55	391	164	72	725	75,107
1836	93	65	444	164	145	911	116,230
1837	67	72	507	168	158	972	125,913
1838	66	79	510	153	105	913	115,905
1839	83	89	439	124	164	899	125,260
1840	97	109	378	224	87	895	121,203
1841	114	102	319	150	108	793	123,660
1842	116	91	274	406	140	1,027	129,806
1843	58	34	138	174	79	483	63,888
1844	73	47	204	279	163	766	103,537
1845	124	87	322	342	163	1,038	146,042
1846	100	164	576	355	225	1,420	188,204
1847	151	168	689	392	197	1,597	243,633
1848	254	174	701	547	175	1,851	318,075
1849	198	148	623	370	215	1,554	256,988
1850	247	117	554	307	197	1,422	279,255
1851	211	65	522	325	245	1,368	299,472
1852	255	79	585	265	268	1,452	355,356
1853	270	95	681	391	280	1,717	427,494
1854	334	112	661	386	284	1,777	536,046
1855	381	126	605	669	246	2,027	583,450
1856	306	103	594	479	232	1,714	469,293
1857	251	58	504	358	263	1,434	378,804
1858	122	46	431	400	226	1,225	244,712
1859	89	28	297	284	172	870	156,602

An interesting official record of the marine tonnage of the United States, as of June 30, 1853, during the height of the clipper ship boom, is presented herewith:

	Tonnage
The registered vessels employed in the foreign trade	2,103,674
The enrolled vessels employed in the coasting trade	2,082,782
The enrolled vessels employed in the cod fishery	99,989
The enrolled vessels employed in the mackerel fishery	59,851
Vessels employed in the coasting trade under 20 tons	51,476
The licensed vessels under 20 tons in the cod fishery	9,238
The aggregate marine tonnage of the United States, June 30, 1853	4,407,010
Included in the registered vessels for foreign trade are 193,203 tons engaged in the whaling business.	
The amount of steam tonnage employed in foreign trade included in the registered tonnage, as above	90,520
The amount of steam tonnage included in the enrolled tonnage, as above, and employed in the coasting trade and on U.S.A. lakes and rivers	514,098
Total marine tonnage employed in steam navigation	604,618

	Tonnage
The increase of tonnage for the year ending June 30, 1853, was officially reported as 268,570 tons, and during the year there were sold to foreigners and removed from U.S.A. registry 17 ships, 4 brigs, 14 schooners, and 3 steamers, aggregating 10,035 tons.	
Reported marine tonnage condemned during year ending June 30, 1853	9,609
Reported marine tonnage lost at sea during year ending June 30, 1853	45,670
Reported marine tonnage built during the year 1853	427,494

A famous pair of clippers, destined to be known as "the most valiant of all Cape Horners" for a period of some thirty years, was launched in 1853, when McKay built his *Empress of the Seas, Star of Empire, Chariot of Fame, Great Republic,* and *Romance of the Seas* and commenced building his fleet of Yankee clippers for Baines and his British (Liverpool) Black Ball Line. These two vessels were the less heralded but long to be remembered *Young America,* built by W. H. Webb, New York, and *David Crockett,* built by Greenman & Company, Mystic, Conn. The year 1853 can well be called the zenith year of American shipbuilding—in quality, if not in volume—for in that year 120 ships designated as clippers were launched (97 from New England yards, 15 in New York waters, and 8 in the Maryland, Virginia, and Delaware regions), besides about a hundred vessels of a medium-full model and many other "old-fashioned carriers" known as "full-built ships." In this apex year are included the fast clipper *Red Jacket,* built by Thomas, of Rockland, Maine (to make sailing records in the British-Australian packet service), and the famous semi-clipper transatlantic packet *Dreadnought,* built by Currier, of Newburyport, Mass. The *Amphitrite* of 1,687 tons, constructed in 1853 by Samuel Hall, of East Boston, was bought from the builder by Richard Green, of London, the articulate champion of "British-built ships to dominate the seas," and the clipper *Mystery* of 1,155 tons, also built by Hall the same year, was bought by the British when she arrived in London on her maiden voyage. Among the host of great American clippers built in 1853, in addition to those already mentioned, were *Neptune's Car, David Brown, Panama, Sweepstakes, Herald of the Morning, Flying Scud,* etc. During what has been called "this annum mirabilus of American shipbuilding," the East River in New York, the East Boston shore from Jeffries Point to Chelsea Bridge, and usable shore sections in Connecticut, Massachusetts, Maine, and "well into Canada" showed a string of shipyards, and "the pleasing noise of saw, ax, adz, mallet, and hammer" could be heard.

The year 1850, with 24 real clippers constructed (including such truly great ships as the *Surprise, Sea Serpent, Witchcraft, White Squall, Game Cock, John Bertram, Stag Hound, Celestial,* etc.), really saw the commencement of what can be termed "the clipper shipbuilding boom" in the United States. This boom reached its profitable apex in 1853 and then rapidly subsided. Feverish boom days were followed in America by a liquidating and normalizing financial and business depression. Australia posed as a new and greater El Dorado, and Australia was British and Britain a great sea power. Gloom and the distress associated with adjustment and restoration of economic balance followed the California inflation. After 1853 the demand for ships gradually lessened, the peak of the boom was past, and 1856—with 40 fast vessels of the clipper type built, but of more moderate rig and fullness of model—was the last big construction year for American clipper ships. Too many ships had been built, a reaction set in, and the wave of unprecedented prosperity in the United States was definitely killed for all time by the 1857 financial depression in America and by international affairs and the domestic political conditions that divided and hamstrung the country and led to the Civil War of 1861-1865.

Excluding all ordinary seagoing and coasting sailing, all steamers and small craft, the following statistics show relatively the activity of American shipyards in the construction of clipper and reputed clipper ships (and, during the forties, of acknowledged and outstanding fast square-riggers, with big sail spread and relatively fine-lined models) for the American trade during the sixteen-year period 1844-1859 inclusive:

Period	Total: Number of Three-masted "Clipper" Type of Ships Built	Total: Tonnage	Average per Year: Number of Vessels Built	Average per Year: Tonnage
1844-1846 inclusive	16	8,756	5.3	2,919
1847-1849 inclusive	38	23,092	12.7	7,697
1850-1851 inclusive	78	79,049	39	39,524
1852	75	73,970	75	73,970
1853	120	149,504	120	149,504
1854	71	85,852	71	85,852
1855-1856 inclusive	82	93,473	41	46,736
1857-1859 inclusive	19	17,687	6.3	5,896

The United States in the fifties shared more than any other nation in the most desirable and profitable commerce of the world. Compared with the ships of the United States, the British vessels of presumably the same general class built around mid-century and for long years prior thereto were heavy, inferior, and slow. They would not carry anywhere near as much cargo even on a basis of per ton register, and "per bottom" the odds were all in favor of the larger and handier American-built ships. In the matter of speed, a Yankee merchantman would make in the same trade from 25 to 35 per cent more voyages per year than a British ship.

As to freights, the ships flying the United States flag after the late forties had the excellent California business all to themselves, this being a coastwise and protected trade; while over most trade routes to Britain the rates for freight were greatly in their favor as compared with those obtained by the slower, smaller, and less efficient British ships, which were handled in an old-fashioned, traditional, and inferior manner. In the Britain-China tea trade, even British merchants paid premiums to United States clipper ships to carry cargoes of tea from China ports to London. In the fall of 1850, British merchants in Hong Kong paid the early American clipper *Oriental* (1,003 tons; built in 1849) £6 sterling per ton of 40 cubic feet to take a full cargo of tea to London when the prevailing rate of freight for British ships lying in the harbor was £3½ per ton of 50 cubic feet; the rate paid to the first American clipper that carried China tea to the English market was, therefore, 2.14 times per cubic foot that offered by and being paid the best British ships of the period. London merchants, upon the arrival of a fast American clipper in England, bid high in competition with each other to get the vessel's services to carry cargoes for them in both the China and other foreign trades covering the coming year.

A year after the *Oriental* sailed from Hong Kong (August 1850) for England and made the pioneer China-Britain tea passage of an American clipper (for which, we are told, the ship received "about $48,000 in freight money," or about 70 per cent of her original total cost ready for sea), the clipper ship *White Squall* of 1,119 tons, built in 1850 by Bell, of New York, on her maiden voyage around the world via Cape Horn, San Francisco, China, and London, sailed from Whampoa (Hong Kong) September 5, 1851, for England with a tea cargo, from which the ship obtained a freight revenue of $58,000 (or about $10,000 more than the *Oriental* received on her pioneer run in the trade). The *White Squall* was in a bad typhoon in the China Sea, was at anchor two days off Anjer, and lost her main-topmast in gales off Madagascar, but arrived in the Downs (London) 104 days from Whampoa, making the fastest passage of that season. Her commander wrote from London: "Our teas were discharged in fine order, which fact and our general appearance [after a stormy passage] has caused great excitement here. It is conceded that the *White Squall* bears off the palm and is the finest ship that ever entered this port."

It was not only in the China-Britain tea trade that American clippers were in demand and not only the cream of the Yankee clippers that commanded high freight rates in British trade. The Newburyport-built clipper packet *Racer* (1,669 tons), designed for the New York-

Liverpool packet service, arrived at London December 13, 1853, after a long passage in very unfavorable weather from Shanghai. She had proved herself to be a good sea boat, and, being a Yankee clipper of sorts, she was presumed to be fast (possibly due in part to her name); so, we are told, "her agents, in England, were not long in negotiating one of the heaviest charters ever recorded in Europe up to that time, being £10,000 from London to Sydney and £8,000 for the return from Calcutta to London." When the *Sovereign of the Seas* (2,421 tons) sailed from Liverpool for Melbourne in September 1853, her charterers (James Baines & Company—the Black Ball Line) boldly advertised: "Freight £7 per ton for Melbourne; £2 per ton to be returned if the *'Sovereign'* does not make a faster passage [port to port] than any steamer on the berth." It is said that the big Yankee clipper carried out a cargo valued at a million dollars. While her run out was not fast for an American-built extreme clipper, "she beat everything that sailed about the same time" and, on a good return run, beat the steamer *Harbinger* by four days and all competitive sailing craft that left port about the same time by from fifteen to twenty days.

International Events Affect Shipping on the Seven Seas

The finding of gold in California in 1848 caused an unprecedented travel and trade boom. The news took long months to reach the East, but all available ships were soon in the service, and then began the demand on eastern shipyards for tonnage. Gradually, the call developed for bigger and faster ships, freight rates "soared to the heavens," the Atlantic coast line became dotted with new shipyards, and heavy premiums were paid by owners for rapid construction so that advantage might be taken of the unprecedented, high rates for carrying both passengers and freight to the world's most rapidly growing city of San Francisco. The repeal in 1849 of the exclusive British Navigation Acts as they concerned foreign trade was an important international event affecting deep-sea carriers, and United States clippers obtained the cream not only of the China but also of the Indian, Australian, and other British Empire trades. Excellent, fast Yankee sailers had been conspicuous leaders in China tea voyages since 1845, and this trade reached its zenith in 1855, when it is known that at least twenty-four American ships were engaged in carrying tea to Britain. Prior to the late forties, there had been built in the United States many small sailing vessels that had made reputations for themselves, both for speed and reliability, in the oriental and other trades (some of an illegitimate nature) where fast sailers rather than big carriers were required, and many of these little ships were fast enough to be popularly termed "clippers."

The United States was the pioneer in the building of fine-lined, heavily canvased, and loftily sparred fast sailing ships of the real "clipper" type. Whereas Britain built one vessel of this type in each of the three years 1850-1852 inclusive and none prior thereto, the United States (which had launched the famous so-called clipper *Rainbow* in January 1845 and the phenomenal record-maker *Sea Witch* in December 1846) built 54 fast vessels of this general type prior to 1850 and 153 real clippers in the three years 1850-1852 inclusive, 120 in the one year of 1853, and 172 during the remaining six years of the clipper ship decade. A host of wood shipbuilders, with yards spread generally on the Atlantic Coast line from Virginia to Maine, built wooden clipper ships during the first part of the fifties, when "speed was king"; but it is significant that Donald McKay's first real "out-and-out" clipper, the *Stag Hound,* was launched in Boston, Mass., December 7, 1850, and his last advertised real extreme American-owned clipper, the *Romance of the Seas,* was launched only three years later on November 15, 1853. The famous quartet of big clipper ships built by Donald McKay for the British for their Australian (colonial) run was constructed in 1853-1855, and by 1857, only seven years after the building of his first clipper, the great McKay's career as an outstanding builder of distinctive, fast sailing ships had practically terminated.

Early American-built clippers or so-called clipper packets built for the China trade were relatively small, but with the gold find in California and the probable demand for fast tonnage for the Cape Horn run to the Golden City, larger ships were projected; clippers of 1,000 tons were average size of this type in 1850, and in 1851 some clippers of from 1,500 to 2,000 tons were built. Ships of this size were obviously large for the China tea trade, but were of a suitable and profitable size for Cape Horners and, it was felt, could be used with success on most of the trade routes on the Seven Seas. Unfortunately, the California trade, as far as the carrying of freight and passengers was concerned, was one-way traffic. The vessels carried a pay load outbound, or westward, from East Coast U. S. A. ports around the Horn to San Francisco, but could get no cargo of any kind or passengers in any part of western North America for the direct return passage. In looking for return cargoes, American clippers for several years generally crossed the Pacific from San Francisco and picked up cargoes in China and later at Manila or India ports for the last stage of their homeward passage and, at times, carried oriental and Indian goods to England.

During the California Gold Rush boom, American shipowners overbuilt, and the tonnage ordered was of an unprecedented type of high-speed, sharp-modeled, heavily canvased ships, generally of relatively large size, which required big crews to handle, were expensive in maintenance expenses, and carried relatively small pay loads for their registered tonnage. It soon developed that the floating deep-sea tonnage of the United States was far in excess of national requirements, and the exports and imports of the country could not possibly keep such a large fleet in service; hence the necessity for United States clippers to develop foreign trade markets if they were to continue in operation. The big California demand for emigrants and supplies lessened after about three years of a tremendous amount of business and unprecedentedly high freight rates and revenue from passages. The California market became saturated with goods, freight rates fell, and while big new vessels were being built in eastern yards, primarily with a profitable westward Cape Horn run in mind, and while goods were being shipped from East Coast ports to California, there are records showing that Yankee clippers actually loaded some cargo in San Francisco and returned to the East with it because of the glutted condition of the California market. The Australian gold boom trade, like that of California, was one-way traffic for many long years, and ships in the Australia as well as the California trade looked to China, the East Indies, and India for cargoes to make at least part of their return passage profitable, unless they were willing to follow the packet ship route and sail to England from Australia around Cape Horn and to carry no freight, whatever gold was available, and occasionally a very few passengers.

The tremendous volume of newly built American clipper ship tonnage became too large to handle the cargoes available for transport in the Far East and India not only to the United States but also to Britain and elsewhere. Freight charges fell, and ships competed with each other in oriental and Indian ports, bidding and waiting for cargoes or sailing around in ballast seeking to find a cargo. It was not until well into the sixties that California and Australia had developed sufficiently to produce goods for export, but gradually California became a noted grain country, and in the seventies San Francisco was the world's greatest wheat exporting port. In still later years, as the importance of the United States Pacific Northwest in the world's wheat trade waned, it became highly conspicuous as an exporter of lumber and timber products. Australia, in the meanwhile, gradually built up an export business in wool, tallow, etc., and the era of the Australian "wool clipper" was a prosperous one for British iron ships; this was followed by heavy wheat exports, and the last of the world's square-riggers, when on their "last legs," sailed in this trade.

As early as 1850, some of the first real American clippers sailed in the China-United States tea and oriental goods trade by making an outbound passage around the Horn to California, crossing the Pacific from San Francisco to Hong Kong in ballast, and sailing home from there on the last lap of their voyage—traveling to the westward around the world—with a profitable cargo that competed in the American market with the tea and goods brought home by the United States ships directly engaged in the China (Cape of Good Hope) trade. For a few years, the most desirable route in the East Coast U. S. A.-Pacific Coast (California) trade was a direct run out to San Francisco via Cape Horn; thence across the Pacific in ballast to a China port, Manila, or an Indian port, and home via the Cape of Good Hope. As the United States market became saturated with oriental products and when the British merchants offered high freights to fast American-built ships, it was but natural that Yankee clippers were glad to take a good paying cargo from any port in the Orient (or India) to Britain and then either make a voyage or a passage from there to the East via the Cape of Good Hope or else complete their voyage by a transatlantic crossing in ballast from Britain to their home (U.S.A.) port.

The following is a list of real United States clippers (including medium clippers) that, it is known from British records, participated in the Britain-China tea trade during the years 1850-1860 inclusive, following the letting down of the bars by Britain to foreign ships. A fleet of fast American sailing ships and early so-called clippers is not considered in this analysis as clippers. Of eight American ships that engaged in this trade and sailed from China in 1850, only one, the *Oriental,* is herein classed as a clipper; in 1851, only four out of eighteen sailings from China to England with tea are considered as clipper ship passages, and during the following nine years the relation of American clippers to ordinary fast sailers and pre-clippers in this trade is set forth herewith:

Year of Departure	Clippers	Fast Sailers	Total	Year of Departure	Clippers	Fast Sailers	Total	Year of Departure	Clippers	Fast Sailers	Total
1852	9	9	18	1855	21	3	24	1858	2	—	2
1853	11	9	20	1856	9	3	12	1859	10	2	12
1854	12	2	14	1857	8	—	8	1860	2	2	4

A list of United States clippers that are known to have made passages in the China-to-Britain tea trade, with arrivals in England during the years 1850-1860 inclusive, is presented herewith:

Name of Clipper	Year Built	Tonnage
ARCHITECT	1848	520
ORIENTAL	1849	1,003
CELESTIAL	1850	860
WHITE SQUALL	1850	1,119
SURPRISE	1850	1,261
RACE HORSE (bark)	1850	530
JOHN BERTRAM	1850	1,080
ECLIPSE	1850	1,223
STAG HOUND	1850	1,534
SEA SERPENT	1850	1,402
WITCH OF THE WAVE	1851	1,498
TELEGRAPH	1851	1,069
NIGHTINGALE	1851	1,066
CHALLENGE	1851	2,006
INVINCIBLE	1851	1,769
RACER	1851	1,669
TYPHOON	1851	1,611
SNOW SQUALL	1851	743
GOLDEN GATE	1851	1,341
ROEBUCK	1851	815
WILD PIGEON	1851	996
EUREKA	1851	1,041
JOHN WADE	1851	639
FLYING CLOUD	1851	1,782
FLYING CHILDERS	1852	1,125
FLYING DUTCHMAN	1852	1,257
ONWARD	1852	874
QUEEN OF THE EAST	1852	1,275
ARCHER	1852	1,096
SOVEREIGN OF THE SEAS	1852	2,421
GOLDEN CITY	1852	810
BALD EAGLE	1852	1,704
ALBONI	1852	917
GOLDEN STATE	1853	1,363
MYSTERY	1853	1,155
RESOLUTE	1853	787
ROMANCE OF THE SEAS	1853	1,782
GRAVINA	1853	818
DAVID BROWN	1853	1,715
EAGLE WING	1853	1,174
LIGHTFOOT	1853	1,996
ORACLE	1853	1,196
RAPID	1853	1,115
STORM KING	1853	1,400
FRIGATE BIRD	1853	567
SPITFIRE	1853	1,520
DON QUIXOTE	1853	1,429
SPARKLING WAVE	1853	665
NEPTUNE'S CAR	1853	1,616
KINGFISHER	1853	1,286
SNAPDRAGON	1853	619
CHALLENGER	1853	1,334
RINGLEADER	1853	1,157
BONITA	1853	1,127
COMPETITOR	1853	871
NORTH WIND	1853	1,041
NABOB	1854	1,246
NEPTUNE'S FAVORITE	1854	1,347
SWALLOW	1854	1,435
GALATEA	1854	1,041
GRACE DARLING	1854	1,197
CHARMER	1854	1,055
CRYSTAL PALACE	1854	653
MAURY (bark)	1855	594
FAIRY (barkentine)	1856	629
FLORENCE	1856	1,045

True clippers (extreme, or "out-and-out," clippers) predominated in this trade in the mid-fifties, but too many United States ships appeared in China wanting return cargoes for their Pacific-to-Atlantic passages, and the tonnage of available bottoms to carry the cargoes to be handled greatly exceeded the volume of goods requiring transport. During the last half of the fifties, as a result of competition, the oversupply of ships, and the storage and stocks of tea in England, the Britain-China tea trade became as unprofitable to American clippers as it had become irritating and unpleasant. In the late fifties, large United States clippers avoided the Britain-China tea trade, and the American vessels participating in it were small and fuller-modeled medium, or half, clippers. However, such United States-built vessels as the bark *Maury* (594 tons), the barkentine *Fairy* (629 tons), and the ship *Florence* (1,045 tons) made fast passages in the trade and were speedy enough to hold their own or outsail, at times, the few heavily canvased British-built racing machines, with their sharp models, that the British had constructed for this trade. Of the list of American clippers herein set forth, the years of construction of the sixty-six vessels enumerated that are known to have participated in the China-to-England tea trade were as follows:

Year Built	Number of Vessels	Year Built	Number of Vessels	Year Built	Number of Vessels
1848	1	1851	14	1854	7
1849	1	1852	9	1855	1
1850	8	1853	23	1856	2

It is significant that only sixteen clippers were built in Britain during this period (1848-1859 inclusive) and that all were constructed especially for the China tea trade and to compete in the annual "tea races" from China to England. None was constructed in Britain prior to the building of the *Stornoway* in 1850 and the *Chrysolite* in 1851. The record of the building of real clippers in Britain during the fifties shows a pathetically small number of clippers constructed, and these were of a rather uniformly small tonnage, as the following figures clearly show:

Year	No. of Clippers Built	Total Tonnage	Largest Clipper	Year	No. of Clippers Built	Total Tonnage	Largest Clipper
1850	1	506	STORNOWAY 506	1855	2	1,364	FIERY CROSS (I) 788
1851	1	471	CHRYSOLITE 471	1856	2	1,804	LAMMERMUIR 952
1852	1	699	CHALLENGE 699	1857	1	662	FRIAR TUCK 662
1853	4	3,528	CAIRNGORM 938	1858	2	1,082	ELLEN RODGERS 585
1854	1	878	SPIRIT OF THE AGE 878	1859	1	794	FALCON 794
Total, 5-year period	8	6,082	Average 760 tons	Total, 5-year period	8	5,706	Average 713 tons

The total number of real clippers built in Britain during the ten-year period 1850-1859 inclusive was 16 vessels aggregating 11,788 tons—all ship-rigged and all constructed for the China trade. The average tonnage of these British clippers was 736 tons. During the same decade, there were built in the United States 445 clipper ships of 499,535 tons (an average of 1,123 tons per ship). This is equivalent to 28 times as many ships, of 42.4 times as much tonnage, of the clipper ship type built in the United States during the period 1850-1859 inclusive as were constructed in Britain.

In the early fifties, "Yankee ships unquestionably and admittedly led the world for speed"; moreover, their size—greater than that of ships of any other nation—proved appealing to many shippers and travelers. Gold was found in Australia in 1851, and in Britain, during the Australian boom, the clippers of New England were in great demand, for "their speed performances were unequaled and amazing." At this time, British vessels cost about fifteen pounds per ton and American ships built of generally similar woods only about twelve pounds per ton. The need for tonnage was urgent throughout the world at mid-century, and American shipbuilding boomed. During the forties and fifties, not only were Yankee ships superior in model design to the vessels built by all other countries, but also there was positively no comparison either in the hulls or in the cut, arrangement, and utilization of canvas, and the rigging and running gear used on American vessels permitted their operation with fewer men than were required on the smaller, slower, and more clumsily rigged British ships.

The rush to Australia for gold closely followed that to California, and the Australian gold boom was at its height in 1852-1857. During this five-year period, one hundred thousand English, sixty thousand Irish, fifty thousand Scotch, twenty-five thousand Chinese, eight thousand German, four thousand Welsh, and three thousand American adventurers and large numbers from many other countries poured into Australia through Melbourne. It has been truly said that "gold made the Australian clipper"; during the years 1851-1860, more than twenty-three million ounces of gold were shipped out of Victoria—most of it by American-built clipper packets of regular British lines.

The following is a list of United States-built clippers that were acquired by British shipowners for service in the British-Australian (colonial) sailing packet lines (Black Ball, White Star, etc.). Seven of these ships were taken from the builders (four being constructed under order). The remaining seventeen vessels were purchased by the British (generally at auction in London or Liverpool), the great majority during the Civil War years of the early sixties, when the vessels averaged about nine years old. Such purchases by the British contributed much to what became known in America as "the flight from the flag."

Name of Clipper	Year Built	Tonnage
LIGHTNING	1854	2,083
CHAMPION OF THE SEAS	1854	2,447
JAMES BAINES	1854	2,515
DONALD McKAY	1855	2,598
RED JACKET	1853	2,305
BLUE JACKET	1854	1,790
OCEAN CHIEF	1854	1,228
CHARIOT OF FAME	1853	2,050
EMPRESS OF THE SEAS	1853	2,197
NEPTUNE'S CAR	1853	1,616
SIERRA NEVADA (ROYAL DANE)	1854	1,942
COMET (FIERY STAR)	1851	1,836
FLYING CLOUD	1851	1,782
WHIRLWIND	1852	961
WIZARD (QUEEN OF THE COLONIES)	1853	1,601
BELLE OF THE SEA (STRATH-PEFFER)	1857	1,255
OCEAN TELE-GRAPH (LIGHT BRIGADE)	1854	1,495
BLACK WARRIOR (CITY OF MELBOURNE)	1853	1,828
FLYING CHILD-ERS (GOLDEN SOUTH)	1852	1,125
GAUNTLET (SUNDA)	1853	1,854
MORNING LIGHT (I) (QUEEN OF THE SOUTH)	1853	1,589
MORNING STAR (LANDS-BOROUGH)	1853	1,105
RED ROVER (YOUNG AUSTRALIA)	1852	1,021
TORNADO	1852	1,802

In addition to the above-mentioned four large clippers *(Lightning, Champion of the Seas, James Baines,* and *Donald McKay)* built by Donald McKay for James Baines & Company (Black Ball Line of British-Australian packets), McKay sold to Baines two packets of a stated "medium clipper packet model and rig," which McKay was constructing in his East Boston yard for service in what he said would be the "McKay Trans-Atlantic Packet Line." These vessels were each of 1,964 tons (length 212 ft., beam 45 ft., depth 29 ft.) and were named *Commodore Perry* and *Japan.* With the purchase of these two Yankee-built packets, Baines acquired from McKay, of East Boston, in 1854-1855 (in addition to other outside purchases) six large new sailing vessels for the British-Australian trade that aggregated over 13,570 registered tons.

All the vessels enumerated above were clippers, but the United States transatlantic packet *James A. Westervelt* of 1,418 tons, built in 1849, was acquired by the British for their Australian trade and renamed *Southern Empire.* Many of the United States-built clippers bought by the British in the early sixties had operated with others in the British-Australian trade under charter in earlier years. Among the well-known American clippers chartered for British-Australian voyages were the *Sovereign of the Seas* (2,421 tons; built in 1853), which made a voyage for the Liverpool-Melbourne Black Ball Line in 1853-1854; the *Invincible* (1,769 tons; built in 1851), which sailed in the British-Australian White Star Line for about five years in the fifties; and the *Titan* (1,985 tons; built in 1855), which was chartered by the White Star Line in the late fifties and went out to Melbourne from Liverpool with 1,030 passengers and a large cargo in her holds. The *Titan* was described by the London TIMES in 1857 as "the largest and finest clipper in the world." A large number of other American clippers were chartered by British merchants for voyages in the British-Australian trade. Among these was the *Governor Morton,* a clipper packet type of ship of 1,430 tons, built in 1851; this vessel went from London to Melbourne in 1856-1857 and from London to Sydney in 1857-1858.

The demand for larger and more ships in the British-Australian trade caused a boom in Canadian shipbuilding, and the New Brunswick and Quebec yards built large numbers of sizable fast ships "on spec" (generally copied as to model and rig after United States-built clippers and medium clippers) and sent them across the Atlantic for sale. At first, they were bought cheap by the British, but later fetched fair prices because of the good record made by the New Brunswick-launched *Marco Polo* of 1,625 tons, built in 1851. James Baines picked up this ship "for a song" in Liverpool because, notwithstanding her good underwater lines, she was such an ugly-looking box-like craft above water; but after a good round voyage to Australia under Capt. "Bully" Forbes (of "Hell or Melbourne" fame), he boldly advertised her as "the fastest ship in the world." The British shipowner much preferred to buy Canadian- rather than United States-built ships, and this for two reasons: (1) they were cheaper, and (2) they were built in the British Empire. Big floating tonnage was greatly needed in Britain following the opening up of the Australian emigrant trade, and as British yards could not build big wood ships, the English shipowners acquired a large fleet of sizable and reasonably fast wood ships from "the Dominion overseas"; some of these vessels were good, but many were of mediocre quality. However, the British owners apparently got "just about all they paid for," and Canadian-built ships were much below the standard of United States-built clippers in both design and quality of construction. Among the so-called clippers built in Canada that were acquired by British shipowners for their Australian colonial packet lines can be mentioned the following:

Name	Built	Tonnage	Name	Built	Tonnage
MARCO POLO	1851	1,625	MORNING STAR	1854	1,534
GUIDING STAR	1852	....	MORNING LIGHT	1855	2,377
BEN NEVIS	1852	1,420	FLORENCE NIGHTINGALE	1855	1,362
STAR OF THE EAST	1853	1,219	ELIZABETH ANN BRIGHT	1856	1,920
INDIAN QUEEN	1853	1,041	BLUE JACKET (II)	1858	986
SALDANHA	1853	1,257	PRINCE OF THE SEAS	1858	1,316
MILES BARTON	1853	963	DAWN OF HOPE	1859	1,215
WHITE STAR	1854	2,339	MISTRESS OF THE SEAS	1861	1,740

There was also the Canadian-built clipper *Golden Age* of average size and speed, which actually claimed to have sailed "22 knots an hour," with a powerful current as well as wind and sea—to say nothing of an enthusiastic observer and commander—to help her. The Liverpool-Australia White Star Line was partial to Canadian-built clippers because of their cheapness and the fact that the vessels bought could be selected from the many offered, all of which seem to have been built "on spec" for the British market. The crowned queen of the White Star Line, however, was the United States-built clipper *Red Jacket* (2,305 tons), built in 1853 at Rockland, Maine, and for speed, reliability, and uniformity of performance, comfort and beauty, this craft, designed by "young Pook of Boston," was proclaimed in Liverpool and Melbourne to be "the finest vessel afloat." Another sizable Nova Scotia-built clipper, the *Mermaid* of the Black Ball Line, claimed high speed, but in 1854, after gaining a four-day sailing advantage over the *Red Jacket* (because of the course set and flukey winds in the run from the Mersey to the Cape of Good Hope), was "soundly trounced" by the Yankee clipper to the tune of nine days in the run from the cape to Melbourne, where strong, steady winds prevailed. Among the smaller vessels built in Canada and used in the Australian trade were such craft as the *Conway, Wansfell, Utopia,* and *David MacIver,* which sailed in the Queenstown emigrant trade.

Notwithstanding the large amount of United States-built tonnage bought by Britain during the American depression and Civil War, the following Canadian-built reputed medium clippers, constructed in the early sixties, were acquired—among others—by British sailing packet lines for their Australian (colonial) trade: *Empress of the Seas (II)* of 1,243 tons, *Legion of Honor* of 1,219 tons, *Southern Empire (II)* of 1,142 tons, *Palm Tree* of 1,473 tons, etc.

The British built a few moderate-sized wood ships for their Australian trade, of which one of the biggest and best was the *Oliver Lang* of 1,236 tons, constructed at the Deptford yard. This ship is credited with running out to Melbourne from Liverpool in 87 days in 1855 and returning in 76 days, which the British press heralded as "magnificent sailing." The *Red Jacket,* just before this time, had run out in 67 days and, after the *"Lang's"* passage, went out in 75 days (or twenty-one and twelve days less, respectively), and out of twenty-five recorded fast outward British passages from Liverpool to Melbourne during 1854-1855, only two were longer than the passage of the *Oliver Lang.* Returning, the British ship enjoyed admittedly "very favorable sailing conditions" and made a very good passage, but she was beaten seven days by the *James Baines* and did not make as good a run home as the Canadian-built *Shalimar.* On the next passage out to Australia, the *Oliver Lang* was beaten eighteen days by the Yankee-built *Lightning,* and other United States clippers that defeated her decisively were the *Ocean Chief* (twelve days) and *James Baines* (nine days). Among the Canadian-built ships that made better time on the 1856 run out from Liverpool to Melbourne were the *Morning Light* and *White Star.* The only large wood clipper to be built in Britain, the *Schomberg* of 2,284 tons (constructed without regard to cost to "beat the Yankees" by Hall, of Aberdeen, Britain's greatest builder of fast vessels), sailed from Liverpool on October 6, 1855, with Capt. "Bully" Forbes, commodore of the Black Ball Line in command, with a banner flying that displayed the proud boast, "Sixty days to Melbourne." A Yankee-built clipper had completed in February a passage out in 63 days, and the British were sure that their big new clipper would "sail rings around any American ship." The *Schomberg* proved to be a bitter disappointment to her captain, officers, crew, and passengers; she could not sail like the American clippers and was declared to be cumbersome, unhandy, unbalanced, and slow by Captain Forbes. She never reached her port of destination, but when 82½ days out grounded on an uncharted shoal as she approached the Australian coast and the much-heralded, strongly built ship soon "went to pieces." After the *Schomberg* experience, the British attempted to build no more big wood merchant vessels, but were content to buy and use United States- and Canadian-built wood ships while they experimented in the sixties with iron hulls built in British yards.

The British-Australian trade, for many years and throughout the fifties, was of tremendous proportions. During this period and the years of the Civil War, all the big wood ships engaged in it were American-built, and the best as well as the most of them were constructed in the United States. After 1855, James Baines did not place orders with Donald McKay or any other American yard to build ships for him and his Black Ball Australian line, for not only did British prejudice frown upon any Britisher's giving business to a United States shipyard but also the price of American ships already afloat was very low, ships were being offered at sacrifice prices because of the business depression, and Baines could buy ships very much cheaper than he could build them in any yard. An idea of the amount of shipping tonnage engaged in the British-Australian trade at the close of the fifties and before big purchases of Yankee clippers were made for that trade in the Civil War years can be gleaned from the statement made public in early 1860 that at that time James Baines (and the Black Ball Line) "possesses 86 ships, which give employment to 300 British officers and 3,000 men." In the fifties, James Baines, of Liverpool, was a successful merchant and shipowner and a very rich man, but he commenced to wane in power and decline in wealth in the early sixties. Some historians say that the cause of his downfall was his great purchases of big American clippers; however, it would seem that Baines lost a great deal of money in his support of steam navigation (he was a stockholder in the unfortunate and costly steam leviathan *Great Eastern,* built for the Australian trade), and the losses of his steamship line and investments in steam vessels, added to the collapse of a bank in which he had funds and was heavily interested, drove him into bankruptcy. James Baines, forsaken by all his one-time friends and business associates, died alone in a cheap Liverpool lodging house in 1889, when he was sixty-six years old.

United States-built clippers made many passages in the British-Indian trade during the fifties, and during the depression and the Civil War British owners bought at low "sacrifice" prices many American-built clippers for the Indian as well as the Australian trade. There are records of twenty-four passages of Yankee clippers between British and Indian ports during the years 1852-1861, and twenty of these were made in the period 1854-1858. At least thirty-two United States-built clippers made passages from India to England during the years 1854-1863, and twenty-six of these were made in the period 1854-1857. As early as 1854, upon arrival at London with tea from China after one Cape Horn voyage, the new Yankee clipper *Mystery* (1,155 tons), built in 1853 by Hall, East Boston, was bought by the British for their Indian trade (purchase price £17,000), and in June 1854 she sailed from Bombay under the British flag. During 1854-1856, the American clippers *Typhoon* (1,611 tons) and *Hurricane* (1,608 tons) made great record runs in the Indian trade when under charter to British owners. Among the American clippers sold to Britain during the Civil War were the *Typhoon* (1,611 tons), *Meteor* (1,068 tons), and *Cyclone* (1,109 tons). The following is a list of United States-built clippers that are known to have made passages in the British-Indian trade during the fifties and prior to the Civil War:

Name of Clipper	Year Built	Tonnage	Name of Clipper	Year Built	Tonnage	Name of Clipper	Year Built	Tonnage
TYPHOON	1851	1,611	EDWIN FORREST	1853	1,141	MORNING STAR	1853	1,105
INVINCIBLE	1851	1,769	DAVID CROCKETT	1853	1,679	PANTHER	1854	1,278
HURRICANE	1851	1,608	DAVID BROWN	1853	1,715	EUTERPE	1854	1,985
RACER	1851	1,669	RINGLEADER	1853	1,157	BLUE JACKET	1854	1,790
HORNET	1851	1,427	LIVE YANKEE	1853	1,637	NOR'WESTER	1854	1,267
HIPPOGRIFFE	1852	671	FLYING SCUD	1853	1,713	LIGHTNING	1854	2,084
ARCHER	1852	1,096	RADIANT	1853	1,318	CHAMPION OF THE SEAS	1854	2,447
MESSENGER	1852	1,350	SPIRIT OF THE TIMES	1853	1,206	JAMES BAINES	1854	2,515
METEOR	1852	1,068	WILD RANGER	1853	1,044	COEUR DE LION	1854	1,098
SIMOON	1852	1,436	UNDAUNTED	1853	1,371	MARY	1854	1,148
ONWARD	1852	874	CYCLONE	1853	1,109	FLEETWING	1854	896
BEVERLY	1852	676				MAMELUKE	1855	1,303
EMPRESS OF THE SEAS	1853	2,197				DARING	1855	1,094
MYSTERY	1853	1,155						

For a time, the California trade had been sufficiently profitable for American clippers, so that they could afford to return from San Francisco to an East Coast United States port in ballast, much of their profit made on the outbound and westward passage being eaten up by the expenses incurred on the homeward and eastward Cape Horn passage, which gave no freight revenue whatever but rather an additional cost in the loading and unloading of the ballast. Because of these economic conditions, (1) reduction of the early high revenue from freight and passengers on the outward California passage and (2) the indefiniteness in regard to obtaining cargoes and unattractiveness of freight rates over the oriental or Indian course to North Atlantic ports, United States clippers of the finest type, even in the comparatively early fifties, degenerated into the carrying of "filthy, stinking" guano from Peruvian ports around the Horn eastward to North Atlantic ports for the last lap of a California or an Australian voyage, and the vile dirt, dust, and smell from this "worst of all bulk cargoes" permeated the ship that carried it. The natives of Peru would not work the guano deposits, so some American clippers were used to transport Chinese coolies (all of them deceived or kidnaped by unscrupulous agents) from a China port to Peru. In 1855, Sampson & Tappan, of Boston, chartered its fine clippers *Westward Ho* (1,650 tons; built in 1852) and *Winged Racer* (1,767 tons; built in 1852) to carry coolies from Swatow to Callao (and Chincha Islands). It later developed that when the latter vessel had 700 coolies aboard and was about to sail, a mutiny occurred, and 60 coolies were flogged. Guano cargoes were despised by all seafaring men as well as by the owners and masters of vessels, but America's finest craft, for many long years, actually suffered mortification as they competed for cargoes of the filthy excrement of sea fowl in order to obtain some sort of return cargo and keep operating.

The carrying of Chinese coolies to Peru to work on the guano deposits and to load the ships desiring cargoes was virtually as bad as slaving, and it became so repugnant to United States shipowners and shipmasters (and the general public) that the carrying of such human cargoes from China to Peru became generally tabooed about 1856 (even though for years some fine ships, "to keep operating," were willing to carry Chinese coolies to Cuba and other ports where cheap labor was in demand). The result was that the Peruvian Government, wanting to continue a highly profitable export business and having bought and raised the American clipper *Climax* (1,051 tons) and placed her in the coolie carrying trade in 1855-1856, as the *Antonio Terry,* decided to acquire other American clippers from time to time. (This vessel, which had sunk in the harbor of Callao, was built in 1853.) Following the purchase of the crack Cape Horner *Westward Ho* and the 1,244-ton yacht-like *Gazelle* (after her unfortunate experience in the South Pacific) in 1857, an additional six United States clippers were acquired for Peruvian registry during the Civil War years, and another, the *Ocean Express* (1,697 tons; built in 1854), was bought by the Peruvians in 1872 for general Pacific trading. The six United States-built clippers acquired by Peru during the American Civil War for transporting Chinese coolies to the guano deposits were:

Challenger (1,334 tons; built in 1853); renamed *Camille Cavour.*

White Falcon (1,372 tons; built in 1853); renamed *Napoleon Canavero.* This ship was set on fire by coolies in 1866, and all the 650 coolies aboard perished in the flames, the officers and crew escaping in small boats.

Starlight (1,153 tons; built in 1854); renamed *R. Protolongo.*

Twilight (1,482 tons; built in 1857); renamed *Compania Maritima Del Peru No. 1.*

Telegraph (1,078 tons; built in 1855); renamed *Compania Maritima Del Peru No. 2.* This ship was burned at sea in 1868.

Uncowah (988 tons; built in 1856). This ship had operated in South American trade for many years, but was sold in 1865 for the Peruvian Chinese coolie trade; she was burned in the Pacific in 1870.

In the search for cargoes in the late fifties, a few United States-built and owned clippers were willing—rather than to "lay up" or operate without profit—to carry Chinese coolies to ports other than Peru, but this was most undesirable business and not far removed from the slave trade, which was branded illegal by civilized Christian nations. A few American clippers actually did become out-and-out slavers, although when they entered this despicable business of transporting Negro slaves from the African coast, they had been "sold foreign" or the identity of the American owners camouflaged. Prior to the Civil War, the American press occasionally referred to the operations of slavers, and in 1859 it was said that there were "seven slavers regularly fitted out in New York." The clipper *Haidee* (395 tons; built in 1854) was sold in 1857 for a slaver, and this vessel was scuttled when engaged in this trade in September 1858. The clipper *Sunny South* (776 tons; built in 1854) was captured by the British sloop-of-war *Brisk* in Mozambique Channel in August 1860, with 600 slaves aboard; at the time, however, the ship was registered at Havana and had been renamed *Emanuela.*

One of the most beautiful and fastest clipper ships that ever sailed the Seven Seas, the *Nightingale* (1,060 tons; built in 1851), became a slaver in early 1860, with her real American ownership camouflaged. It had been announced that she had been sold to go under the Brazilian flag, but up to the time of her capture by the U. S. sloop-of-war *Saratoga* in April 1861 on the African coast, she was the ship *Nightingale* of Boston, flew the flag of the United States, and was commanded by an American. The commander of U.S.S. *Sumter* reported from the African coast on April 15, 1860: "The clipper ship *Nightingale* of Salem shipped a cargo of 2,000 Negroes and has gone clear with them. . . . She is the property of Capt. Bowen who is called the 'Prince of Slavers.'" The *Nightingale* was evidently fitted out as a slaver in New York. She sailed as a slaver from London in November 1860, and at the time of her capture by the U.S.S. *Saratoga* (the result of a strategy) she was loading slaves and had 961 aboard. Captain Bowen was arrested and seemingly permitted to escape, but the *Nightingale* was returned to the United States, condemned on July 6, 1861, and bought in by the navy for use as a cruiser during the Civil War.

In addition to the Gold Rush to California commencing in 1849 and that of Australia in 1851-1852 (each of which continued in its demands on shipping for a period of years and also permanently opened up new territory with associated world trade), the following events of international importance that had an effect upon shipping took place:

Crimean War	1853-1856	Opening of Suez Canal	1869
Indian mutiny	1857-1859	American transcontinental railroad completed	1869
American Civil War	1861-1865		

The Crimean War made substantial demands on shipping, particularly in 1855-1856, at which time the French Government chartered the *Great Republic* (3,357 tons) and many other American clippers, such as *Ocean Herald* (1,658 tons), *Queen of Clippers* (2,361 tons), *Titan* (1,985 tons), *White Falcon* (1,372 tons), etc., and such big sturdy carriers as the transatlantic packet ship *Monarch of the Seas II* (2,145 tons). The *Great Republic* first took 1,600 British troops from Liverpool to Marseilles and then entered the transport service, running between Marseilles and the Black Sea.

The transportation of British troops to India in 1857 and 1858 called for the diversion of tonnage for war purposes and thus somewhat counteracted the commercial and shipping depression of the mid and late fifties. It was during this period that United States-built and owned ships commenced to be acquired to a substantial degree by British shipping interests. The flight of American tonnage to British registry, which was first brought about by the business depression and financial panic in the United States, continued to a greatly intensified extent during the period of the American Civil War, with the result that the sixties saw the United States drop out of many trades and largely out of general deep-sea traffic, leaving British shipowners virtually in command of the marine trade routes of the world. It is significant that when the British dethroned the United States as the mercantile Mistress of the Seas, they did so, as far as sail is concerned (and sail handled an overwhelming percentage of the tonnage carried in foreign trade), by the use of big and sizable United States-built ships, augmented by a generally similar but inferior type of ship that had been built in Canada. Britain could never build the large, fast merchant ships required in the fifties to meet trade demands; it was at no time able to construct successful sizable wood merchant sailing vessels, and it was many years after the close of the Civil War before Britain commenced to build iron sail in sufficient quantity to become a factor in the carrying trade on the Seven Seas. In the meanwhile, Britain used sizable old United States-built and both old and new Canadian-built wood sailing ships and a rapidly increasing fleet of steam vessels (both iron and wood; paddle and screw) to gain and hold control of shipping on the trade routes of the Seven Seas.

There was a big shipbuilding boom in the United States during 1851-1857 inclusive. The peak in clipper shipbuilding was reached in 1853 and of all tonnage in 1855, at which time the United States led the world in the quantity and quality of floating tonnage built as well as in the operation of its ships—speed, performance, and reliability of service. The California Gold Rush and the hectic spirit of the forty-niners boomed America's shipbuilding, and "speed was the spirit of the Horn." The Gold Rush boom years of 1849-1852 were a great incentive to the building of large and very sharp-lined, fast vessels in eastern yards, and they turned out large numbers of the speedy square-riggers of the "clipper" type.

Carl C. Cutler, in his GREYHOUNDS OF THE SEA—THE STORY OF THE AMERICAN CLIPPER SHIP, places the year 1855 as the year in which "America touched the zenith of her maritime achievements," but in his analysis of conditions, he describes the years more nearly correctly, it would seem, when he says:

1853 Flood Tide—Ominous Signs
1854 Commercial Depression
1855 Liquidation Begins
1856 Lengthening Shadows
1857 Renewing of Contest
1858 Commercial Panic and Civil Strife
1859 Last Great Voyages

Arthur H. Clark, in THE CLIPPER SHIP ERA (1843-1869), says: "The year 1851 is memorable in our maritime annals because at that time the United States was at the zenith of her power upon the ocean and had completely outstripped her rival, Great Britain, in the efficiency and extent of her overseas carrying trade."

It would seem that, all things considered, the United States reached the apex of its power in a marine operating sense—shipping and trade—in the mid and late fifties and as a shipbuilding nation during 1852-1855.

Available records show that 148 United States-built clippers aggregating 184,906 tons register were "sold foreign," and this includes 6 vessels of 13,569 tons that James Baines & Company of the Liverpool-Australia Black Ball packet line ordered from Donald McKay, of East Boston, or bought on the stocks from that builder. Thirty-eight of the clippers totaling 54,104 tons were "sold foreign" prior to the end of 1857, and of these, 19 of 31,801 tons were acquired by the British, 5 by Germany, and 4 by France. Sales of American clippers abroad, because of the Civil War and "the flight from the flag," totaled 73 vessels of this type aggregating 86,138 tons during the three-year period 1862-1864. Sales made after 1868—a scant 9 per cent of the stated total—were generally of clippers that had passed their usefulness as American ships in the trade for which they were built. The following table gives the number and the total tonnage of United States-built clipper ships "sold foreign" and registered abroad during each of the years 1853-1867 inclusive and during 1868 to 1886, at which time such records terminate:

Year Sold	Britain No.	Britain Tonnage	Germany No.	Germany Tonnage	France No.	France Tonnage	Spain No.	Spain Tonnage	Italy No.	Italy Tonnage	Other European Countries No.	Other European Countries Tonnage	Siam No.	Siam Tonnage	Peru No.	Peru Tonnage	Other South American Countries No.	Other South American Countries Tonnage	Total No.	Total Tonnage
1853	2	2,453	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	2,453
1854	11	18,826	1	2,421	—	—	—	—	—	—	—	—	—	—	—	—	1 (Chile)	725	13	21,972
1855	4	8,303	3	2,309	—	—	—	—	—	—	—	—	—	—	1	1,051	1 (Argentina)	460	.9	12,123
1856	1	1,092	—	—	4	6,054	1	1,289	—	—	—	—	1	903	—	—	—	—	7	9,338
1857	1	1,127	1	1,098	—	—	2	2,087	—	—	1 (Holland)	1,498	1	758	1	1,650	—	—	7	8,218
1859	1	1,400	—	—	1 (Belgium)	678	1	1,274	—	—	1 (Denmark)	1,115	—	—	—	—	—	—	4	4,467
1860	3	3,688	1	1,274	—	—	—	—	—	—	—	—	—	—	—	—	—	—	4	4,962
1861	3	2,365	2	2,057	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5	4,422
1862	13	17,704	1	587	—	—	—	—	—	—	—	—	—	—	—	—	—	—	14	18,291
1863	39	47,950	3	2,907	2	1,672	—	—	1	794	—	—	1	812	1	1,334	1 (Chile)	582	48	56,051
1864	8	7,789	—	—	—	—	—	—	—	—	—	—	—	—	3	4,007	—	—	11	11,796
1865	1	1,094	1	1,209	—	—	1 (Portugal)	634	1	1,266	—	—	—	—	2	2,057	—	—	6	6,260
1866	2	4,656	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	2	4,656
1867	2	2,336	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1 (Argentina)	1,139	3	3,475
1868 on	1	1,324	2	1,822	—	—	—	—	—	—	5 (Norway) 2 (Austria) 1 (Russia)	5,751 3,490 1,052	—	—	1	1,697	1 (Uruguay)	1,286	13	16,422
Total	92	122,107	15	15,684	6 (France) 1 (Belgium)	7,726 678	4 (Spain) 1 (Portugal)	4,650 634	2	2,060	10	12,906	3	2,473	9	11,796	5	4,192	148	184,906
					7	8,404	5	5,284												

During the Civil War and for many years following, British shipowners encouraged the building of square-rigged ships for them in Canada. At the same price, the British always preferred to patronize Canadian rather than United States yards, for ships in the Dominion were "British Empire" and not "Yankee" vessels. The cost of United States-built ships was always more than that of Canadian ships due to the higher wages paid and better (and more expensive) materials used. The Lynch Report of 1870 tells us that in 1869 American-built ships were priced at between $50 and $60 per gross ton (gold), and American shipowners reported that the price for Canadian-built vessels was from $15 to $20 per ton less. Estimates from several Canadian builders gave prices of completely outfitted copper-fastened ships of oak and spruce of from $42 to $44 per gross ton (gold), but ships of admittedly inferior construction were priced cheaper and as low as $34 per gross ton. Canadian shipbuilding reached a peak of activity during the sixties and seventies, and it is interesting to note that Lauchlan McKay, a brother of Donald McKay, returned to Canada during a difficult shipbuilding time in the United States and built ships at Quebec (McKay & Warner) that closely resembled New England construction in model but not in materials used or in excellence of design and workmanship. The largest ship built in Canada was the *William D. Lawrence* of 2,459 tons, and the shipentine *Kings County* of 2,240 tons and the *John M. Blaikie* were constructed during this period. These Canadian ships were generally built with spruce framing rather than oak as used in American vessels and in earlier Dominion-built ships. It was claimed that this type of Canadian construction was 5 per cent cheaper than the old (and United States standard) "because of the great abundance and ubiquity of spruce" and that these Canadian ships were of lighter weight and had "16 per cent or more increased deadweight carrying capacity." The British would have been justified in classing these cheap Canadian ships as "softwood" vessels; but because they were "Empire-built," the tonnage was well rated by British Lloyd's, and it was said that when the timber was properly cut and used, these copper-fastened spruce ships, built carefully under Lloyd's supervision, "sometimes proved to be serviceable for as many as sixteen or twenty years." However, it had to be admitted that such vessels did not have the durability and longevity of United States-built ships. Some Canadian vessels in these decades were built with certain quantities of white and live oak used in conjunction with other timber, and some of these ships, classified as 12 and 14 years A-1 at Lloyd's, were declared by the Canadian and British "as strong competitors of United States-built ships."

Quebec reported building 213 ships and barks during the five-year period 1860-1864 and 173 in the following five years 1865-1869 inclusive. From 1870 on, the shipbuilding business declined in Quebec (although Nova Scotia yards became more active). There were 10 full-rigged ships built at Quebec in 1872, and 7 of them were sold abroad. In 1876 official Dominion figures state that 64,134 net tons of ship construction (or 39 per cent of the total output) were sold abroad, but the value stated is only $2,189,270.00, or only $34.14 per ton. In the late seventies, British shipowners were becoming unwilling to purchase wood (Canadian-built) ships, even at very low prices, but that the British had well supported Canadian shipyards during the sixties and seventies is suggested by the international makeup of the sailing ships leaving from San Francisco in the California grain trade fleet of 1881-1884 inclusive: British iron ships numbered 761; United States wood ships were second, numbering 418; while third place was occupied by British wood ships (Canadian) with 198. Canadian shipbuilding waned as the British demand for tonnage lessened and British-built iron ships were in a position to handle the empire tonnage, which could be more economically transported by sail rather than steam.

Samuel Cunard, who was created a baronet in 1859 by the British for his initiative and enterprise in establishing transoceanic steamship service, was the son of Philadelphia Quakers and came very close to being an American himself, as his parents, with Royalist sympathies during the War of the Revolution, moved in 1785 to Halifax, Nova Scotia, where Samuel was born in 1787. Young Cunard was trained as a merchant and became interested in ships, and his vessels carried Canadian mail to Bermuda, Boston, etc. As early as 1830, Cunard, having become interested in steam, formulated plans for inaugurating a line of paddle-wheel steamers to compete with the United States transatlantic lines of sailing packets. He felt that a line of steamers such as he proposed could carry the mails, passengers, express freight, and ample fuel, water, and supplies for a westward crossing of the Atlantic and make, on the average, a tremendous saving in time as well as maintain a regularity of arrivals on these westward passages. These, he said, "took anywhere from 20 to over 80 days for the best of sailing packets, which are dependent upon wind and seas for the length of their crossings." Cunard visited Boston and New York and placed his proposals before leading shipping merchants of these American ports, but his plans were "turned down cold." He was informed that steam propulsion was all right for inland waters and short sea runs but wholly impractical for long ocean voyages and that "no dirty, smoky, shaking teakettle of a sufficient size to carry mails and passengers (with great discomfort) across the Atlantic could carry sufficient fuel, water and supplies to make the three-thousand-mile journey." Moreover, the Americans affirmed the superiority of clean and proven sail and added: "No one can dispute the fact that United States sailing packets lead the world, they dominate the Atlantic trade and enjoy a preponderance of the best world trade because of their superiority in service to the ships of all other nations." Cunard argued in vain about the vagaries of the wind, the dependability of steam-driven paddles, and the great advantages of a vessel's being controlled by man rather than by the ever erratic weather; but United States shipping merchants were unimpressed, so Samuel Cunard went back home determined to get the backing of prominent Canadians and Britishers and through them the financial support of the British Government.

About this time, other Americans were advocating steam propulsion for transatlantic liners to carry mail, passengers, and fast freight, and the initiative of United States citizen Junius Smith, in England, led to the building and operation of the first transatlantic steam packets. However, as American shipowners did not think well of the idea in the 1830's, these vessels were built in England and operated under the British flag. In April 1838, the steamers *Sirius* and *Great Western* initiated steam packet service on the Atlantic by crossing from England to New York under their own steam, and they were followed three months later by the steam packet *Royal William*. The British Government was impressed, and the admiralty soon invited bids for a "speedy and more regular steam carrier system" for transatlantic mails to replace the service of British brigs, which, carrying virtually nothing but mail, had been for years in most unsuccessful competition with the far superior and faster United States sailing packet. Samuel Cunard was in Britain in 1838, and he influenced Robert Napier, the well-known shipbuilder, and through him the shipping firms of George Burns, of Glasgow, and David MacIver, of Liverpool, who together organized The British and North American Royal Mail Steam Packet Company, whose offer to the government to build and operate a transatlantic steam packet line under British subsidies was accepted, and the Cunard Line came into being. By a peculiar coincidence (or with a deliberate touch of irony), the pioneer steamer of the British Cunard fleet left Liverpool on her maiden voyage on July 4 (the United States Independence Day), 1840, and inaugurated a fortnightly mail, passenger, and express freight service between Liverpool, Halifax, and Boston. In early 1848, a direct steam packet line between Liverpool and New York was inaugurated by Cunard, and United States transatlantic sailing packets were hit pretty badly by this steam packet competition. The United States Congress seemed to wake up for a while when it granted a mail subsidy to Edward K. Collins, an experienced sailing packet operator, who built a fleet of transatlantic steamship liners that for size, speed, comfort, equipment, luxurious appointments, and reliability of service led the world and threw the heavily backed British Cunard liners into the shade, as by sheer merit the Collins vessels won the best of the trade and gained the most discriminating patronage.

When the Collins Line had a spell of bad luck and was greatly in need of money, the government, with American politics "in the saddle," embraced the opportunity to withdraw its subsidy and throw the line into insolvency. The Collins Line was operated in the interest of the American people and not of its stockholders, and money was needed to bring out and operate the *Adriatic* of 4,144 tons, which cost $1,100,000 and was the newest, largest, fastest, and best steamship in the world. The United States deliberately, by refusing to continue to grant subsidies to promote and support deep-sea steam navigation and by arbitrarily abolishing the promised plan of governmental co-operation and support, wrecked the Collins Line, discredited American investments in ocean-going steamships, and played into the outstretched and eager, grasping hands of the British. It has been well said that it was the United States Congress that both killed the American merchant marine and made Britain the Mistress of the Seven Seas. During the latter part of the fifties, with a civil war threatening, the British favored the non-maritime but cotton-growing and slave-owning South. The merchant shipping of the United States was chiefly owned in New England and New York, where the anti-slavery agitation was most intense. The important subsidized mail steamships sailed from New York, so it was claimed by opportunist politicians that the entire country was being made to contribute to the support of an interest that benefited only the northeastern (anti-slavery) part of the nation. It was also definitely felt by the representatives of the states that later formed the Southern Confederacy that big, swift, strong mail ocean steamships would be a formidable addition to the sea power of the North if the quarrel between the North and South should, as seemed possible, lead to civil war.

The British strategy to win the ocean-carrying trade from the United States, when it was definitely felt in Britain that notwithstanding her proud boast Britannia was no longer "the Mistress of the Seas," was to develop steam vessels and the building of engines and boilers with English iron, fuel the ships with British coal, and strive to substitute iron ships for wood construction. In doing so, Britain would utilize domestic materials, add to the prosperity of British industry, while becoming independent of imports, and within a short time be able to build iron vessels cheaper than the Americans could build wood vessels. If the British could not sail iron ships as fast as United States-built clippers, by building iron steamships and locating fueling stations (supplied with British coal) at intervals on the world's trade routes, they would make faster and more uniform passages by iron steam-driven vessels than could ever be made by ships that were dependent upon wind for power. Again, screw propulsion was ideal for deep-sea service and was better adapted for iron hulls than for wood, so Britain gradually concentrated on iron screw steamers for foreign trade.

When the United States declined to meet such competition, which was backed by national funds supplied by a single-minded, intensely patriotic government, the contest was over, and the United States as a marine power gradually sank to the status of mediocrity and virtual nonexistence in the foreign deep-sea carrying trade. In 1825-1826, American ships carried 92½ per cent of the combined imports and exports of the United States; in 1846-1847, the corresponding percentage was 81½; in 1860, it was down to 66½ per cent. As a result of the Civil War and British aggressiveness, it was down to 27½ per cent in 1864-1865, and from the turn of the century to the first World War, only about one-tenth of the foreign commerce of the United States was carried in American vessels; it was 8.2 per cent in 1901. As Meloney says: "When in August 1914, the mailed fist of Bellona fell and paralyzed the commerce of the entire world, the United States flag had descended in the ocean scale, below little Norway, below Italy, even below Japan. With a foreign traffic of four and a half billions of dollars, exports and imports combined, . . . we possessed a merchant marine capable of transporting eight and nine-tenths per cent of it." The United States had registered for deep-water trade only 666,593 tons gross of steamers and 234,616 tons of sailing vessels—a total of 901,209 tons; whereas the steam tonnage of the merchant marine of the belligerents alone stood at 32,334,893 tons, or about fifty times as much as that of the United States. The tonnage of the 10,123 British steam vessels stood at 20,523,706 tons; whereas that of other belligerents whose steam tonnage was greater than the 810 steamers totaling 666,593 gross tons registered in the United States was as follows:

Nation	Number of Steamers	Gross Tonnage	Nation	Number of Steamers	Gross Tonnage	Nation	Number of Steamers	Gross Tonnage
Germany	2,090	5,134,720	Italy	637	1,430,475	Austria-Hungary	433	1,052,346
France	1,025	1,922,286	Japan	1,103	1,078,386	Russia	747	851,949

As the war commenced, the United States was a neutral power; however, the eight belligerent nations controlled seventy-two per cent of the world's ocean-carrying trade. The United States attempted to purchase from other neutrals, but Spain, Denmark, and Holland declared prohibition of sale as did also Austria, Germany, and France of the belligerents, and the United States was deprived of the opportunity of purchasing interned tonnage by a British decree that said: "We will not recognize the transfer of a vessel of any ownership unless upon indubitable proof that it is not changing registry to escape the responsibilities of war or national belligerency." The United States soon found that money could not buy ships, and at the opening of 1916, after exhausting every possible avenue of buying existing available tonnage without regard to price and of transferring all possible ships to American registry, the "United States had increased its ocean-carrying capacity only fifty per cent over that of the summer of 1914." (Great Lakes and coastwise vessels, not fit for deep-water trade, were included in these ocean-carrying capacity figures.)

World War I found the United States helpless in regard to ocean shipping, and even after a frenzied period, when both economy and good sense were discarded in the prevailing emergency, it could not handle its greatly needed imports and exports or later transport its troops and needed military supplies abroad on United States vessels. Even after the bitter and disillusioning experiences and lessons that should have been learned from World War I and the forced building of some twenty-three hundred vessels without regard to cost, the United States once more, following the end of hostilities, abandoned the sea—a policy that greatly pleased both our allies and enemies. The costly vessels that we then possessed were left to rust and rot as each of the maritime powers of the world once more took to the seas with vigor and passed the United States in the tonnage of its fleets engaged in foreign trade. It was not until 1936 that the United States Congress passed the Merchant Marine Act, which declared what had been well known for a century by thinking people and unbiased patriots: that a merchant marine "constructed in the United States manned by a trained and efficient citizen personnel, . . . served and operated under the United States flag by citizens," is "necessary for the national defense and [for the country's] foreign and domestic commerce." The act provides for a building loan subsidy based on the difference in cost between constructing a vessel in an American shipyard and in a foreign yard. It also provides for an operating differential subsidy which gives governmental aid in operating a vessel, provided she is in competition with foreign vessels; this operating subsidy is supposed to cover the increased cost of wages, subsistence, maintenance, repairs, and insurance. The Maritime Commission, established by the Merchant Marine Act, sought to develop an adequate United States merchant marine, but as Clifford D. Mallory, Jr., says:

> Soon, however, the shadow of approaching war necessitated an accelerated program, and the War Shipping Administration was created. Our shipyards produced Liberty and Victory ships, as well as the "C" type vessels and others raising our total tonnage from about 11,000,000 tons to 57,000,000, the greatest merchant fleet the world has ever known. The heart-breaking cry of "too little and too late" was drowned out by the news of victory, greatly made possible by this fleet.

At the close of World War II, the United States is again—and even more so than it was a century ago—the greatest maritime nation on earth. It possesses the greatest merchant fleet (and the greatest navy) in all history. However, international influences are at play and emotional reformers are developing notions within the country that may gather strength with opportunist politicians and lead to renunciation of marine power (acquired at a terrific cost under the pressure of a war of self-defense) and to half-baked legislation which will operate to weaken the country as it declines to profit by the extremely expensive lessons of history. It is to be hoped that after the persistent and continuing humiliations of the past century and the frightful experience of two world wars, the people and Congress of the United States will have learned enough to keep and operate a strong and fully adequate American merchant marine.

Sail and Steam during the Period of America's Rise to Dominance of Ocean Trade

In 1845 the United States Congress adopted its first law directed toward meeting the competition of heavily subsidized British steamships. This act authorized the establishment of contract lines for carrying the United States mails abroad. In 1846 and 1847, the law was extended and fortified. The United States at mid-century, for many years before, and during most of the sixth decade of the nineteenth century was the commercial Mistress of the Seas. Ship for ship (clipper, packet, or ordinary merchant vessel), captain for captain, and man for man, the fleet sailing under the Stars and Stripes dominated the oceans and marine trade of the world, and in the early fifties the same American superiority was conspicuously evident in the steam packet liners operating in the North Atlantic. The year 1858, which experienced a major financial depression and panic, also saw the last congressional act of a series that caused a deplorable rightabout-face change in the government's policy in regard to the American merchant marine, with the cessation of the subsidies that the United States had been paying to steam packets to maintain its flag in competition with Britain's heavily subsidized fleet. The marine history of the United States is as amazing as it is erratic and pathetic. As a young nation, it established its birthright in the freedom of the seas, and after demonstrating its outstanding ability to build the world's best, fastest, and cheapest wood ships and to operate them with unequaled skill, energy, and courage, it stupidly, because of political conditions, turned its back on progress, refused to foster, protect, and support its foreign trade steamship lines or to pay the price required to develop iron construction and screw propulsion, and by so doing, deliberately and with unequaled asininity, deserted the ocean and left deep-sea trade in the hands of the British. It has been truly said by Meloney in "The Heritage of Tyre" that the United States "wrested the Tyrian trident from Britain's grasp, tore the proud title of Mistress of the Seas from her breast, and having done this, she flung her heritage away like a witless wastrel—with the abandon of a drunkard."

There were some able and progressive American shipowners who showed a positive desire to build steamships and operate steamship lines of unequaled excellence if they were guaranteed against losses associated with the higher cost of building, maintaining, and running steamships—as were the British, German, French, Belgian, and other foreign lines.

In the forties, the American public and press gave constant encouragement to its far-famed sailing packets in their competition with steamships on the North Atlantic. Bennett of the New York HERALD, in editorials, wrote in 1841:

> It is yet to be discovered which are the most comfortable and profitable—which the best family conveyance. . . . The ships follow so close upon the steam packets that the latter begin to complain, for fear of being tripped up. . . . Our packet ships will continue to receive their share of the traveling community, so long as they continue to run regularly. . . . It was thought by everyone . . .

that the days of our famous packet ships were numbered and that they would soon be lost sight of in the cloud of steam that was immediately to hang over the broad Atlantic. . . . Since then the packet ships have increased in passengers and new ships are constantly taking the place of those which have long been in the lines.

Bennett, in 1842, said that the new British-subsidized steam Cunard liners would have to "come direct from Liverpool to New York [instead of to Boston via Halifax] or they will be run off the ocean by the New York packet ships in less than two years," but Bennett did not properly figure on the thoroughness of British backing and the power of British subsidies. Moreover, the British Government, although slow to change, was not stupid and in 1848 opened its direct line to New York while continuing its colonial line to Halifax, Nova Scotia, with its steam packets continuing to Boston, Mass. A little over a year before Cunard announced the inauguration of a direct steam packet line between Liverpool and New York, with regular sailings and anticipated "12-day passages," Bennett predicted a rosy future for the "canvas-back" liners, pointed with pride to the improvement in sailing packets since the introduction of the steamship, and said that the packets of the old established regular New York lines were being built on a larger, better, and more spacious scale for passengers and for freight. "They now [August 1846] convey more travellers than they did before the steamship entered the field and an infinite deal more freight, and consequently their profits have been greater and the lines more profitable." Three months later, the Black Ball sailing packet *Yorkshire* made a record westbound passage from Liverpool to New York, city to city, in 16 days (which was a 15-day crossing from light to light and steamship time); moreover, she brought into New York on November 18, 1846, passengers from the wrecked S.S. *Great Britain,* the largest and most modern iron screw-propelled packet steamship in the world.

Conditions commenced to change in the competitive struggle between steam and sail in the North Atlantic in 1847. The pioneer American-subsidized steam packets running to English Channel ports appeared on the scene, and far more formidable competition arose in January 1848, when the Cunard Line commenced its direct sailings between Liverpool and New York. However, it was the American Collins steam packet line, which commenced its service in 1850, that captured the bulk of the cabin, or first-class, passenger traffic from both the American sailing packets and all other steam packet lines, domestic and foreign, including the heavily subsidized British Cunard Line. The British transatlantic steam packets, notwithstanding complete moral and financial government backing, proved to be conspicuously inferior in speed, reliability, and comfort as well as in the quality of construction, equipment, and operating service to the competitive American Collins liners. Edward K. Collins put American steam packets in the vanguard, and Collins liners propelled by steam were as superior to Britain's best in the early fifties as were American clippers and sailing packets to the best ships sailing under the British flag.

Builders of sailing ships fought to maintain sail on the Western Ocean and the Seven Seas, as the following statement of the mid-fifties shows:

We say to owners of sailing ships, that under many circumstances, and for many purposes of navigation, the sailing ship is cheaper in first cost, and in sailing, and can outcarry at equal average speed, a screw steamer. Let canvas have but a fair opportunity to propel a suitable model, and we shall see there is money yet to be made from the idle breeze, the threatening gale, and destructive tempest.

Nevertheless, steam had arrived to stay, and American steamships, up to the time that practical and substantial support was removed by congressional action, led the world; with a united country and a farsighted government, America would have continued in the vanguard in the last half of the nineteenth century in the building, development, and operation of steamships as, in the fifties, it led in the design, production, command, operation, and business management of deep-sea square-rigged sail—clippers, packets, and general traders.

American Genius in Marine Construction

It has been said that "the United States has always been years behind Britain in her periods of marine construction." This statement is untrue. The United States was behind Britain in the development of the composite and iron sailing ship and of the iron steam merchant liner and tramp. This is partly due to the fact that American builders and owners preferred good wood ships to iron or composite ships, and for many years they preferred sail to steam. An American copper-sheathed wood hull could keep at sea indefinitely without the need of dry-docking for cleaning her bottom and could follow trade routes without regard to the geographic location of dry docks and coaling stations. The truth is that Britain did not have the timber for building ships, but it did possess iron and coal as abundant and relatively cheap natural resources; hence its use of them and the impetus put behind the building and use of iron ships and iron steamers. British designers of sailing ships never turned out either models or sail plans to compete in quality with the well-balanced product of American builders. British sailing ships for many decades were badly proportioned and faulty in many essentials. Britain turned from wood to composite construction in sail and to iron because it could not build big high-quality wooden ships—sail or steam. Britain's builders and shipowners never produced or operated sizable composite ships in any quantity, and most of its composite ships were not only small but also badly modeled for power, stability, cargo carrying, and general use. Composite-built ships such as the historic *Cutty Sark* of 921 tons (built in 1869) and *Thermopylae* of 948 tons (built in 1868), which the British claimed in the seventies were not only the fastest ships in the world but also the fastest sailing vessels ever built, had yacht-like models that would not stand up without ballast when light and were lacking in initial stability and sail-carrying power when holds were filled with homogeneous, lightweight cargoes. Notwithstanding their high speed, particularly in light winds and smooth seas, such crack speedsters could never compete in any general trade with medium-fine and amply canvased wood Down Easters. For these American vessels, the Cape Horn route, the turbulent North Atlantic, and the Roaring Forties in the Southern Hemisphere had no terrors at any time, and they performed with a good measure of satisfaction even in the doldrums and tropical light-air zones. Britain built but few composite merchant ships and, as a matter of fact, changed gradually and steadily from wood to iron and from iron to steel in the realm of sail as well as of steam.

The United States never took up composite construction for merchant vessels, but later in the century used metal framing and stiffening with wood planking in the building of yachts. However, some of America's pioneer iron vessels were, in fact, of composite construction in reverse, with the framing of oak and with iron plating taking the place of wood outside planking instead of iron framing and wood planking (to which copper sheathing could be attached to prevent the fouling of the vessel's bottom). Good iron plates were made in the United States before shapes such as angle bars and "T" or "I" sections were rolled, and shapes are necessary for the framing and deck beams of legitimate composite and iron vessels and for the stiffening of iron bulkheads, etc.

In the nineties and at the turn of the century, the United States led the world both in composite and sheathed construction, and there were built at Bath, Maine, not only composite gunboats, or "sloops of war" (with sail auxiliary), and large composite lightships but also a sheathed naval training ship (with no steam power), sizable cruisers, and first-class battleships. The virtue of wood planking, copper-sheathed, for vessels that have "to keep the seas" in foreign waters for long periods of time is so well known that even 14,000-ton, heavily armored, big-gun "first-class" battleships designed for the United States Navy in 1899 and built in 1900-1904 had their bottoms planked with hard pine over their steel shell plating, the wood underwater hull being sheathed with copper. Britain, with its imperialistic policies and its domination of the oceans of the world by a powerful and watchful navy, acquired coaling ports and stations equipped for docking and repairing vessels in all parts of the globe; these facilities were necessary if British ships were to be steam-driven and fueled during distant voyages, as they could not carry coal for even a one-way passage, not to mention a round voyage. Moreover, iron vessels fouled badly and had to be dry-docked frequently and their bottoms kept clean if they were to have speed enough to compete with wood copper-sheathed vessels. In the 1890's, the United States Navy, because of the country's having no foreign possessions, felt the handicap, as compared with Britain, in not controlling overseas dry-docking and fueling stations and considered this of such major importance that, in order to be able to keep the seas for long periods of time, it constructed its well-designed metal and even heavily armored warships with outside wood copper-sheathed planking on the outer underwater hull; this obviated the necessity of dry-docking abroad and reduced fuel consumption and the number of calls to be made at foreign ports for coaling. The smaller United States gunboats were also fitted with sail for auxiliary purposes to be used in cruising and primarily to save fuel.

Whereas the United States built its sailing ships entirely of wood until 1893 (excluding three iron ships built in 1882-1883 on the Delaware, which were unsuccessful, short-lived, and failed to compete with the superior wood Down Easter), Britain built iron sailing ships from around 1860 on, veering over to steel in the eighties. These British metal ships were commercially successful; following the American Civil War, Britain was the Mistress of the Seas, and British underwriters set the insurance rates of ships and cargoes and controlled through differentiation, favoritism, and prejudice—in an economic sense—the ocean trades of the world.

The iron steamer, during the British iron sailing ship era, gradually grew in strength and reliability on the one hand and in economic operation on the other. The compound (and later triple-expansion) engine, with higher steam pressure, greatly cut the coal consumption, which lessened the cost of operation and lengthened the steaming radius between coaling stations. Also, the increase in the size of steamers resulted in a lower initial cost per ton and a lessened operating cost per ton-mile. The evolution of the deep-sea iron (and steel) steam tramp made it gradually more and more difficult for the sailing vessel—of wood, composite, iron, or steel construction—to pay its way. By 1885 steamers were numerous, and the day of sail was nearing its close. Sailing ships were built during the first year or two of the twentieth century by enthusiasts who were accustomed to sailing ships and who blindly persisted in the use of the only kind of ship about which they knew anything. Square-riggers in deep-sea trade lingered until the World War of 1914-1918, but following the first decade of the present century they were no longer used for the carrying of important cargoes and were seen only in the so-called "rough and cheap trades," where time of transport was not of great importance.

The United States lost the dominant position it once held in deep-sea trade because its government refused to make it economically possible for its shipowners and shipbuilders to substitute steam for sail, iron for wood, and the screw for the paddle wheel in ocean trade. The insinuation has been freely made by British maritime historians that British engineering ingenuity outthought and outbuilt American shipbuilders, who, it is implied, were out of their element in the realm of steam, machinery, and the use of iron. This is absolutely false. Only national economic conditions due to politics kept the United States from beating Britain on the Seven Seas with steam propulsion and metal hulls as badly and conclusively as in the field of wood sail. American genius made steam navigation "a fact in the destiny of civilization" when Robert Fulton's *Clermont,* on September 4, 1807, steamed up the Hudson River. Twenty years earlier, in August 1787, John Fitch had demonstrated the first successful steamboat in the world by operation on the Delaware River in the presence of the American Constitutional Convention, and in July 1788 he had inaugurated a regular steamboat passenger service between Philadelphia and Burlington. On May 26, 1819, the *Savannah,* the first steamship ever to navigate deep water, sailed from Savannah, Ga., for London, and in 1820 the world's pioneer ocean-going steamship, the *Robert Fulton,* commenced to operate regularly on a two-thousand-mile deep-sea run and continued in the service for several years and as long as, without government encouragement, it could be operated at a profit.

The United States was the pioneer in screw propulsion as well as in the use of side wheels for steamers. John Stevens, of Hoboken, N. J., designed a screw propeller for steamboats in 1804 (and was also the pioneer in steam turbines). In 1843 the *Princeton,* an American sloop of war, had shown the world the successful, practical application of the propeller when the British Admiralty officially and emphatically disapproved screw propulsion. In the early forties, Robert B. Forbes, of Boston, built a powerful twin-screw ocean-going iron steam tug *(R. B. Forbes)* and two twin-screw steamers, which were put in the China trade and rounded the Cape of Good Hope; he also built the pioneer Atlantic steam packet operated by a screw propeller (which was a sailing ship with auxiliary steam), and Clyde, of Philadelphia, built a twin-screw steamer for the Gulf trade about the same time. J. W. Griffiths, who made the drawings of the early sailing clippers *Rainbow* and *Sea Witch,* is credited with talking about triple-screw propulsion in the early sixties. In 1865 he designed a 20-knot sea speed transatlantic steamer (twenty years before the first British liners to attain this speed—the *Umbria* and *Etrurea*—were built), but the United States Government would not support this or more economically sound plans for express ocean liners with a reasonable mail subsidy such as all other maritime powers were granting slower and inferior steamships. America also invented the ironclad, the submarine, and, later still, the airplane. The cylindrical shell firetube "Scotch" boiler was first built in the United States, where most improvements in such boilers also originated. The water-tube boiler was an American invention, and this type of boiler was first introduced by the British in their merchant marine in 1910. This was ten years after eminently successful boilers of this type had been designed for the big American transpacific liners *Minnesota* and *Dakota* (then the largest vessels in the world and to this day the largest cargo carriers ever built), and large-tube water-tube boilers had been used in the United States Great Lakes and coastwise trades since the mid-nineties.

When American shipbuilders, with the support of the United States Government, built steamships for the transatlantic trade to compete with the heavily subsidized British steamship lines, they built better, faster, and more comfortable ships than the British. From the start, the American Collins liners "carried the starred banner to the fore in competition with the British and kept it flying there until the end." The Collins Line steamships were as superior to the best of the British transatlantic steamers (Cunard liners) as the Yankee sailing clippers were ahead of the best British sailing craft; but the Civil War was approaching, politics and sectionalism intervened, American Government support was withdrawn from the ships, and the Collins Line disappeared from the seas. After the war, the United States turned its attention to the development of the West and to railroads rather than to the sea and ships. A politically divided country (North and South, East and West) and shortsighted politics were responsible for the fact that the genius of the United States had no opportunity for many long decades to show itself in the realm of steam and metal in shipbuilding and marine engineering. This lapse gave Britain a golden opportunity to establish itself as the Mistress of the Seas and the world's ocean carrier, while Uncle Sam acted indifferent and disinterested as to the handling of American imports and exports almost entirely by foreign-built vessels sailing under foreign flags.

The Country in the Hands of Politicians and Sectionalists

When the United States abandoned the postal naval subsidy system by congressional act in 1858 (and adopted a scheme of payments for mail carriage under which American ships received the inland postage plus sea postage and foreign ships the sea postage only), the country was in the hands of politicians and sectionalists. The national worth and importance of a strong and capable American merchant marine were given practically no consideration. As Meloney says:

> The South, which had taken the lead in voting to establish lines through postal subsidies, had now come to a rightabout-face. Its representatives in Congress were opposed to further increase of the North's possession of potential instruments of war. Except for the firing on Sumter the Civil War had already opened.

The American mail-carrying steamship lines disappeared from the seas in 1859, and United States vessels added to British glory, under the British flag, operating in the North Atlantic and other trades. During a period of fierce competition on the North Atlantic, brought to a close by the American Civil War, the British had been slowly but definitely turning to iron as a cheaper and, for them, more readily obtainable and practical material than wood for the construction of vessels. They had been forced to the position of realizing that their one hope of regaining commercial supremacy on the Seven Seas lay in upsetting the economic advantage that the United States possessed in producing excellent marine tonnage in quantity. While the United States, in one fearful and devastating decade (1855-1865), suffered from a severe business depression and a financial confidence-upsetting panic and then from the throes of national disunity followed by a devastating civil war, England was learning to build good iron ships cheaply. It was, moreover, copying the models of American wood hulls and learning much about the rig and the operation of ships—both sail and steam. Furthermore, England was overcoming a host of national economic difficulties, was producing iron and coal in quantity, and training workmen to build with metal as it acquired by purchase vessels of distinction from distressed and intimidated American owners. Of equal importance in the ultimate, Britain was developing the marine steam engine and boiler, applying screw propulsion, featuring steam as well as iron, and making the use of steam and metal ships practical for long voyages by the acquiring of strategic points and the building of coaling stations and dry docks for repairs at intermediate and terminal points on all long-distance runs.

The Civil War dealt a great blow to American shipping (both sail and steam), and the political differences between the North and South killed a highly successful and developing steam-propelled fleet in foreign trade. But it was the change from wood to iron, from sail to steam, and from paddle wheel to screw propeller—with the refusal of a disunited America to continue to be sea-minded and support the development of progressive ideas that it had initiated and was peculiarly favored by natural resources and equipment to lead—that really dealt American shipping the blow from which it never recovered. This was calamitous, for America possessed as great advantages over England and Europe in the realm of iron (and coal, fuel oil, etc.) as it enjoyed in timber; moreover, America was far more mechanical-minded than any other country and was prepared and wonderfully well equipped to lead the world in the production and operation of iron (or steel) screw steam (and other power) vessels. In THE FLIGHT FROM THE FLAG, George W. Dalzell says with reference to the change from sail to steam and from wood to iron for ocean-going vessels:

> The first paddle wheels installed on an ocean-going ship were mounted upon the American vessel *Savannah* in 1819 and were driven by a wood and coal burning engine. They were used for about one-third of her voyage as auxiliary to her sails. British builders, following this example, began to turn out auxiliary sidewheelers from 1823 on. Twenty years of trial and error proved that they could not compete with sail. They wore out so rapidly as to require replacement every four years.

They were slower than sailers, noisy, sooty, and, most serious of all, unmanageable in a high sea. It was not until the invention and practical application of the screw propeller and the multiple expansion engine, installed in an iron hull, that steam began seriously to compete with sail. The first propeller was a British ship which arrived in New York in 1845. Then followed ten years of experimentation. The first iron, screw-propelled Cunarder was placed in service in 1855. [This pioneer iron Cunarder was the *Persia* of 3,300 tons, but she had side wheels, which the line used exclusively until after the *Scotia* of 3,871 tons appeared in 1862.] Then, and not until then [1855], British steam began to challenge American sail. That was only six years before the war. Lloyd's insurance rates did not begin to favor iron hulls until 1860. In the decade 1860-1870 the tonnage of steamers in and out of Great Britain trebled. Nearly 95 per cent of these were under the Union Jack. Long before that the United States had rolling mills, machine shops, and engine builders.

The steam tonnage of the British Empire—mostly engaged in the overseas carrying trade—had increased from 204,654 tons in 1851 to 417,717 tons in 1856; whereas the steam tonnage of the United States engaged in the overseas carrying trade (excluding coastwise, inland, sound, and river steamboats) had increased from 62,390 tons in 1851 to 115,045 tons in 1855, but had decreased to 89,715 tons in 1856 and 78,027 tons in 1858. It should be noted that while a large proportion of the steam tonnage of Great Britain consisted of iron vessels, many of them being screw steamers, the steam vessels of the United States were very nearly all still constructed of wood and propelled by side wheels.

One of the first symptoms of the decline in dominant leadership of the American shipbuilder was the falling off in sales of American tonnage to foreign countries, the reduction being from 60,033 tons in 1854 and 65,887 tons in 1855 to 42,168 tons in 1856 and to 26,305 tons in 1858 and 17,418 tons in 1860—a falling off of 75 per cent in five years. It is further highly significant and indicative of a decrease in American shipping that the total tonnage of vessels built in the United States declined 20 per cent in 1856 from that of the preceding year, in 1857 had fallen 35 per cent below the volume of 1855, and in 1859 had further dropped over 73 per cent from the 1855 volume. At the middle of 1866, following the close of the Civil War, the registered deep-sea (foreign trade) vessels of the American merchant marine had declined 1,149,702 tons, or 43½ per cent from the corresponding registered tonnage of 2,642,628 tons of five years before (June 30, 1861)—but not through physical destruction. The U. S. commissioner of navigation reports that for the five fiscal years ending mid-year 1862-1866 inclusive, 796,769 tons of United States marine tonnage were sold abroad (also 26,649 tons in 1861); while 96,202 tons were sold to the government (73,269 tons in 1862). Official records show that the tonnage of the U. S. merchant marine decreased 1,119,638 tons during the four years from June 30, 1861, to mid-year of 1865. Many whalers and old packets were filled with stone and sunk at the mouths of southern harbors and in rivers in an endeavor to prevent blockade running and to close channels to Confederate naval and mercantile vessels, and the Confederate commerce destroyers took their toll of a reported 104,605 tons.

The Passing and Humiliation of the Renowned and Speedy Yacht-like American Clipper

The discovery of gold in California in 1848 and in Australia shortly after mid-century, with the associated rushes to the gold fields, gave a great impetus to emigration to these "new countries" and boomed trade and shipping to handle both passengers and freight. Speed and greatly increased marine tonnage were in demand, but the hysterical booming years were followed by a period of adjustment and then by the usual reactionary depression in the shipping—and later the shipbuilding—industry caused by overbuilding. Unfortunately, during the mania following the gold finds, when "speed was king" and but little attention was paid to economic principles, most of the vessels constructed in the United States during the years 1850-1854 were clippers, with an extreme sharp-lined model, lofty spars, and a tremendous sail spread. They required a large crew, had big repair bills, and carried but little cargo. These speedy aristocrats of the ocean, as fine and beautiful as yachts, were poor commercial vessels under normal conditions of competitive trade; but during the first two or three years of the boom, these clippers made excellent money for their owners, and some of them paid for themselves on their first passage or voyage. For a few years, this fact encouraged the building of the wrong type of sailing ship—the romantic but uneconomic clipper. For a short time, the clippers could afford to be "choosy" in regard to the trade that they would handle, but with the tremendous volume of tonnage built in the United States during the first half of the fifties, the supply of bottoms wanting cargoes in the ports throughout the world became far greater than was needed to carry available cargoes, competition naturally became severe, freight rates dropped, and many of the finest ships afloat could not find ordinary cargoes in many of the world's important ports—no matter how low they were willing to go to obtain business.

Within a relatively short time, the most "gorgeous, yacht-like and famous" clippers were glad to find employment loading the disgustingly foul Peruvian guano or even transporting Chinese coolies (two trades that would have been considered far beneath their dignity a year or two before). A couple of these beautiful ships came to grief while engaged in the China-Cuba coolie trade. The "incomparable" *Sea Witch* (908 tons; built in 1846), the maker of world sailing records that have never been beaten or equaled, ended her career when she struck a rock off the Cuban coast near Havana on March 28, 1856, with 500 Chinese coolies aboard, and the big Baltimore-built clipper *Flora Temple* of 1,915 tons (built in 1853), when bound from Macao for Havana, was wrecked on a reef in the China Sea, October 1859, with 850 coolies aboard, all of whom were lost, as were 18 of the 49 whites aboard. United States-owned clippers, after a very few passages carrying coolies from China to the Peruvian guano deposits, tabooed this trade, even though they were in great need of cargoes to make part of their return passages profitable. It was affirmed that this trade was but little, if any, better than slaving and trading in "black ivory." Ten American clippers, however, finally went under the Peruvian flag, and nine of them were bought to be used solely for transporting coolies from China to the guano deposits, so that foreign ships (most of which were American-owned) could obtain the filthy, vile smelling cargo to carry from the Chincha Islands and Callao to North Atlantic ports.

The splendid clipper *Westward Ho* of 1,650 tons (built in 1852) was the first Yankee clipper to be acquired by the Peruvians for this coolie trade. (This vessel was believed by some authorities to be one of the two fastest and most consistent sailers ever put in the New York to California around-the-Horn service.) She was purchased in 1857, as was the beautiful *Gazelle* of 1,244 tons, which had been wrecked in the Pacific in December 1854, sold, rebuilt, and renamed *Cora*. The other American clippers sold later to Peru for the coolie trade were the *Challenger* (1,334 tons), *White Falcon* (1,372 tons), *Starlight* (1,153 tons), *Twilight* (1,482 tons), *Telegraph* (1,078 tons), and *Uncowah* (988 tons); but in 1855 Peru had bought, "as she lay," the Yankee clipper *Climax* of 1,051 tons, which had sunk at Callao and had been raised and put into the Chinese coolie trade. (Later, in the early seventies, the Peruvians acquired the *Ocean Express* of 1,697 tons for general trading at a time when the guano business was getting somewhat played out and sailing ships under the Peruvian flag were becoming interested in transporting lumber, etc., on the Pacific.)

After the carrying of Chinese coolies to the Peruvian "living hell" at the Chincha Islands and other guano deposits was tabooed (not by law but by general agreement, based on experience and public opinion), some American clippers and other types of sizable American ships, actuated by an urge to maintain themselves at sea, continued for many years to carry coolies from China to Cuba and other ports. The clipper *Kate Hooper* (1,488 tons; built in 1852), bound from China to Havana in late 1857 with 600 coolies aboard, experienced a series of mutinies on the part of her belligerent "passengers," who not only tried to take possession of the ship but also set fire to her. The officers, in suppressing the mutinies, shot four and wounded and injured many of the coolies and hanged another from the yard arm. Upon arrival at Havana, the crew mutinied, as it had had enough of the horrors and dangers of carrying such "human freight"; but the law stepped in, and the ringleaders of the rebellious crew were arrested and shipped to New York to stand trial.

Among the many United States clippers that were not very particular in regard to what kind of freight they carried—so long as they could obtain some paying cargo from a Pacific to an Atlantic port on the run home—were vessels which openly cruised in the China Seas looking for a chance to pick up a load of "kidnapped coolies" for a run to Cuba. One of these vessels was the once proud clipper *Messenger* (1,351 tons; built in 1852), which, records show, in the winter of 1859-1860, was looking for a load of enslaved "yellow trash" in the China Seas and in early 1860 took a cargo of some 600 "kidnapped coolies" from Macao to Havana. Apparently, she found this business so profitable that she duplicated the passage the following year and carried 544 coolies from South China to Cuba.

Probably the worst experience of an American-owned and operated ship with Chinese coolies was that of the new *Norway* of 2,050 tons (length 210½ ft., beam 46½ ft., depth 30 ft.; built in 1857 at New York). This vessel was a packet type of ship and was unusually commodious, of great beam and depth, and had three complete decks. On the return passage of her maiden voyage, she loaded 1,037 Chinese coolies at Macao to transport to Havana and, upon arrival at the Cuban port, reported that a mutiny had developed among her "human freight" at sea, with the result that there had been battles aboard for the control of the ship. None of the officers or crew was killed or apparently wounded, but the mortality of coolies on the passage was placed at 137, of whom, it was stated, "70 were killed or died from wounds." This loss from gunfire and from deaths due to unsanitary conditions, which resulted from the fact that the coolies were battened down below decks and their physical health ignored, was deemed "necessary for the suppression of mutiny on the high seas."

The clipper ship *White Falcon* (1,372 tons; built in 1853), which served as a French troop ship during the Crimean War, was sold in January 1864 to the Peruvians and renamed *Napoleon Canavero.* This vessel was promptly put to use in carrying coolies from China to Callao and the Chincha Islands guano deposits. Early in 1866, her cargo of 650 coolies mutinied, and when they were driven below and the hatches closed down tight, they set fire to the ship, and all perished in an inferno that defies description; the officers and crew took to the small boats and were saved. A similar horrible tragedy, the British affirm, caused the loss of the American clipper *Bald Eagle* in the late fall of 1861. However, this is positively untrue, for that vessel "went missing" on a passage from Hong Kong to San Francisco, and although she probably had a few Chinese aboard, the number was insignificant, as the ship carried a very valuable "full cargo of tea, sugar and rice," and $100,000 in specie (or what was termed "treasure").

It was only a small step from carrying Chinese coolies as a "human cargo" to the carrying of Negro slaves in the "black ivory" trade, and a few American ships degenerated to real "out-and-out" slavers. The outstanding American clippers captured as slavers, with full evidence aboard to condemn them, during the suppression of the horrible slave trade, were the beautiful and fast yacht-like clipper *Nightingale* of 1,066 tons, built in 1851 at Portsmouth, N. H., for a cruising "luxury" liner, and the handsome clipper ship *Sunny South* of 702 tons, built in 1854 in New York for the New York and Rio de Janeiro trade. When captured in early 1861 on the African coast, the *Nightingale* was under the American flag and an American captain was in command; but the *Sunny South,* captured by the British in 1860, had been sold at Havana in 1859 and renamed *Emanuela.* Another Yankee clipper, the *Haidee* (395 tons; built in 1854), while operating as a slaver, was scuttled and sunk off Montauk in September 1858.

The fast extreme, or out-and-out, clipper could not be operated competitively with good carrying and more moderately manned ships of greater fullness (and carrying capacity), with shorter spars, less sail spread, and much smaller crews, repair bills, maintenance costs, and operating expenses. However, the clipper and steamer had taught both shippers and passengers the value of speed, and in all passenger travel and most cargo shipments a demand for speed existed and was an important factor in getting marine business. The days of the old "slow-poke" sailing ship were over, but the extreme clippers were too poor in cargo carrying and too high in operating costs to compete in any trade unless it was a special, protected one. Even in such a trade as the Atlantic port-California run, the medium clipper beat off the extreme clipper, and the *Flying Cloud,* "the Greyhound of the Cape Horn route," had to be withdrawn from that trade as early as the fall of 1856 because of heavy operating losses, while the slightly fuller but more conservatively sparred and canvased *Young America* and *David Crockett* continued in this protected Cape Horn trade until 1883.

Many fine American clippers were sold abroad during the depression years of the late fifties, and shipowners, who had made from fifty to one hundred or more per cent on their investment in one voyage in the days of booming business and an unprecedented demand for marine tonnage and fast transport in the early fifties, did not take kindly to a very moderate interest return on their capital in the mid-fifties. They became disgusted and then grew panicky and were willing to sell their investment for whatever they could get for it during the national business and financial depression of the late fifties. In the Civil War years, the fear of Confederate raiders, high insurance rates, the failure of the Union Navy to protect its shipping, and the inactivity of the merchant fleet (which stayed in port) caused large numbers of owners of shares in all types of American shipping—especially clippers—to sell their interests for whatever they could get for them; the foreigners (particularly the British) bought this American shipping very cheap and at distress prices, and these one-time United States vessels, which had been the pride of the nation and the admiration of the world in the early fifties, ended their days under foreign flags, contributing materially to both the decline of the United States merchant marine and the rise to world dominance of Britain in ocean trade.

The British have been apt to speak with contempt of the life of American wood ships and of Yankee clippers in particular, which they persisted in saying were built of "softwood" —a false statement—and were wracked to pieces by hard driving in a few years' time. The *Syren,* a medium clipper of 1,064 tons old and 876 tons new measurement, built in 1851 by John Taylor at Medford, Mass., was a Cape Horner for thirty-seven years, following which she was sold (in 1888) to Argentine owners and was in Lloyd's Register as the "barque *Margarida* of Buenos Aires" seventy years after she started her maiden voyage. In 1853, Fernald & Pettigrew built the medium clipper *Dashing Wave* of 1,180 tons at Portsmouth, N. H. This ship, it was said, "had good entrance lines and run, was unusually beamy and a commodious vessel; she sailed well and carried good cargoes." On March 1, 1920, when sixty-seven years old, the vessel was surveyed and pronounced in first-class physical condition. Later, she stranded when deep laden while being towed near port and was lost through no fault of her own. The extreme clipper *Simoon* of 1,436 tons, built at New York in 1852, was operating at sea as the Norwegian bark *Hovding* in 1912, when sixty years old. The clipper ship *Expounder* of 1,176 tons, built at Charlestown, Mass., in 1856, was driven hard in trade on the Seven Seas for twenty-five years. When thirty-two years old, she was rigged as a schooner and was in service in 1906, when fifty years old. The clipper ship *Competitor* of 871 tons, built at Medford, Mass., in early 1853, was the Swedish bark *Edward* in 1901, and when over forty-eight years old, she was sold to Finland. The fast Baltimore clipper ship *Mary Whitridge* of 978 tons, built in 1855, was cut down to a barge in 1886, when thirty-one years old, as she was no longer profitable to operate under sail; when surveyed at the turn of the century, she was found to be in first-class physical condition, but she was lost in 1902, when forty-seven years old, through the fault of the captain of a towboat.

The yacht-like clipper *Nightingale* of 1,060 tons, built in 1851 at Portsmouth, N. H., probably had a more varied and active experience than any vessel that ever sailed the Seven Seas. Designed as the world's first cruise ship, she made voyages in the Australian run and Britain-China tea trade. She operated as a Cape Horner in the California run and in the Orient-New York trade, made transatlantic runs, and in 1860-1861 was an "out-and-out" slaver. During the Civil War, the clipper was a fast armed cruiser of the U. S. Navy; she also carried war supplies, but in 1864 she was withdrawn from service as "infected with yellow fever." After returning to the Cape Horn California trade, the *Nightingale* was purchased in 1865 for work in the laying of a cable via Bering Strait to unite the New and Old World, and she saw some tough service in the Arctic Zone. Later, she was again a Cape Horner and in 1876 went under the Norwegian flag after several years' service in the Atlantic, Pacific, Indian Ocean, South Seas, and around-the-world voyages. From 1876 to 1893, the *Nightingale* engaged in the lumber trade in the turbulent North Atlantic. After seventeen years of hard sea work and neglect in the roughest, toughest, and most dangerous (because of ice) waters of the world, with little, if any, money being spent on her, the beautiful Yankee-built clipper was abandoned at sea after an amazingly strenuous and varied life in service on all oceans of the globe, from the Arctic to the Antarctic, for forty-two full years.

The extreme clipper ship *N. B. Palmer* of 1,399 tons, built at New York in early 1851, was abandoned at sea in the North Atlantic in 1892; she was then forty-one years old and operating under the Norwegian flag. Another extreme clipper ship, the *Wild Pigeon* of 996 tons, built in 1851 at Portsmouth, N. H., was also abandoned at sea in 1892, the same year, the same age, and meeting the same fate as the *N. B. Palmer*. The old and fast *"Pigeon"* was then operating as the bark *Voladora* under the Spanish flag. The extreme clipper ship *Sea Serpent* of 1,337 tons, built in 1850 at Portsmouth, N. H., was in her later years engaged in the North Atlantic trade under the Norwegian flag and is known to have been in service in 1890, when forty years old. The 868-ton clipper ship *Malay,* built in 1852 at Chelsea, Mass., and the 1,121-ton clipper ship *Rattler,* built in 1852 at Rockland, Maine, saw sea service under canvas for thirty-nine and thirty-eight years, respectively. The medium clipper *David Crockett* of 1,679 tons, built in 1853 at Mystic, Conn., was a transatlantic packet for a while and then a regular hard-driven Cape Horner from 1857 to 1883 (twenty-six years), following which she returned to the North Atlantic until her operation became unprofitable, and in 1890, when thirty-seven years old, she was converted to a coal barge. Most American clippers ended their days as sailing vessels on the Seven Seas not because, as the British say, they were built of "softwood" and "wracked to pieces" by hard driving but because they were of too sharp a model to carry sufficient cargo to be competitive with later-built, well-designed Down Easters. The timbers used in their construction were the same hardwoods as used in British wood vessels, and some Yankee-built wood hulls constructed prior to the clipper ship era had a life of sixty to eighty years, and one whaler still afloat recently celebrated her centennial.

Of some 445 clippers built in the United States during the clipper ship decade of 1850-1859 inclusive, 103 (or 23 per cent) came to a tragic end or became unseaworthy before they were ten or eleven years old. (One of these was scuttled off Montauk in 1858, when operating as a slaver.) Of the remaining 102 clippers, 50, or 49 per cent, were wrecked; 16, or 15.7 per cent, were destroyed by fire; 5, or 4.9 per cent, were lost by collision (one with ice); 7, or 6.9 per cent, were condemned when reaching port as a result of damages at sea; and 24, or 23.5 per cent, were abandoned at sea, foundered, or "went missing." The following is a list of the clipper ships whose careers came to an end before they were ten or eleven years old:

Name of Clipper	Tonnage	Year Built	Lost, Stranded, or Wrecked
ECLIPSE	1,223	1850	Ypala, Oct. 11, 1853.
WITCHCRAFT	1,310	1850	Hatteras, Apr. 8, 1861.
COURSER	1,024	1851	Pratas Shoal, Apr. 4, 1858.
FLYING FISH	1,505	1851	River Min, China, Nov. 23, 1858.
HOOGLY	1,304	1851	River below Shanghai, Aug. 20, 1852.
JOHN WADE	639	1851	Gulf of Siam, Mar. 28, 1859.
RACER	1,669	1851	Coast of Ireland, May 6, 1856.
ROEBUCK	815	1851	Off Cohasset, Jan. 28, 1859.
STAFFORDSHIRE	1,817	1851	Near Cape Sable, Dec. 25, 1853.
SWORDFISH	1,036	1851	Yang Tsze, July 1862.
VICTORY	670	1851	Near Cape Henry, Feb. 9, 1861.
CARRIER PIGEON	844	1852	Near San Francisco; on maiden voyage.
CHARLES MALLORY	698	1852	Brazilian coast, 1853.
FLYING DUTCHMAN	1,257	1852	New Jersey coast, Feb. 1858.
GOLDEN FLEECE	968	1852	San Francisco, Apr. 22, 1854.
GOLDEN RACER	837	1852	River Min, China, 1856.
PHANTOM	1,174	1852	Pratas Shoal, July 13, 1862.
QUEEN OF THE PACIFIC	1,357	1852	Near Pernambuco, Sept. 19, 1859.
RATTLER	539	1852	Near Norfolk, 1853.
SOVEREIGN OF THE SEAS	2,421	1852	Straits of Malacca, 1859.
TINQUA	668	1852	Hatteras, Jan. 12, 1855.
FLYING DRAGON	1,127	1853	Off San Francisco, 1862.
JUNIPER	514	1853	Near Pernambuco, Nov. 12, 1857.
LIGHTFOOT	1,996	1853	Saugor, 1855.
LIVE YANKEE	1,637	1853	Coast of Galicia, 1861.
OCEAN PEARL	847	1853	Faragona, 1864.
RINGLEADER	1,157	1853	Formosa Banks, 1863.
SAN FRANCISCO	1,307	1853	San Francisco, Feb. 8, 1854; on maiden voyage.
SEA NYMPH	1,215	1853	California coast, May 4, 1861.
SWEEPSTAKES	1,735	1853	Batavia, May 1862.
VIKING	1,350	1853	Off Simoda, June 4, 1863.
WATER WITCH	1,204	1853	Ypala, June 1, 1855.
WHISTLER	820	1853	Bass Straits, May 23, 1855.
WILD DUCK	860	1853	River Min, China, 1856.
WILD WAVE	1,547	1853	Near Pitcairn Island, Mar. 5, 1858.
ASTERION	1,135	1854	Baker's Island, 1863.
MARY ROBINSON	1,371	1854	Howland's Island, 1864.
NABOB	1,246	1854	Luzon, P. I., Nov. 1864.
STARR KING	1,171	1854	China coast, June 1862.
STING RAY	985	1854	Fire Island, Jan. 9, 1856.
DEFENDER	1,413	1855	Reef, So. Pacific, Feb. 27, 1859.
JOHN MILTON	1,445	1855	Near Montauk, Feb. 20, 1858.
NOONDAY	1,189	1855	Near San Francisco, Jan. 1, 1863.
ALARM	1,184	1856	Near Akyab, 1863.
FLYING MIST	1,183	1856	New Zealand, Aug. 26, 1862.
INTREPID	1,173	1856	Belvidere Reef, Pacific, 1860.
MARY L. SUTTON	1,448	1856	Baker's Island, Nov. 20, 1864.
SILVER STAR	1,195	1856	Jarvis Island, 1860.
WEBFOOT	1,091	1856	Dunkirk, Apr. 8, 1864.
HOTSPUR	862	1857	Paracel's Reef, 1863.

Name of Clipper	Tonnage	Year Built	Lost, Foundered, Abandoned, or "Went Missing"
BALD EAGLE	1,704	1852	Disappeared No. Pacific, fall of 1861.
DAUNTLESS	791	1852	Lost in 1853 with all hands.
JOHN GILPIN	1,089	1852	Abandoned off Cape Horn, Jan. 30, 1858. (Said to have struck submerged part of an iceberg. Later on fire.)
JOHN LAND	1,054	1853	Abandoned at sea, Mar. 25, 1864.
MATCHLESS	1,034	1853	Lost Oct. 1857 after leaving Anjer.
REPORTER	1,474	1853	Lost off Cape Horn, Aug. 17, 1862.
ROMANCE OF THE SEAS	1,782	1853	Disappeared No. Pacific in early 1863.

Continued on next page.

Name of Clipper	Tonnage	Year Built	Lost, Foundered, Abandoned, or "Went Missing"
LADY FRANKLIN	464	1852	Abandoned in Oct. 1856.
OCEAN SPRAY	1,089	1852	Abandoned in 1857.
QUEEN OF THE SEAS	1,356	1852	Foundered Formosa Channel, Sept. 21, 1860.
BLACK HAWK (of Conn.)	1,579	1853	Foundered on maiden voyage, 1854.
CLIMAX	1,051	1853	Sunk at Callao, Apr. 1855.
DAVID BROWN	1,715	1853	Abandoned No. Atlantic, June 6, 1861.
EDWIN FORREST	1,141	1853	Disappeared 1859-1860.
FLORA TEMPLE	1,916	1853	Lost China Sea, Oct. 15, 1859.
HIGHFLYER	1,195	1853	Disappeared in 1855.
ROVER'S BRIDE	376	1853	Abandoned No. Atlantic, Dec. 24, 1856.
WAVERLY	749	1853	Disappeared on voyage to Calcutta, 1862.
SANTA CLAUS	1,256	1854	Foundered Aug. 9, 1863.
LEAH	1,438	1855	Lost on her first voyage.
MANITOU	1,402	1855	Disappeared in 1859.
STAR OF HOPE	1,198	1855	Abandoned at sea, June 13, 1861.
TITAN	1,985	1855	Abandoned at sea, Feb. 18, 1858.
BLACK PRINCE	1,061	1856	Lost No. Atlantic, Feb. 1865.

Name of Clipper	Tonnage	Year Built	Destroyed by Fire
SEAMAN	546	1850	Burned at sea, Feb. 6, 1855.
STAG HOUND	1,534	1850	Burned off Pernambuco, Oct. 12, 1861.
GOLDEN GATE	1,341	1851	Burned at Pernambuco, May 26, 1856.
TELEGRAPH	1,069	1851	Burned at Savannah, Ga., Jan. 26, 1857.
JOSEPHINE	947	1852	Burned at Mauritius, June 1859.
POLYNESIA	1,084	1852	Burned at San Francisco, Mar. 1, 1862.
EMPRESS OF THE SEAS	2,197	1853	Burned at Port Phillip, Dec. 19, 1861.
GOLDEN LIGHT	1,140	1853	Burned on maiden voyage, No. Atlantic, Feb. 22.
KATE HOOPER	1,489	1853	Burned Hobson's Bay, 1862.
PHOENIX	1,458	1853	Burned Melbourne, Feb. 28, 1860.
JAMES BAINES	2,515	1854	Burned Liverpool, Apr. 22, 1858.
PRIDE OF THE SEA	1,600	1854	Burned 1854, with cargo of cotton (New Orleans to Liverpool).
HARRY OF THE WEST	1,050	1855	Burned near mouth of Mississippi, Nov. 1865.
YOUNG MECHANIC	1,375	1855	Burned at sea, 1866.
HESPERUS	1,020	1856	Burned at Woosung, 1861.
MASTIFF	1,031	1856	Burned No. Pacific, Sept. 10, 1859.

Name of Clipper	Tonnage	Built	Lost by Collision or Condemned
SEA NYMPH	526	1850	Condemned Hong Kong, Dec. 1860.
GAZELLE	1,244	1851	Condemned at Hong Kong, 1854.
NORTHERN LIGHT	1,021	1851	In collision and abandoned at sea, Jan. 2, 1861.
TRADE WIND	2,045	1851	Lost in collision, June 26, 1854.
DEFIANCE	1,691	1852	Condemned at Canary Islands, 1856; sold to Spaniards.
FLYING ARROW	1,092	1852	Condemned at Melbourne, 1856.
BONITA	1,127	1853	Condemned at Algoa Bay, 1857.
CLEOPATRA	1,562	1853	Struck wreck and foundered, Sept. 23-25, 1855.
STAR OF EMPIRE	2,050	1853	Put into Algoa Bay on June 28, 1856, and condemned.
UNDAUNTED	1,371	1853	Condemned at Rio de Janeiro, Sept. 1863.
WILD RANGER	1,044	1853	In collision, libeled and sold, 1862.

The number of clipper ships captured and destroyed by Confederate raiders is not large, but, as the following list shows, some of the vessels taken and destroyed were important and among the first flight of speedy ships with a reputation in the American merchant marine.

Name of Clipper	Tonnage	Year Built	Destroyed by Confederate Raider	Date of Capture
GOLDEN ROCKET	608	1858	SUMTER	July 13, 1861 (Caribbean Sea).
B. F. HOXIE	1,387	1854	FLORIDA	June 1862.
HARVEY BIRCH	1,482	1854	NASHVILLE	Nov. 19, 1862 (No. Atlantic).
JACOB BELL	1,381	1852	FLORIDA	Feb. 13, 1863 (north of West Indian waters).
GOLDEN EAGLE	1,121	1852	ALABAMA	Feb. 21, 1863 (No. Atlantic).
STAR OF PEACE	941	1858	FLORIDA	Mar. 6, 1863 (east of West Indian waters).
DICTATOR	1,293	1855	GEORGIA	Apr. 1863.
TALISMAN	1,238	1854	ALABAMA	June 5, 1863 (So. Atlantic; bound for China).
SOUTHERN CROSS	938½	1851	FLORIDA	June 6, 1863 (near Atlantic equator).
RED GAUNTLET	1,038	1853	FLORIDA	June 14, 1863 (near Atlantic equator).
ANGLO-SAXON	869	1853	FLORIDA	Aug. 21, 1863 (off British Isles).
SHOOTING STAR II	947	1859	CHICKAMAUGA	Oct. 31, 1863 (in Atlantic).
WINGED RACER	1,767	1852	ALABAMA	Nov. 10, 1863 (Straits of Sunda).
CONTEST	1,099	1852	ALABAMA	Nov. 11, 1863 (near Batavia, East Indies).

The great destruction to Union shipping wrought by the British-built steam commerce destroyer *Alabama* (Capt. Raphael Semmes) during the period from September 1862 to April 1864 inclusive is not reflected in the above list of Confederate captures and burning of clipper ships. Of the fourteen vessels of that type taken by the southern armed raiders, only four were captured by the *Alabama*, whereas six were taken by the *Florida* and one each by the *Sumter* (Captain Semmes), *Nashville, Georgia,* and *Chickamauga.* The *Alabama,* however, also captured on March 23, 1863, the clipper ship *Morning Star* of 1,105 tons (built in 1853), but as the cargo was British owned, the ship was released under a bond of $60,000; whereupon she proceeded to London, where the clipper was promptly sold upon arrival for £6,500.

Collapse of Shipbuilding and Loss to the Nation of Floating Tonnage

Following the shipbuilding boom in the United States, which reached unprecedented tonnage figures in the first part of the fifties, the profitable business of production collapsed. Prices of ships commenced to weaken in 1854, and during the following year (1855) of record volume of construction, the business was highly competitive and prices relatively low. The New York HERALD said in 1855: "Experienced shipbuilders pronounced the depression and gloom to be unparalleled." In New England, the price of new ships dropped 25 per cent from the price per ton obtained in 1854, and construction steadily declined throughout the whole country so that in 1859 the building of all marine tonnage of every kind and nature had declined to less than 27 per cent of that of 1855. (The official years for record are from midyear to midyear.) During the depression and panic in America following the California Gold Rush boom and during the years of the American Civil War, Britain bought American ships in quantity and at low distress prices. In the fifties and sixties (including the Civil War period, 1861-1865), the decline in both American shipping and shipbuilding—particularly of vessels built for foreign trade—was even more remarkable than their rise. The tonnage of merchant sail and of all vessels—sail, steam, and tow—built in the United States in various years during the period 1854-1872 inclusive is stated herewith, together with the percentage that the tonnage built each year is to that of the vessels constructed and documented during the record building year of 1855:

Year Ending June 30	Sail		All Vessels	
	Tonnage	Percentage of 1855 Tonnage	Tonnage	Percentage of 1855 Tonnage
1854	447,216	87.6	536,046	92.0
1855	510,690	100.0	583,450	100.0
1856	404,054	79.1	469,293	80.5
1859	121,297	23.7	156,602	26.8
1862	119,626	23.4	175,075	30.0
1863	216,812	42.4	311,045	53.3
1864	268,240	52.5	415,740	71.3
1865	238,109	46.6	383,805	65.8
1868	142,742	27.9	285,304	48.9
1871	97,176	19.0	273,226	46.8
1872	76,291	14.9	209,052	35.8

In the sixties and seventies, a good part of the tonnage built in the United States was for the coastal and inland (rivers and lakes) trade, and a steadily increasing percentage of this volume was of paddle-wheel (side and stern) wood steam. Construction was stimulated somewhat during the Civil War, but the apparent boom was artificial and temporary. Throughout the years of hostilities and the post-war period, the building of ships for foreign trade steadily declined as United States shipping, because of British aggression and American indifference, was driven from the Seven Seas.

As set forth on official records, the number and tonnage of American-built ships sold abroad during the clipper shipbuilding years, when Britain needed high-class fast ships for its Australian and other trades, were as follows:

Year	Full-rigged Ships and Barks Sold Abroad	
	Number	Registered Tonnage
1854	58	60,033
1855	70	65,887

In 1842 only 3 American-built square-riggers were sold abroad; in 1849 there were 12 totaling 12,621 tons and in 1852, 27 such craft. It was reported that during the period 1854-1857 inclusive 284 American ships and barks, or 22.3 per cent of 1,272 vessels built of this type in the United States in these years, went to foreign register. Also, statistics have been presented which indicate that 247,042 aggregate tons of United States-built square-riggers were sold abroad (principally to Britain) during the five years 1854-1858 inclusive. We are told that by 1860 "the demand in England for American ships had lessened, and only 17,418 tons were sold for foreign account."

The Civil War (April 1861 to April 1865) operated greatly to increase the sales of American ships to foreign owners, but the market was a buyer's market, and American owners, if desirous of selling, were compelled to dispose of their vessels at very low prices set by the purchasers. During the years 1860-1865, such sales totaled 937,165 tons, and for three years (1862-1864) the sales total was 718,022 tons—an average of 239,341 tons per annum. Joseph Nimmo, chief of the United States Bureau of Statistics, reported the losses to the United States merchant fleet through the activities of Confederate raiders as 239 vessels totaling 104,605 tons during the years 1861-1865 inclusive, and sales during this period have been officially recorded as 923,527 tons, or 8.8 times the loss of tonnage sustained due to activities of the commerce destroyers of the South. We are told that in 1861 Confederate raiders destroyed 11,789 tons and in 1865 a total of 14,194 tons of northern, or Union, shipping. During the three years 1862-1864 inclusive, the following tonnage of vessels was also officially reported as lost to the United States mercantile marine by (1) sales abroad and (2) depredations of Confederate armed cruisers. (The difference between these and other official

reports may be due to the fact that some figures are based on calendar and others on fiscal years or to variations between the reports and estimates of different departments of government.)

Year	Sales to Foreigners	Destroyed by Confederates	Total Removed from U. S. Register Due to These Two Causes
	Tons	*Tons*	*Tons*
1862	117,756	12,790	130,546
1863	222,199	51,710	273,909
1864	300,865	14,122	314,987

The Union Fleet of Merchantmen Is Driven from the Seas

Whereas South Carolina seceded from the Union on December 20, 1860, and six other states followed between January 9 and February 1, 1861, and whereas the Confederate States of America was organized at Montgomery, Ala., with a provisional government set up and Jefferson Davis inaugurated as president on February 18, 1861, the Civil War actually commenced (as far as hostilities are concerned) on April 12, 1861, with the firing by the southern Confederates on Fort Sumter, and ended on April 26, 1865, with the surrender of General Johnston at Greensboro following the surrender of General Lee at Appomattox on April 9, 1865. The actual fighting occupied a period of a little over four years and part of five calendar and government fiscal years. If the northern states and the Union had held the command of the seas and had adequately protected its shipping, the effect of the Civil War on the maritime interests of the United States would have been but little. Unfortunately for the country as a whole, the North proved most incompetent in the defense of its merchant marine, and gradually the Stars and Stripes passed from the Seven Seas. The commerce raiders of the confederated southern states, though actually of little potential theoretical value as fighting ships, either destroyed or drove into hiding or into foreign hands (where they would be protected by a foreign flag—usually British) enough Union vessels so that the merchant marine of the United States was reduced from a once dominating position to one of relative unimportance. The Confederate commerce raiders, built in England and manned by British as well as American Confederate sailors (but with the commanders and most of the officers Southerners), so preyed upon Union shipping that very few merchants cared to risk shipping cargo on an American vessel. Insurance rates for cargo carried in Union bottoms soared to record heights, and, of course, freight rates on cargoes carried in American vessels correspondingly advanced. Before long, practically all cargoes to and from the United States were being carried in British ships. Many American ships were deliberately destroyed in the believed interest of national (Union or Confederate) defense. The sinking of the famous, large Stone Fleet at the mouth of Charleston Harbor by Union forces in a futile attempt to prevent Confederate blockade running is illustrative of this form of volitional destructiveness. Many old whaling ships, packets, and general trading vessels were purchased by the U. S. Government and filled with New Bedford stone. The fleet sailed for Charleston, S. C., Thanksgiving Day of 1861; it was sunk and destroyed, but Confederate blockade running continued.

It is amazing that depredations committed upon the high seas by the steam Confederate raiders *Sumter, Alabama, Florida,* and *Shenandoah* (all relatively insignificant fighting ships considered from the standpoint of naval power—armament, speed, radius of action, and protection) should have driven the merchant marine of the Union off the seas, for the Union had a fair navy and ample facilities and resources to produce a sizable fleet of commerce defenders capable of hunting out and destroying all Confederate raiders. The naval record of the Union during the Civil War is nothing to be proud of; the honors lie with the South, which had no warships and but very limited physical resources to obtain them or manpower to operate them. Secretary of State William H. Seward, in his dispatch to Charles Francis Adams, United States minister in London, dated August 27, 1866, definitely asserted that the Confederate commerce raiders "were built, manned, armed and equipped and fitted out in British ports" and were "dispatched therefrom by and through the agency of British subjects"; moreover, that they "were harbored, sheltered, provided and furnished, as occasions required during their devastating career, in ports of the [British] realm or in ports of the British colonies in nearly all parts of the globe." After many years of controversy, a tribunal of five, consisting of an American, a Britisher, an Italian, a Swiss, and a Brazilian, met at Geneva and after protracted hearings handed down a decision on September 14, 1872, awarding the sum of $15,500,000 to the United States to be paid by Britain for damages caused by the three Confederate raiders *Alabama, Florida,* and *Shenandoah.* This payment—promptly made—settled all claims, but also admitted liability on the part of Britain. In the meanwhile, however, the Stars and Stripes had been driven from the ocean trade routes of the world, and the cost to Great Britain of this great boon "worth billions of dollars to the empire was only an insignificant sum." With respect to the *Alabama* (Capt. Raphael Semmes), it was admitted that the tribunal of five men voted unanimously placing the responsibility on England for the existence and depredations of that vessel, but they placed the value of the ships destroyed by the *Alabama* at the low figure of $6,750,000.

Albion and Pope, in SEA LANES IN WARTIME, write:

A picture of the sinking *Alabama,* which sold well in the North, carried the inscription, "Built of English oak, in an English yard, armed with English guns, manned by an English crew, and sunk in the English Channel." That hinted at the bitterness which the Northerners felt at England's shamelessly unneutral attitude in connection with the raiders. The vessels had been allowed to slip away from England despite the protests of Charles Francis Adams, our minister at London. British colonial officials had stretched neutrality in their ports when the raiders came in to coal and refit. In denouncing the raiders, the Northern press had been almost as violent against England as against Semmes and his fellow "pirates." There were demands for compensation; a precedent was ready at hand in the awards made by the commission created by the Jay Treaty.

Finally in 1871, England agreed in the Treaty of Washington to submit the question of damages for unneutral conduct to an international arbitration commission. This group met at Geneva in 1872 to analyze the *Alabama* claims.

Probably the total direct damage to Northern shipping and cargoes amounted to somewhere between twenty and twenty-five million dollars, about one-fifth of which represented the vessels themselves. The victims totaled nearly 100,000 tons; of that, the *Alabama* alone got about one-third; the *Florida,* with her tenders, and the *Shenandoah* accounted for another third; while the remaining third was shared about equally between the lesser cruisers and privateers. The Americans claimed plenty. Not only did they want damages for losses actually caused by those raiders, but also the amounts paid in war-risk insurance in general, and even the United States Navy's expenses of $3,375,000 for fitting out vessels to chase the raiders.

The commissioners whittled this down to the damages inflicted by the *Alabama,* the *Florida* and her tenders, and the *Shenandoah* after leaving Australia. The claims of the insurance companies were thrown out, unless they had lost money in the war period. The extravagant claims of the whalers for the oil and bone that they *might* have caught had they not been destroyed were radically reduced. The final award came to $15,500,000, including interest. It was a good bargain for England at that—to have reduced so effectively the competition of the American merchant marine, not only during the war but for a half century thereafter.

The Americans almost had a chance to return the compliment in 1878, when England and Russia were on the verge of war over the Balkan situation. Three powerful raiders, designed to prey on British shipping, were built on the Delaware on Russian account. Presumably, they would have been used to inflict heavy damage on England's far-flung commerce while American neutrals would have been in a position to have picked up plenty of cargoes. The United States would doubtless have still found it to be a good investment even had the government been assessed damages afterward. The Anglo-Russian crisis was smoothed over, however, and the Russian-American raiders missed their fun.

In the seventies, Americans remembered vividly the attitude of Britain toward the North and the "United" States during the Civil War and had kindly feelings towards czarist Russia that dated back to the Revolution, when that country declined to hire out its troops to England to wage war against the thirteen American colonies fighting for freedom. During Napoleon's day, the Russian czar had befriended United States shipping and, in doing so, had incurred the enmity of the Corsican dictator and brought on a war with France that ultimately led to Napoleon's downfall. In the Civil War, when Britain and the governments of certain European powers friendly to it favored intervention in the hope of making American disunity permanent and of weakening for all time the American nation (Britain's only great maritime rival), the imperialistic Russian Government of the czars sent two fleets into American waters—one to New York and one to San Francisco—as a warning to Britain and the European powers that it was using its influence to keep their "hands off America." Gideon Wells, Lincoln's secretary of the navy, would seem to have been fully justified during this critical period of the Civil War when he exclaimed, "Thank God for Russia." With these facts in mind, it is not surprising that in 1878 the United States seemed to be quite willing to give Britain a dose of the *Alabama* medicine in reverse.

The principal Confederate commerce raiders of the Civil War were:

Sumter, formerly *Habana.* An American steam vessel, bark-rigged, commissioned at Algiers (opposite New Orleans, La.) on June 3, 1861. Blockaded at Gibraltar in January 1862 and sold to the British. (Under the name *Gibraltar* and the British flag, she made one successful voyage through the blockade to Charleston, S. C.)

Alabama, steam bark. Built by Lairds of Birkenhead, England, as No. 290 and the *Enrica.* Sailed from builder's yard July 29, 1862; commissioned off Azores August 24, 1862; destroyed by U.S.S. *Kearsarge* off Cherbourg, France, June 19, 1864.

Florida, steam sloop. Built by Miller & Sons, Liverpool. Sailed March 1862. Rammed by a Union warship in the harbor of Bahia—a flagrant violation of Brazilian neutrality.

Shenandoah, a remodeled British merchant steamer. Left London October 1864; sailed to the Pacific, where she inflicted great injury upon the commerce of the U.S.A. (particularly whalers) and fired the last shot of the war.

Raphael Semmes (born September 27, 1809; died August 30, 1877) was a contemporary of Matthew Fontaine Maury, the famous marine geographer and "Pathfinder of the Seas," and also a Southerner. Captain Semmes was in command of the *Sumter* and, later, of the *Alabama* during the entire careers of these two ships as commerce raiders. De Leon says, "Semmes's record in the war shows attributes identical with those of Stonewall Jackson. Reticent, daring, swift to plan and reckless in execution, both sought counsel only from within and kept action apace with conception."

The exploits of Raphael Semmes once startled the world. During the War between the States, his name was a household word from Sandy Hook to the Indian Ocean. Singlehandedly, he very nearly swept the northern shipping off the seas. Nothing approaching his devastating cruise in the *Alabama,* from the Azores to the Grand Banks, to the Caribbean, to the Cape of Good Hope, to the East Indies and back to Cherbourg for the last great duel with the more powerful and better-protected *Kearsarge,* is to be found in naval annals. Semmes, known to his sailors as "Old Beeswax" (because of his long waxed mustache), was "a gallant figure—high-strung, nervous, sensitive, inscrutable, austere—and yet with a humor that ran to facetiousness; a man of genius, mature and fabulous." A figure out of chivalry, he accused Winslow of unchivalrous conduct in not warning him before the fight that the *Kearsarge* was protected by chain armor! When his "beautiful *Alabama*" was done for, he hurled his sword into the sea and leaped after it. "A man of lasting influence. The first great blow to American merchant shipping, the blow that brought stagnation enduring still, was struck by Semmes."

The *Alabama,* one of the most famous vessels in the naval history of the world, was in fact a small combination sail and steam wood vessel, carrying no armor and but a relatively light armament. As a fighting vessel, she was mediocre. Her length over-all was 232 ft., beam 32 ft., depth 20 ft.; draft loaded 15 ft.; tonnage 1,000 tons. She was equipped with two horizontal simple engines; her speed under steam was reported as only 10 knots per hour, and her maximum speed under sail and steam was said to be 13½ knots. She carried 375 tons of coal, "sufficient for eighteen days' steaming." Her armament consisted of one 8-inch and one 7-inch (100-pdrs.) rifle and six 32-pdrs., or eight guns all told, and the cost was reported as $250,000. Semmes captured eighteen northern, or Union, merchant vessels in the *Sumter* and sixty-eight in the *Alabama.* He burned fifty-nine of these merchant ships and destroyed one Union warship, the U.S.S. *Hatteras,* a purchased merchant vessel (100 tons larger than the *Alabama* and with a much inferior armament, i.e., only eight 32-pdrs.) and reportedly not only "unfit to be a man-of-war" but also handicapped in speed and mobility by a "bottom befouled with barnacles."

The following is a record of the commerce-raiding activities of the *Sumter* and *Alabama* under Comdr. Raphael Semmes:

	SUMTER	ALABAMA
Period of captures	July 3, 1861, to January 18, 1862	September 5, 1862, to April 27, 1864
Number of northern (Union) merchant ships captured	18	68
Number of northern (Union) warships destroyed	0	1
Number of captured ships burned	7	52
Number of captured ships bonded	2	11
Number of captured ships commissioned as cruisers	0	1
Number of captured ships sold to neutrals	0	1
Number of captured ships released	0	3
Number of captured ships "interned and lost"	7	0
Number of captured ships recaptured by enemy	2	0

Comdr. Raphael Semmes captured the following merchant ships, in the periods as stated, in addition to destroying the U.S.S. *Hatteras* (a lightly armed and decidedly inferior steam vessel of merchant type but flying the Union flag of the North):

Year	Number of Merchant Ships Captured
1861	16 in 6 months' time
1862	30 in 5 months' time
1863	37 in 12 months' time
1864	3 in 4 months' time
Total	86 in 27 months' time

The ships sunk by the *Alabama* and other Confederate commerce destroyers were relatively unimportant in comparison with the shipping these raiders drove out of commission. In every port, more and more American vessels laid up, with their topmasts sent down and "tar barrels over the mastheads." At Singapore, seventeen American ships were "blistering at anchor." Monthly, more and more American ships laid up in foreign and home ports or were offered for sale to foreigners cheap, and in the meanwhile, Union warships such as the U. S. frigate *Wyoming* combed the seas in vain for the *Alabama.*

The business depression, the panic of 1857, and, during the Civil War, the fear of northern shipowners of Confederate raiders (and the high insurance rates associated therewith) caused a heavy transfer of ships from the American to the British registry. There was a very definite desire expressed, particularly during the five years of the war (1861-1865), by American investors "to get out of ships and put their money into promising developments ashore." The following tonnage was officially reported as sold abroad by United States shipping interests during the years 1858-1865 inclusive:

Year	Tonnage	Year	Tonnage	Year	Tonnage	Year	Tonnage
1858	12,684	1860	13,638	1862	64,578	1864	400,865
1859	21,308	1861	71,673	1863	252,579	1865	133,832

The total as reported for the period of eight years was 971,157 tons; for the last three years of war, 787,276 tons; and for the five years (1861-1865 inclusive), 923,527 tons.

Other official statistics for the five fiscal years ending June 30, 1865, show sales of United States ships to foreigners (chiefly the British) as 801,301 tons and a total loss to the American fleet from such transference to foreign registry of 1,613 vessels aggregating 774,000 tons during the four-year period 1862-1865 inclusive. Albion and Pope write:

> The blow fell hardest on the big sailing vessels, the full-rigged ships and barks which had been the pride of the old merchant marine and the mainstay of the foreign trade. During the course of the four war years, 990 ships and barks were "sold foreign"; 213 were "lost at sea," about half of them being destroyed by the raiders; and 55 condemned as unseaworthy. Meanwhile, only 378 new ones were built, leaving a net loss of 880 of the big square-riggers. After the war, these vessels could never return to American registry, because Congress, acting in behalf of the shipbuilders rather than of the shipowners, refused to change the registry laws forbidding the transfer of foreign vessels to American ownership. Unlike the blockade which helped bring victory to the North, the Confederate raiders did not affect the war's outcome, but they had a disastrous effect in the black years of American shipping after the war.

It has been said: "The terror of the name of Semmes, coupled with the name of the *Alabama,* more than anything else drove over eight hundred northern, or Union, sailing ships to British registry during 1861, 1862, 1863, and the first part of 1864." (The *Alabama* was destroyed on June 19, 1864.)

On March 21, 1862, Commander James D. Bullock, C.S.N., wrote from England to Stephen R. Mallory, Confederate secretary of navy: "American ships are fast being put under the British flag." On July 8, 1863, Robert Bennet Forbes, shipowner and financier of Boston, wrote Gideon Welles, secretary of the United States Navy, that 146 out of 180 vessels in New York were under foreign flags, and he added: "Our commerce will soon be entirely in the hands of foreigners unless our trade is protected by every means within the power of the government." On October 22, 1863, Commander McDougal of the U.S.S. *Wyoming* reported to Secretary Welles: "Nearly all the American vessels in the China Seas have changed flags, otherwise get no employment. While at Macao three fine American vessels were put under Portuguese colors." On February 18, 1864, the Confederate Commander Bullock reported to Secretary Mallory (just four months before the *Alabama* was sunk by the U.S.S. *Kearsarge):*

> There really seems to be little for our ships to do now upon the open sea. Lieut.-Commander Low of the *Tuscaloosa* reports that in a cruise of several months, during which he spoke over one hundred vessels, only one proved to be American; and she being loaded entirely on neutral account, he felt forced to release her after taking a bond. The *Alabama* also only picks up a vessel at intervals, although she is in the East Indies, heretofore rich in American traffic.

Richard Cobden, in the British House of Commons on May 13, 1864, spoke of the amazing volume of transfers of American ships to British registry (126 in 1861, 135 in 1862, 348 in 1863) and said, "This operation is now going on as fast as ever." (The tonnage so transferred in 1864 was 1.59 times that of 1863.) He continued:

> You have been carrying on hostilities from these shores against the people of the United States and have been inflicting an amount of damage on that country greater than would be produced by many ordinary wars. It is estimated that the loss sustained by the burning and capture of American vessels has been about $15,000,000. . . . But that is a small part of the injury inflicted upon the American marine. We have rendered the rest of her vast mercantile property for the present valueless. . . . If you raise the rate of insurance on the flag of any maritime power, you throw the trade into the hands of its competitors because it is no longer profitable for merchants or manufacturers to employ ships to carry freights when those vessels become liable to war risks.
>
> I hold in my hand an account of the foreign trade of New York for the quarter ending June 30, 1860, and also for the quarter ending June 30, 1863, which is the last date up to which a comparison is made. I find that the total amount of the foreign trade of New York for the first mentioned period was $92,000,000, of which $62,000,000 was carried in American bottoms and $30,000,000 in foreign. This state of things rapidly changed as the war continued, for it appears that for the quarter ending June 30, 1863, the total amount of the foreign trade of New York was $88,000,000, of which amount $23,000,000 was carried in American vessels and $65,000,000 in foreign, the change brought about being that while in 1860 two-thirds of the commerce of New

York was carried on in American bottoms, in 1863 three-fourths was carried on in foreign bottoms.

What with the high rate of insurance [British-controlled], what with these [British-backed Confederate raider] captures, and what with the rapid transfer of tonnage to British capitalists, you have virtually made valueless that vast property [of United States merchant shipping]. Why, if you had gone and helped the Confederates by bombarding all the accessible [northern] seaport towns of America, a few lives might have been lost, which, as it is, have not been sacrificed, but you could hardly have done more injury in destroying property than you have done by these few cruisers.

During the Civil War, the panic in northern shipping circles tended to cause high insurance rates, and neither the panic nor the high insurance rates was warranted by a consideration of the facts; for it is said that the destruction of Union ships by Confederates "averaged less than one-half of one per cent" and that, even in the Far Eastern trade, it was "less than 2 per cent." We are also told that "the northern, or Union, tonnage destroyed by the Confederate raiders was practically the same as the amount of such tonnage lost at sea by shipwreck and other causes which were covered by ordinary marine insurance and for which the rates were considerably lower than the war risk of 1863." The New York Chamber of Commerce published war risk rates covering most of the years 1861-1863, which showed pronounced advances as the war continued. These rates, which are in addition to the regular marine coverage and are for war risks only, were stated substantially as follows:

	Trade			
Period	Atlantic Coast and European	West Indian	East Indian	South American and Pacific
1861	½ of 1 per cent	½ of 1 per cent	1¼ per cent	½ of 1 per cent
January-July 1862	½ of 1 per cent	1 per cent	1½ per cent	½ of 1 per cent
August-December 1862	1 per cent	2 per cent	2 per cent	2 per cent
January-April 1863	3 per cent	3 per cent	3 per cent	3 per cent
May-June 1863	4 per cent	4 per cent	5 per cent	5 per cent

Later in 1863, the South American, Pacific, and East Indian rates were increased to 7½ per cent. It is said that much higher rates than those stated by the New York Chamber of Commerce, during the periods mentioned, were actually paid by many vessels in order to obtain the desired insurance. Albion and Pope, in SEA LANES IN WARTIME, say that 10 per cent insurance for war risks was paid by several vessels during the first half of the war and that in 1863 the *Oneida*, bound from Shanghai to New York, paid 12 per cent. The insurance companies, it is well known, made a good deal of money on the rates that they charged during the Civil War, and they contributed their part in driving American merchant shipping from the seas. As Albion and Pope say:

These high rates placed American vessels at a serious disadvantage in the competition for cargoes with ships of other nations and American vessels suffered keenly in all trades, and it has been said "particularly in the European trade." A margin of three or five per cent, because of the competitive conditions prevailing, would be apt to turn what would have been a profitable voyage into one resulting in the loss of money. We are told that Yankee shipowners often had to absorb the cargo war risk themselves in order to obtain freights, and this was an expense that had to be added to the war risk they were paying on their ships and on the freight earnings, but shippers were not entirely satisfied to put their cargoes in American ships even though the owners of the ships stood the expense of the extra war insurance, for even though shippers might ultimately be reimbursed for destroyed cargo by the insurance company, the shipper, nevertheless, had the embarrassment and the annoyance of not having what might have been a very important cargo delivered to the purchaser.

It was because of such conditions that there developed what has been called "the flight from the flag" when a relatively large number of American ships, with the owners not content to keep their vessels in port or pay the high war risk premiums, were put up for sale and permitted to go to foreign ownership, and this usually at a relatively very low price.

On January 20, 1864, T. M. Gibson, president of the British Board of Trade, spoke of the tremendous increase in British shipping engaged in foreign trade and of the favorable effect of the American Civil War, with the flight of American ships from their usual ocean trade to safe home or neutral ports and to British registry. He continued: "The decrease in the employment of American shipping is very great. In the trade between England and the United States it is something like 46 or 47 per cent."

In November 1863, the NEW YORK SHIPPING AND COMMERCIAL LIST said: "Neutral vessels [primarily British] continue to receive the lion's share [of the deep-sea shipping business] as may be inferred from the fact that of some 150 vessels loaded for foreign ports, only 20 were covered by the American flag." In 1864 this authoritative publication said: "The discrimination against American bottoms is so great that neutrals are almost monopolizing European trade." In early 1865, it was said: "Neutral flags continue to monopolize the bulk of the business to foreign ports, and the fact that two more rebel cruisers, the *Shenandoah* and *Olustee (Tallahassee)* are depredating upon our commerce is not likely to help matters."

The New York WORLD of July 7, 1864, listed by name 608 vessels transferred to the British flag since 1860. About 300 other ships, we are told, had been transferred to other flags, and the WORLD attributes the losses to the "imbecility" of the secretary of the navy, which is an extreme statement, but it is undoubtedly true that much of "the flight from the flag" can be attributed to the relatively small United States Navy and the inefficiency, inactivity, and bad management of the few warships that we possessed and the lack of sense shown in building up a suitable kind of navy quickly, during the war, to protect United States merchant ships, capture Confederate raiders, and blockade by fast and well-armed steam vessels all southern ports.

On October 22, 1864, Reverdy Johnson, in a political speech, asserted:

> More than 1,000 of our ships we have been compelled to sell to foreigners because our flag furnished no protection, but on the contrary is but an incentive to the pirate's torch. They are now travelling the ocean with American freemen and property under the shelter of foreign banners. The insurance against war risks is now as high as it was in the war with England in 1812 and much higher than in that with Mexico.

Charles Francis Adams, U. S. minister to Britain, wrote letters to Lord John Russell on April 7 and May 29, 1865, in which he complained of the British policy with respect to Confederate raiders and said in part:

> That policy, I trust I need not point out to your Lordship, is substantially the destruction of the whole mercantile navigation belonging to the people of the United States. . . . It may thus be fairly assumed as true that Great Britain as a national power is in point of fact fast acquiring the entire maritime commerce of the United States. . . . In addition to this direct injury, the action of these [Confederate] British built, manned and armed vessels has had the indirect effect of driving from the sea a large portion of the commercial marine of the United States.

Adams, furthermore, informed Russell that during the Civil War ten times as many tons and six times as many ships had been transferred from American to British ownership as during a corresponding pre-war period. Hamilton Fish, secretary of state during President Grant's administration (1869-1877), wrote on September 25, 1869, in regard to the depredations of Confederate raiders: "The number of ships thus destroyed amounts to nearly 200 and the value of the property destroyed to many millions. Indirectly the effect was to increase the rate of insurance in the United States and to take away from the United States its immense foreign commerce and transfer this to the merchant vessels of Great Britain."

George W. Dalzell, in his admirable book THE FLIGHT FROM THE FLAG (written in 1940), says that "more than half of the total American merchant fleet was lost to the flag during the Civil War." He continues:

> The cruisers burned or sank 110,000 tons of it; 800,000 tons were sold to foreign owners. In addition, there was a considerable loss of tonnage, for which figures are not available by reason of the fact that some foreign powers, notably Portugal, issued licenses to American owners by which vessels were placed under the registry and protection of the foreign government under an arrangement which was intended to be temporary but in fact became permanent. The ships that were left under the American flag were the ones the foreigners did not want—old, obsolete, and nearly worthless craft.

The effect upon British shipping is dramatically summed up in a report relating to the decade 1860-1870 submitted to the Statistical Society of London by John Glover:

> Cargoes were brought to and carried from our [British] ports under the American flag in 1860 to the extent of nearly 2¾ million tons but in 1870 the quantity was little over one million; the decrease between the first and last year of the decade being 1,600,116 tons.
>
> While the American flag so decreased in our ports, British tonnage in the direct trades between the United States and the United Kingdom alone, doubled between 1860 and 1866.
>
> * * *
>
> In the same direct trade alone, American tonnage in 1860 attained the unparalleled quantity of 2,245,234 tons; by 1865 it had fallen to less than half a million. It seems to be clear from these facts that the great bulk of the trade thus lost by the American flag was gained by ours. Prior to 1860 in the India and China trade, as well as in the direct trade between the United States and the United Kingdom, the American flag had been gaining on ours. The Civil War not only stopped but reversed that process and gave a great impetus to our flag. From no quarter was such a result less likely when the decade began.

Britain profited hugely by the civil strife in America, and although a declared neutral in the war, its sympathies were all with the South. The British did all they could, outside of openly entering the war, to break up the unity and solidarity of the United States and exterminate it as a first-class marine power. Elizabeth C. Bott wrote in 1910:

> If the damage done by Raphael Semmes [of the *Alabama* and *Sumter*] to the commerce of the United States could be estimated by the value of the ships he burned and the cargoes he destroyed, ten millions of dollars might cover the account. But that was only a part, a very small part, of the total cost, a cost that grows greater and greater each year; for the damage Semmes did lives after him. He, more than any other one man, paralyzed the ocean-carrying trade of the nation. Before the Civil War, the Stars and Stripes were known on every sea and in every harbor. Next to Great Britain [British Empire] the United States had the largest share of the commerce of the world, and it seemed only a question of time, and not a long time, either, when this country [if it had a patriotic Congress] would rank first. Today America commands no sea traffic except that between its own ports, and it commands that only because the ships of other countries are excluded from sharing in the coast-wise business. Other agencies have contributed to the long-continued paralysis, but the first great blow [following the anti-subsidy steamship acts and unfriendly maritime policy of the administrations and Congresses of the fifties and the sectionalism that led to the Civil War], the one that brought the stagnation that led to ruin, was struck by Semmes.

In the forties, fifties, and sixties, Britain realized that the fight for marine supremacy was and would be between it and the United States; hence the British policy of subsidies for steamships and government encouragement to the building and operation of iron steam on normally unprofitable ocean trade routes. The Civil War gave the British the chance to complete the wreckage of the United States merchant marine that destructive and divided Congresses had begun, and they embraced the opportunity with cleverness and subtlety. It has been suggested that it would have been like Britain to attempt by force of arms to complete the ruin of its challenger during the Civil War, but Britain, in two wars, had learned the destructive power of American privateers to its merchant marine, which in the sixties was very vulnerable, so it adopted a "peaceful policy" of encouraging the South in order to split up the country, win the water-borne carrying trade of the Confederacy, and weaken the mercantile marine of the North. W. Adolphe Roberts, in his excellent biography SEMMES OF THE ALABAMA, has written:

> In a war with the United States, Great Britain's vast merchant fleet, including the very ships which Semmes had driven under her flag, would have been wide open to destruction by raiders employing the Semmes technique. This would have been true, win or lose. Semmes had demonstrated what a country with practically no navy could do against the commerce of a giant enemy. The prospect of coping with a hundred Yankee *Alabamas* was too much for England. Until defensive measures against that sort of attack had been perfected, it were better for a sea trading nation to maintain the peace at any cost. The silent counsellor who dictated Great Britain's policy in connection with the *Alabama's* claim was Semmes himself.

This indicates the reason why Britain was willing to submit to arbitration and pay a paltry $15,500,000 to the United States after it had benefited by its policy to the extent of hundreds of millions and in 1872 was anxious to have the good will of the United States, so it could do American ocean carrying—both exports and imports—and continue to benefit each year to a tremendous extent until sanity would return to its once great mercantile marine rival and the Congress of the United States would legislate to encourage and foster shipbuilding and foreign trade in American bottoms and build a modern navy.

The Death Blow to "Anemic American Shipping"

It has been said, "It was an even more extraordinary piece of bad luck for American shipping that the very event which set the pace for the clipper ships around the Horn—Sutter's gold—eventually deflected American energy, enterprise, capital, and genius inland, westward, away from the sea." During the Civil War, northern capital, timorous of war risks because of an outrageously weak and incompetent naval policy, withdrew itself from shipping. Captain Semmes' commerce-destroying exploits did immeasurably more moral than physical damage to Union shipping and thoroughly scared the shipowners and their shareholders. American investors in shipbuilding during the early fifties had been spoiled with ridiculously high profits for a year or two, and after getting geared up to extravagant and unwarranted returns, they took with ill grace the reduced profits resulting from overbuilding and increased competition and became embittered when the inevitable depression, following the boom, brought losses instead of profits during the several years preceding the war. The clipper ship era was unsound economically, as such ships could not be made to pay in normal times. During and after the Civil War, northern capital sought safety in investments ashore, and as ship construction, maintenance, and operating costs mounted, marine investments offered neither security of capital nor any such returns as did railroad construction, the development of iron, coal, and oil lands, copper and silver mines, municipal bonds, public utilities, and industrial projects on shore. The great new West was calling, and America turned from the sea in disgust (a feeling brought about by the overbuilding of fast, low-carrying capacity, and unprofitable clippers and the fear of loss at sea because of the activity of British-encouraged Confederate raiders) and looked inland to the task of developing the country from the Atlantic to the Pacific and from the Canadian to the Mexican border. Politics had killed all chances of the country's owning powerful subsidized steamship mail lines such as Britain and all other countries with marine aspirations were rapidly developing and vigorously supporting.

The transatlantic packet service, with its relatively short passages between a United States and an English port, brought an undesirable type of seaman into the forecastle of American ships, which caused that trade to be shunned by both able Yankee seamen and apprentice boys and, ultimately, by the better class of reliable, competent sailors of most maritime nations. By the forties, American boys and youths had become disgusted with the conditions aboard Yankee whaling ships and with the avaricious spirit exhibited by the owners and command of New Bedford whalers, which had displaced the old, more just and democratic, but equally highly disciplined operation of the old Nantucket ships. American youths still felt—as did their fathers—the lure of the sea, and throughout the first half of the nineteenth century, Yankee boys shipped aboard Yankee ships commanded by Yankee captains and officers to learn the seafaring life and work up from the forecastle to the cabin and quarter-deck. The clipper ship boom of the early fifties, with its fleet of large, fast, heavily canvased ships, which required big crews to operate them, brought the tough and unprincipled "packet rat" type of sailor into the forecastle of America's finest ships engaged in deep-sea trade; the lure of the gold finds in California and Australia caused the most undesirable of human riffraff to sign up on Yankee ships for deep-sea voyages; and such a low, filthy, and decadent type of man drove decent American able seamen as well as youths and apprentice boys from the forecastle of American ships. The sea in the fifties, notwithstanding the glamour of the clippers and their splendid "sporting" passages, lost its attraction for American boys, and when this happened the future of the American sailing merchant marine was doomed; for a big fleet of square-riggers flying the Stars and Stripes and dominating the trade routes of the Seven Seas required Yankee captains, officers, and a host of able seamen to handle them in the superior Yankee fashion. The world's greatest school for teaching seamanship found itself with practically no youngsters coming up, as the graduating classes sent its trained men up from the forecastle to the quarter-deck where they were in great demand.

After the Civil War, American youths, like American capital, responded to the more glittering and remunerative call of the West and the industrial development of the continent. The future of American youth was generally deemed to be ashore—not at sea. As a politically minded, divided, essentially unpatriotic, and shortsighted Congress drove American vessels from the Seven Seas, the economic conditions aboard American ships and the hopeless competitive situation in deep-sea trade (with no glimpse of a future to lighten the depressing and enveloping gloom) discouraged and killed the innate desire and traditional bent of succeeding groups of American boys to follow the sea. Young men trained in deep-sea sail made the most competent and self-reliant officers and masters of steamships, and when in the late nineteenth century it became physically impossible to operate big square-riggers because no seamen or young officers competent to do the required work could be hired and the available experienced captains were very few and rapidly passing because of age, the limited number of young men trained in steam were woefully weak to command power-driven seagoing vessels as compared with the old school skippers of Yankee square-rigged ships.

The following is a record compiled from official reports of the U. S. commissioner of navigation giving the number and tonnage of each type of sailing vessels, steamers, and of tow barges and canal boats combined built in the United States during each fiscal year beginning July 1, 1867, and ending June 30, 1900. During this thirty-three-year period, commencing when the immediate effect of the Civil War was over and carrying throughout the remainder of the nineteenth century, the gradual and steady decline in the building of deep-sea merchant sail and of steam-driven side-wheelers, with an increase in the construction of sizable screw-propelled vessels, is apparent. Nevertheless, the record high for the thirty-three-year period of 393,790 tons for the year ending the middle of 1900 is far below the 583,450 tons reported for 1855 and is substantially less than any one of the four consecutive years 1853-1856 inclusive.

The outstandingly low years for the construction of marine tonnage were 1886 and 1895, when only 95,453 and 111,602 tons of all kinds of vessels (deep-sea and coastwise; sail, steam, and barges) were constructed in the United States. The lowest tonnage built in the country in any one fiscal year during the period 1868-1885 inclusive was 157,409 tons in 1880, and the greatest amount built in any one of these eighteen years was 432,725 tons in 1874 (which followed 359,245 tons constructed in 1873). Only 34,416 tons of sailing vessels were built in 1898, and of 359 such vessels constructed that year, only one was a square-rigger and the balance all schooners (159) and sloops (199). The year 1895 was generally similar, with 34,900 tons of sailing vessels built consisting of one square-rigger, 188 schooners, and 208 sloops. In 1886 only 44,467 tons of steam vessels were built and in 1877, 47,514 tons. In these two years, of 505 steamers constructed, only 255 were screw-propelled, 187 had stern wheels for shallow-river work, and 63 were side-wheelers. There was a boom in the building of steam vessels during the four-year period 1888-1891 inclusive, when the annual tonnage of this class registered was 161,351 tons (maximum, 185,037 tons in 1891). The average number of steamers built per year during this boom period was 442 of all types and sizes, of

Year	Sailing Vessels: Ships and Barks	Brigs	Schooners	Sloops	Total No.	Gross Tons	Steam Vessels: Side-wheel	Stern-wheel	Screw-propelled	Total No.	Gross Tons	Barges and Canal Boats: No.	Gross Tons	Total: No.	Gross Tons
1868	80	48	590	192	910	142,742	88	62	86	236	63,940	656	78,622	1,802	285,304
1869	91	36	502	245	874	149,029	69	76	134	279	65,066	573	61,135	1,726	275,230
1870	73	27	519	197	816	146,340	96	90	104	290	70,621	512	59,992	1,618	276,953
1871	40	14	498	204	756	97,176	78	128	96	304	87,842	697	88,208	1,755	273,226
1872	15	10	426	194	645	76,291	154	24	114	292	62,210	706	70,551	1,643	209,052
1873	28	9	611	156	804	144,629	57	96	249	402	88,010	1,065	126,606	2,271	359,245
1874	71	22	655	213	961	216,316	63	106	235	404	101,930	782	114,479	2,147	432,725
1875	114	22	502	160	798	206,884	43	95	185	323	62,460	180	28,294	1,301	297,638
1876	76	5	424	193	698	118,672	53	98	187	338	69,252	76	15,661	1,112	203,585
1877	71	4	337	169	581	106,331	45	107	113	265	47,514	183	22,746	1,029	176,951
1878	81	7	279	165	532	106,066	58	112	164	334	81,860	392	47,577	1,258	235,503
1879	37	10	256	165	468	66,867	57	121	157	335	86,361	329	39,802	1,132	193,030
1880	23	2	286	149	460	59,057	71	95	182	348.	78,853	94	19,499	902	157,409
1881	29	3	318	143	493	81,209	55	105	284	444	118,070	171	81,179	1,108	280,458
1882	31	2	473	160	666	118,798	61	126	315	502	121,843	203	41,628	1,371	282,269
1883	33	2	567	119	721	137,046	46	90	303	439	107,229	108	21,154	1,268	265,429
1884	24	2	533	147	706	120,621	32	103	275	410	91,328	74	13,565	1,190	225,514
1885	11	0	379	143	533	65,362	39	86	213	338	84,332	49	9,362	920	159,056
1886	8	1	276	120	405	41,237	18	80	142	240	44,467	70	9,749	715	95,453
1887	7	1	258	181	447	34,633	24	69	206	299	100,074	98	15,743	844	150,450
1888	4	0	275	144	423	48,590	33	84	313	430	142,006	161	27,490	1,014	218,086
1889	1	0	296	192	489	50,570	28	87	325	440	159,318	148	21,246	1,077	231,134
1890	10	0	347	148	505	102,873	26	99	285	410	159,045	136	32,204	1,051	294,122
1891	13	1	447	272	733	144,290	28	111	349	488	185,037	163	39,975	1,384	369,302
1892	8	0	423	415	846	83,217	26	105	307	438	92,931	111	23,885	1,395	199,633
1893	8	1	303	181	493	49,348	19	93	268	380	134,308	83	27,923	956	211,639
1894	3	0	253	221	477	37,827	26	61	206	293	83,720	68	9,648	838	131,195
1895	1	0	188	208	397	34,900	17	70	161	248	69,754	49	6,948	694	111,602
1896	2	0	215	152	369	65,236	25	84	177	286	138,028	68	23,832	723	227,096
1897	1	0	160	177	338	64,308	20	88	180	288	106,153	265	61,771	891	232,232
1898	1	0	159	199	359	34,416	15	170	209	394	105,838	199	40,204	952	180,458
1899	3	0	223	194	420	98,073	14	182	243	439	151,058	414	50,907	1,273	300,038
1900	4	0	281	219	504	116,460	19	117	286	422	202,528	521	74,802	1,447	393,790

which 318 were screw-propelled (mostly quite small), 95 were stern-wheelers, and 29 side-wheelers. In 1900, when 422 steam vessels of a total of 202,528 tons were built and registered, 117 of them were stern-wheel shallow-river craft and 19 side-wheelers. In some years, the tonnage of barges and canal boats expressed as a percentage of the total tonnage built was relatively quite large, being 35 per cent in 1873, 26½ per cent in 1874 and in 1897, and 19 per cent in 1900.

From the turn of the century to the commencement of the first World War, the pathetically small United States deep-sea merchant marine handled only some ten per cent of the country's foreign business (exports and imports combined). In 1908-1909, when the United States Government ordered a "demonstration cruise" of a squadron of its navy around the world under Rear Admiral "Bob" Evans, foreign admiralties were amused and American naval officers mortified when it was quickly found that the fleet was dependent on foreign merchant vessels for fuel and supplies. The trim United States warships had to have wallowing astern of them, as they circumnavigated the globe, a fleet of foreign tramps, so that the naval vessels could be kept supplied with operating necessities—or so that "the warships' men and engines could eat."

The first World War demonstrated American dependence upon foreign maritime powers, primarily Britain, for ocean transport. Not until this war of 1914-1918 did the United States pay any attention to its merchant marine, and the La Follette-Alexander seamen's law of 1915 should have been termed "a bill to give the death blow to anemic American shipping," for it promptly caused the abandonment of the few foreign trade shipping lines then being serviced by American vessels. Following the commencement of hostilities abroad, the United States began a frenzied campaign to buy ships and build ships, and this without regard to cost and quality. From the start of the war to the entry of the United States into it, the country paid over a billion dollars to foreign shipowners and later spent three billion dollars on a shipbuilding program and tremendous sums of money for the carrying of American troops and military supplies in foreign ships. The United States found itself in a helpless position because of a lack of ships in 1914, and the belligerent powers in each of the groups of nations at war knew the situation full well. Years before, a German economist had said, "America without her own merchant marine is like a bird without wings or a fish without fins." Alfred H. Haag, Director of Research of the Maritime Commission, addressing the American Merchant Marine Conference in 1935, which sought at that late date to "re-establish the merchant marine," said:

> To compute the price America has paid for her weakness upon the seas we must refer to the years immediately following the Civil War. . . . Had we maintained a strong merchant fleet in the foreign carrying trade for the half century preceding the [first] World War, it is reasonable to assume that we would have carried at least half of our commerce in our own ships and the revenues derived therefrom would have increased our national income by nearly three billion dollars. Allowing ten million dollars annually for government aid to American ships, which would have been ample for those years, the cost to the government for the entire fifty-year period would have totalled 500 million dollars. Thus the possession of such a merchant marine would have brought us an additional national income six times greater than the sum that would have been spent to establish and maintain it.

A merchant marine is necessary to the safety and welfare of the United States. With this fundamental truth thrust upon us vividly by the experience of World War I, first as a neutral and then as a belligerent, yet nothing really constructive and definite was done in regard to the matter until the Merchant Marine Act of 1936, although politicians and every thinking American citizen must have known full well that the failure of the United States Government to develop a large and efficient merchant marine and a shipbuilding industry from mid-nineteenth century on was not only shortsighted and eventually outrageously costly but also suicidal and a crime against the nation as a whole.

The "Down Easter"—the Highest Development of the Merchant Sailing Ship and a Sound Economic Type That Survived to the End of Sail

Wood clipper ships came to their perfection in the early fifties, and composite-built clippers, which were relatively small ships and all British built, reached their zenith of quality and speed at the close of the sixties of the nineteenth century. There were very few, if any, real extreme, or "out-and-out," iron clippers built, but what were popularly designated as "iron clippers," which were relatively fine-modeled fast sailers, had their "innings" in Britain for a period of some twenty years between 1865 and 1885. Toward the end of the sixties, the United States made some determined efforts to fight back and re-establish itself on the seas with wood and sail. McKay, after twelve years of inactivity in the direction in which his genius lay, built in 1868 a ship of medium-full model, the *Sovereign of the Seas II* of 1,502 tons, and made his grand final gesture in 1869 with the *Glory of the Seas,* a medium clipper of 2,102 tons. This was the year (1869) when, by a queer coincidence, the Suez Canal was opened (sixty-eight vessels of various nationalities making the passage after the formal opening of November 17), and an all-rail connection was established on the line of the Union Pacific and Central Pacific, spanning the American continent and bringing the Pacific in close communication with the Atlantic. McKay and other prominent American wood shipbuilders failed in their attempted "come-back," and New York and Boston passed permanently out of the picture as builders of wooden sailing vessels. When all seemed lost and hopeless, however, the state of Maine—with Bath on the Kennebec River as the shipbuilding metropolis and principal port of registered ownership of sailing vessels—came more conspicuously into the picture and refused to see wood shipbuilding killed and "knocked out" for all time. When McKay, at fifty-nine years of age, quit as a builder of Yankee wood square-riggers, Maine picked up the gauntlet and for a quarter of a century, with its Down Easters and Cape Horners, fought a great fight for survival, in which many victories were won and profits made. The Stars and Stripes was kept flying on new, well-designed, economic, and staunchly built wooden Down Easters for another quarter of a century (1869-1893), and before ultimately abandoning the fight against steam with sail, the shipbuilding city of Bath, rich in traditions, carried on for a further decade (1894-1903) by building large steel four-masted shipentines for deep-sea and around-the-Horn service.

In the fifties, American shipyards from Maryland to Maine were busy. The American merchant marine of the first decade following the middle of the nineteenth century stood at the forefront of the world's maritime activities. Boston and environs in Massachusetts and New York had proved themselves; but shipyards all along the coast were busy launching ships, and Newburyport, Mass., Mystic, Conn., Portsmouth, N. H., and Bath, Maine, had established themselves as shipbuilding communities of prominence and worth. In the late eighteenth century, the principal wood shipbuilding center in the United States was probably on the Chesapeake around Baltimore. The tonnage-building center then gradually moved north and east, with the Delaware the American shipbuilding center in the early years of the republic and New York in the 1820's to 1840. Gradually, the scene of building activity had been shifting to Massachusetts, with Boston as the hub; later, the center moved farther east, and Maine, which had been the pioneer, became the last and the greatest of all the wood shipbuilding states of the Union, with Bath, "The City of Ships," its marine metropolis.

Bath, Maine, the cradle of shipbuilding in the Western Hemisphere and the "New World" and the greatest site of wood shipbuilding in the history of all nations, did not take kindly to the idea of building fine-lined and overcanvased clipper ships of small carrying capacity for their dimensions and cost. A leading Bath shipbuilder of Scotch-Canadian stock

—canny and experienced in business as well as in the construction and operation of ships—well expressed the attitude of Bath (and Down East) shipbuilders toward the extreme clipper when he said in 1851: "We will build only ships that we know are right, that we can stand behind, and that will give satisfaction now and in ten years or more from now; ships that will make money and carry good cargoes at a profit when freight rates get back to normal. We will not throw a ship together in two or three months to please an owner when we know that to build her properly requires twice that time, and we will not build an extremely fine-lined and oversparred ship for the mercantile trade; for ships can be operated only when they make money, and all these sharp and lofty clippers will be laid up when the present boom —which can last only a year or two at the most—has passed. We will build ships that are fast, carry good cargoes, and can be operated with moderate-sized crews and low repair bills; ships that on the basis of cost of transporting cargo per ton-mile per year will be so far ahead of the fine-lined, overcanvased clipper, with her big crew, big repair bills, and low cargo-carrying capacity, that there can be no comparison drawn whatever in the mind of any business man. We will build ships that may take 130 days instead of 100 to 110 days to reach California, but our ships will carry about one and a half times as much cargo, need a smaller crew, and require much less maintenance expenses and a much lower total operating cost. Then, our ships will last twice as long as these fine-lined, big-sparred clippers, and they will be in their prime when the clippers are either wracked to pieces in unprofitable trade or rotting in idleness."

It was this longheaded and thoroughly sound policy—a sort of "confession of faith"—of the old Bath wood shipbuilders that kept Bath and the state of Maine somewhat in the background during the emotional and erratic clipper ship era, but which drove them to the fore and kept wood shipping "on the map" in Maine when the wood shipbuilders of all other sections of the country and of the world had been driven out of business. Bath, Maine, the Yankee "City of Ships," commenced the real fight for the survival of wood square-riggers when McKay (eleven years before his death) passed from the conflict. Bath wood square-riggers were built for twenty-four years after McKay's last product was sent to sea, and steel square-riggers were built at Bath forty-five years after McKay had reached the zenith of his achievements and practically withdrawn from the field of wood shipbuilding—thirty-three years after the McKay star had finally set and twenty-two years after his death.

Howard I. Chapelle, in History of American Sailing Ships, says:

> The movement of wooden shipbuilding away from New York in the sixties made Maine supreme in American shipbuilding in the seventies and eighties. The part of Maine shipbuilders and designers in the history of American Sailing Ships has never received full recognition. The so-called Down-Easters that followed the clipper were almost wholly the work of these men. Some of these vessels were without doubt the highest development of the sailing ship, combining speed, handiness, cargo capacity and low operating costs to a degree never before obtained in any earlier square-rigger. Some of the later ships were as full-ended as packets, but most of the Down-Easters were medium sharp. Though not as heavily sparred and canvassed as the clippers, the Down-Easters, nevertheless, had enough sail area to drive them at great speed.

The clipper ship era was necessarily a short one, for fine-lined vessels built for extreme speed, with yacht-like underwater models and a low block coefficient, were very inferior cargo carriers, and with normal freight rates they could not carry enough paying cargo to make their operation profitable. Gradually, in the late fifties, the clippers had their spars shortened and sail areas reduced to lessen operating expenses, and their crews were cut down, but nothing could be done to make an extremely fine ship carry cargo at a cost per ton-mile that would compete with a medium-full, well-modeled hull carrying a good practical spread of canvas with a well-designed spar, rigging and sail plan and a relatively small crew. The extreme, or "out-and-out," clippers and most of the so-called "moderate," or "medium," clippers carried very small cargoes and big crews. These clippers were costly to build, and they "proved prodigal ventures on routes that paid normal freights." The Yankee clipper *Reporter* of 1,474 tons, costing $80,750 to build, was described by her captain as a fast ship, "but," he said, "she is a 1,000-ton ship for freight and a 2,000-ton ship to man and keep in repairs." Such ships could not possibly compete with medium hulls carrying a well-balanced spread of canvas when the soaring freights to California and the Australian immigrant traffic vanished, the Crimean War ended, and the French began to subsidize sailing craft.

The great fleet of Bath-built full-rigged three-masted wood ships known as Down Easters had excellent models of medium fullness and conspicuously good cargo-carrying capacity; they were well and durably rigged and both fast and handy. Their bottoms were sheathed with copper, and the vessels proved very superior, in maintained or average speed on long voyages, to the rapidly fouling iron ships of Britain and other foreign countries. Also, these Down Easters led the world for economic operation with respect to maintenance and cost of repairs (hull, spars, and rigging) and in the driving power, quality of command (in both a commercial and naval—maritime and navigation—sense), resourcefulness and initiative of their American northeastern, and generally state of Maine, skippers. American costs of wood ship construction gradually became more than the cost of building iron ships in Britain, and the costs of operation—as far as wages for crew and officers are concerned—have always been much higher in the United States than in any foreign maritime country. Notwithstanding such handicaps, the state of Maine Down Easter held its own for twenty-five years in competition with the more cheaply built and more cheaply operated British iron ship. If it had not been for the British control of the insurance companies and for an arbitrary and partisan British Lloyd's, the state of Maine and Bath-built Down Easters would have successfully competed with the British or with any other foreign-built iron sailing ships as long as full-rigged three-masters were built, which means a tonnage limited to about 2,500 tons. For the vessels of this size, wood construction proved entirely satisfactory, and three masts—either ship- or bark-rigged—were both practical and relatively economic in operation. As ships closely approached or exceeded 3,000 tons in size, four masts became necessary, and wood ships of this size, unless they were stiffened and braced with metal to a great extent (and beyond where the builders were willing to go), were likely to show structural weakness under certain conditions of lading in very heavy seas.

During the last half of the eighties, there was a lull in shipbuilding. In 1889-1892, the Sewalls, of Bath, Maine, built their "Big Wood Four," *Rappahannock, Shenandoah, Susquehanna,* and *Roanoke,* the last three of which were four-masters carrying yards on the first three masts, i.e., shipentines. In 1893, Minott, of Phippsburg (Bath), Maine, built the *Aryan,* a three-masted ship and the last square-rigged wood ship built not only in the United States but also in the world.

The last spurt in building sailing ships in Britain was the steel windjammer boom of from 1888 to 1893, which has been termed "the short boom of the early nineties," when "great, full-bodied steel carriers" were built. This period saw the commencement of the last desperate fight of sail against the cheaply run, "jerry-built and overinsured," steel steam tramp.

Maine did not create its first iron shipyard until 1890, when the Bath Iron Works (Gen. T. W. Hyde, president) was organized, and then not to build iron sail but war vessels, merchant steamers, yachts, and miscellaneous government craft. The first shipyard in the United States laid out and equipped to build iron sailing ships was that of the American Shipbuilding Company located at Philadelphia near the national iron rolling mills and foundries. It was organized by Commander Gorringe of the United States Navy, and the ambitious plan was to build iron Down Easters on the Delaware River which would be better ships, carry more, and enjoy better insurance rates than the splendid wood Down Easters such as the *Henry B. Hyde* and *A. G. Ropes,* built about the same time on the Kennebec River at Bath, Maine. The iron shipyard of J. Roach & Son at Chester, Pa., had built the first American full-rigged iron ship, the *Tillie E. Starbuck* (2,033 tons), in 1883. The new American Shipbuilding Company built the *T. F. Oakes* (1,977 tons) in 1883 and the *Clarence S. Bement* (1,999 tons) in 1884 and then "folded up." All of these three ships were slow and branded as failures; they were decidedly inferior to wood Down Easters and soon proved that they could not compete with them in any deep-sea trade.

The first successful shipyard on the entire American Continent to build iron (or steel) sailing ships was not developed until the Sewalls, of Bath, Maine, converted their wood shipyard to a steel shipbuilding plant in 1894, by which time in other countries the death knell had been sounded even for steel sail and such craft were rapidly passing and being replaced by steam. Feeling the need of building big and full four-masted ships (shipentines) to compete with the steel tramp steamers, the Sewalls were compelled to turn from wood to steel construction—partly because of structural strength and carrying capacity to be gained but primarily because of the discrimination in insurance rates (both ship and cargo) enforced by British underwriters in favor of steel hulls no matter what materials might have been used and metal stiffening and bracing adopted in wood hulls. From 1894 to 1902, there were built in Bath, Maine, eight large four-masted steel shipentines and one three-masted steel bark (also a five-masted steel schooner). Square-rigged sailing ship construction in the United States terminated for all time in 1903, or ten years after the last wood sailing ship had been built. The last merchant deep-sea square-rigged sailing ship built in the United States was constructed on the Kennebec River at Bath, Maine, 296 years after the first sailing ship built in America had been launched into the same river from the same west bank at its mouth. The story of American deep-sea merchant sail covers a scant three centuries of construction (1607-1903) and, of operation, from 1607 to the end of the first World War of the twentieth century or shortly thereafter.

Samuel Eliot Morison truly says, "It was Maine . . . that kept the U.S.A. flag afloat at the spanker gaff of sailing ships." The shipbuilder of Bath, Maine, knew a wooden ship from stem to stern and keel to trucks. "There the slowly dying art of the wood shipwright was treasured and preserved, the industry boomed and romanticized, and the steel plate worker and riveter—the scorned 'black squad'—kept at a distance for many years after metal had defeated wood in every other shipbuilding center of the world."

The Passing of the Sailing Ship

In four centuries the sailing ship developed from a poor and very small craft that voyaged timidly—hugging the shore and stowing most of the canvas at night—into a thing of power, capacity, speed and life, which braved all seas and weathers at all seasons of the year. The American-built Atlantic sailing packets, clippers, and Down Easters were driven, under canvas, as relentlessly during each hour of the day and night as is the modern, mammoth, multiple-screw, high-powered ocean express liner. However, the life on a sailing ship —for both officers and crew—was a hard one, and whereas the passing of the square-rigger is associated with a great loss of romance and adventure, there has been gained by the mechanization of ocean transport better conditions at sea, more reliability, and greater safety. The loss of the beauty of full-rigged ships as ocean carriers has been offset or compensated by a gain to humanity as far as the necessary work of sailors is concerned. As a matter of fact, in the twentieth century, aside from the matter of capability, men who would be willing to try to man sailing ships could not be found in anywhere near sufficient numbers to operate even a small part of the world's needed ocean trade; the work is too severe, demanding, and hazardous.

Sailing vessels with imposing spreads of canvas were not necessarily clipper ships, and all of the fast ships built of wood or metal from the sixties on (excluding some small British-built tea clippers) were not in reality clippers at all—notwithstanding the fact that they were so designated both by builders and owners. In the seventies some sharp-ended and fast medium clippers were built with low block coefficient, which means relatively small cargo-carrying capacity; with the dawn of the eighties and the ever-increasing competition of steam, sailing shipowners had to decide whether or not it was more economic and profitable, in the ultimate, to own and operate ships that made relatively slow passages with big cargoes or ships that made fast passages with small cargoes. They learned by experience that naval architects could not give them both speed and capacity. For a while in the eighties, some well-modeled, well-canvased ships, which were merely medium full-bodied sailers (but which, fortunately, were given very full midship cross sections and reasonably fine ends), proved an excellent compromise, and for years well-designed sail fought with a good measure of success against steam. At the turn of the nineties, however, the economic operation of steam had materially improved, advances in steam engineering and in steamship design were occurring with regularity, and the fight of sail against steam was generally considered hopeless. The conflict was a bitter one. Low freight rates prevailed throughout the Seven Seas, and a cargo carried by sail at a relatively slow and uncertain speed, with fixed operating charges per diem (no matter what the duration of the voyage might be), could be made profitable—or even to cover expenses—only if it was a big cargo. Big cargoes could be carried only in large, full-bodied hulls such as the models used by tramp steamers; therefore, big windjammers were built—four- and even five-masters—with full midship section carried farther and farther forward and aft, with the bow lines made correspondingly fuller and the run aft correspondingly contracted. The last of the windjammers, while beautiful under sail because of their spreads of canvas, were in fact brute-like tramp steamer models driven by the sheer force of tremendous sail areas.

By the end of the nineteenth century, the older well-modeled, medium-sized sailing ships, with their growing repair bills, heavy insurance rates, and relatively low cargo capacity, were certain money-losers. In the Atlantic-Pacific, around-the-Horn run, American ships were benefited by coastwise trade shipping laws, but they had to combat cheap and relatively fast transportation by transcontinental rail benefited by a greatly reduced mileage. In open competition on the Seven Seas, fine-modeled ships—whether old or new—and all the older sailing craft dating from clipper and post-clipper days were doomed in an economic sense. As the twentieth century approached, the improved and economic steam tramp of size and reliability slowly but surely drove the best of the older sailing craft out of existence and later proved a successful rival of the big full-bodied "four-posters" and "five-posters," which, though "built of steel by the yard and merely cut off and folded in on the ends," found great difficulties, as the first decade of the twentieth century advanced, in obtaining profitable or even "pay-your-way" charters—and this notwithstanding the fact that these mammoth sailing hulks, carrying their four to seven thousand tons of paying freight, were manned by crews (using steam winches) that would not have been deemed sufficient to operate little 500-ton clippers in the middle of the nineteenth century.

The history of United States square-rigged sailing ship construction can be divided generally into the following periods, which cover some 120 years of time (of building, not operation) following the peace of September 3, 1783, and include the entire nineteenth century:

Early development period	1783-1812
General traders and early packet period	1812-1835
Packet ship era	1835-1855
Early so-called "clipper" or China packet period	1840-1850

California clipper ship era	1850-1854
Australian clipper ship period	1852-1857
Medium clipper ship period	1854-1868
Medium model Down Easters	1868-1885
Full-bodied post-Down Easters—wooden	1889-1893
Full-bodied post-Down Easters—steel	1894-1902

The full-bodied Down Easter period had associated with it the development on a large scale of the wood coasting schooner, and for this type of vessel the following approximate periods can be stated:

Medium-bodied two-, three-, and four-masted schooners	1872-1890
Full-bodied four-masted schooners	1890-1898
Full-bodied large four-, five-, and six-masted schooners	1898-1910
Full-bodied rigged towing barges	1896-1904

The building of wood square-riggers terminated in the United States in 1893 with the construction on the Kennebec of the three-masted ship *Aryan,* and the last steel square-rigger, the *Atlas,* was also built on the historic Kennebec in 1902-1903.

Every year while wood deep-sea ship construction lasted, following the clipper ship and sailing packet eras, large gangs of lumbermen were employed cutting ship timbers in forests as far south as Virginia and the Carolinas and, also, cutting high and straight Oregon pine trees on the Pacific Coast for spars for Maine-built wood square-rigged vessels to sail the Seven Seas. Of the many shipbuilding sites in the state of Maine, Bath, on the Kennebec River, stands forth pre-eminently as the leader, the unquestioned, greatest, and the best. The Bath yards that were particularly conspicuous during the last wood square-rigged shipbuilding era were those of the Sewalls, the Houghtons, Flint & Chapman, Goss, Sawyer & Packard, Rogers, Minott, etc. Bath, Maine, from the eighties to the time of World War I also led the world in the building of large fore-and-aft-rigged sailing schooners for coastwise trade, the climax for size being reached with the building in 1909 of the 3,731-ton six-master *Wyoming* by the firm Percy & Small, Bath's most famous builder of schooners. Bath also constructed the only steel square-rigged deep-sea merchant ships built in the United States. These vessels were constructed in the Sewall yard on the Kennebec during the years 1894-1903 and were in steady operation up to the first World War of the twentieth century. Whereas two of the steel fleet of four-masted shipentines (the pioneer *Dirigo* and the large *William P. Frye*) were sunk by the Germans, the others survived the war and continued as long as possible in foreign long-distance trade, being finally forced because of economic conditions and operating losses, to get into such "letdown" occupations as salmon packing on the Northwest Coast. When it became impossible to obtain competent officers and experienced sailors to man American square-riggers, even this makeshift business was terminated, and the vessels were sold on a salvage metal basis; some went under foreign flags and evidently were not sent to the shipbreaker immediately, for there is a record showing that the Japanese used one or more of the big Sewall-built shipentines for a time in the Australia and South Pacific trade.

Arthur Sewall & Company, of Bath, Maine, constructed in the late eighties and early nineties its last four big wood sailing ships; these were the three-masted ship *Rappahannock* of 3,185 tons and three four-masted shipentines: *Susquehanna* of 2,744 tons, the popular and successful *Shenandoah* of 3,406 tons, and the massive *Roanoke* of 3,539 tons—the largest deep-sea square-rigged wood sailing vessel ever built and sent to sea. After this quartet of large wood square-riggers was built, the Sewalls changed over their yard, located on the west bank of the Kennebec River at the north end of Bath, for the construction of steel deep-sea square-riggers, building at this plant—in addition to a schooner and a towing barge—the following nine square-rigged vessels (five for their own account as managing owners and four by contract with others) before they closed down the yard in 1903 and admitted the end of merchant sail for foreign trade:

Name of Vessel	Year Built	Tonnage	Remarks
DIRIGO	1894	3,004	Four-masted shipentine. The first steel sailing ship built in America. Lost during the first World War in English Channel on May 31, 1917, being shelled and blown up by a German submarine.
ERSKINE M. PHELPS	1898	2,998	Four-masted shipentine. The fastest vessel of the Sewall steel fleet. When her sailing days were over, she was converted to an oil-carrying tow barge.
ARTHUR SEWALL	1899	3,209	Four-masted shipentine. Disappeared in the winter of 1907-1908 and believed wrecked near Cape Horn. Posted as missing at Lloyd's on Feb. 5, 1908.
EDWARD SEWALL	1899	3,206	Four-masted shipentine. Later a salmon packer and named STAR OF SHETLAND. Sold to Japanese in 1936, when thirty-seven years old.
KAIULANI	1899	1,570	Three-masted bark. Built for San Francisco-Hawaiian owners; later a salmon packer named STAR OF FINLAND. Still in service in 1944, when forty-five years old.
ASTRAL	1900	3,293	Four-masted shipentine. Built for Standard Oil Co.; later a salmon packer named STAR OF ZEALAND. Sold to Japanese in Aug. 1935, when thirty-five years old.
ACME	1901	3,288	Four-masted shipentine. Built for Standard Oil Co.; later a salmon packer named STAR OF POLAND. Wrecked on Katsura Island in the Japan Sea in 1918, when doing U. S. Government work.
WILLIAM P. FRYE	1901	3,374	Four-masted shipentine. The last of the square-rigged ships built by the Sewalls to go under their own management. During the first World War, sunk in No. Atlantic on Jan. 28, 1915, by the German converted raider PRINZ EITEL FRIEDRICH, ex-North German Lloyd Co. liner, when carrying a cargo of wheat to Britain.
ATLAS	1902	3,381	Four-masted shipentine. Built for Standard Oil Co.; later a salmon packer named STAR OF LAPLAND. Sold to Japanese in 1936, when thirty-four years old. The last square-rigger built in America.

Only three steel schooners were built on the Atlantic seaboard: the mammoth and impractical seven-masted *Thomas W. Lawson,* at Quincy, Mass., in 1902, the six-masted *William L. Douglas,* also at the Fore River, Quincy, plant in 1903, and the five-masted *Kineo,* at the Sewall shipyard in Bath, Maine, also in 1903. The first six-masted wood schooner was built in 1900 and the last in 1909. The first big towing barge—bald-headed schooner-rigged—was built in 1896, and such construction terminated in 1904. The year 1910 marked the close of wood shipping in the United States until such shipping was revived and stimulated temporarily in the emergency brought about by the first World War, when a large number of wooden vessels, generally steamers, were built because of the crying need for every available kind of floating tonnage. With the signing of the Armistice in November 1918, the curtain was permanently rung down not only on wood shipbuilding in the United States but also on the operation of wood and steel sailing vessels. America became (as Britain in the eighties) a country of steel and steam, to which—because of engineering developments—were added oil fuel, steam turbine and electric motor drive, water-tube high-pressure boilers, superheated steam, etc., and, last but not least, internal combustion engines and vessels of the Diesel motor type.

In addition to the transcontinental railroad lines, which naturally took business away from the California Cape Horn square-riggers, some of the trade went for many years during the era of merchant sail from the East Coast Atlantic ports to the West Coast Pacific ports by water, with a transit of the Isthmus of Panama first by trail and caravan and, after the middle of 1855, by a steam railroad built by Americans. Actual work on the digging of the Panama Canal was commenced by the French on June 20, 1882, and construction was discontinued in 1889. The rights and property of the canal (including the railroad) were purchased by the United States on June 28, 1902, and the Canal Zone occupied on May 4,

1904. The first steamer passed through the Panama Canal on August 3, 1914, and it was officially opened to commerce on August 14, 1914. The Panama Canal reduced the theoretical distance by water from New York to San Francisco from 13,135 miles to 5,262 miles—a saving of 7,873 miles. The opening of the Panama Canal in 1914 and the first World War (1914-1918) spelt the end of mercantile sail not only for the United States but also for the entire world. The Panama Canal did for Western Hemisphere trade in 1914 what the Suez Canal had done for Eastern Hemisphere trade in 1869.

The conditions brought about by the World War of 1914-1918 gave a new lease of life and a boom to sailing craft, as to all other floating tonnage, but sailing vessels were admirable targets—because of visibility and helplessness—for German submarines. With the war and the opening of the Panama Canal in 1914, the sailing ship as an honest, economic method of transportation on the oceans and trade routes of the world passed out of existence. Occasional wheat races in old sailing vessels, when ownership and the economic conditions surrounding purchase and operation are properly evaluated, prove beyond doubt that the glorious "Era of Sail" on the Seven Seas has passed beyond recall and that steam, oil, and electricity have displaced canvas for all time as means of propulsion.