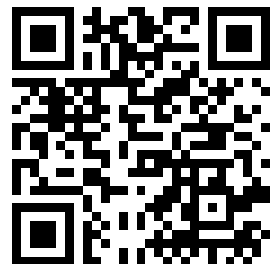

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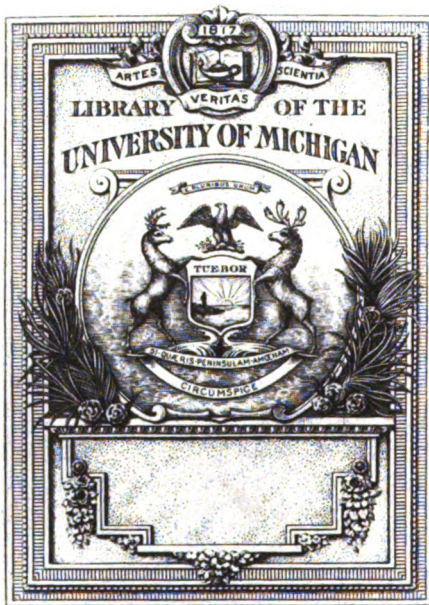
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MERCHANT SAIL



WILLIAM ARMSTRONG FAIRBURN



THE GIFT OF
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MERCHANT SAIL

VOLUME IV

MERCHANT SAIL

BY

William Armstrong Fairburn

[1876-1947]

Naval Architect and Marine Engineer
University of Glasgow, 1897

IN SIX VOLUMES



Volume IV

*United States Merchant Sail in the China, Australia, Manila, and
India Trades; Development of the Schooner Rig and Its Use
in Coastwise Service; Last Days of Deep-Sea Sail*

This volume was arranged and edited for the
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ETHEL M. RITCHIE

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CONTENTS

| | Page |
|---|------|
| XVIII. THE CHINA TRADE | |
| The Most Venturesome Branch of the Early United States Merchant Marine and Second in Importance Only to That of the North Atlantic. | 2159 |
| The Era of the Fast American China Packets of the 1830's and 1840's. | 2163 |
| The Repeal of the British Navigation Laws and the Opening of the China-Britain Tea Trade to American Ships—the Pioneer Passage of the American Clipper <i>Oriental</i> in the British Tea Trade. | 2178 |
| The New British Clipper <i>Challenger</i> Reports Racing the American Clipper <i>Challenge</i> in 1852. | 2180 |
| False Publicity of Claimed Victories by the British of Their Clippers over American Ships—the Challenges of Boston Shipowners to Race for Stakes from an English to a China Port and Back and Britain's Nonacceptance | 2184 |
| Early British Clippers, 1850-1853. | 2189 |
| American Clipper Ships Built in 1850 Intended for the China and East Indian—the Cape of Good Hope —Trade | 2191 |
| American Clipper Ships Built in 1851 of Size and Type Deemed Suitable for the China Trade. | 2197 |
| Comparison of the Size of American and British Clippers. | 2204 |
| American Sailing Ships in the China-to-England Tea Trade, 1850-1860 Inclusive. | 2212 |
| Variable Seasonal Sailing Conditions over the China-North Atlantic Port Course. | 2233 |
| Particulars and Sailing Performances of Some of the Leading American Ships in the U.S.A.-China Trade during the Fifties and Early Sixties. | 2240 |
| The Chinese Coolie Trade. | 2256 |
| U.S.A.-China Clipper Ship Passages, 1850-1865. | 2260 |
| The Fastest Passages Made by American Clippers in the U.S.A.-China Trade from 1844 to the End of Sail | 2278 |
| Later Passages in the China Trade of American Clippers Built in the Fifties. | 2283 |
| Post-war American Ships and Down Easters in the China Trade. | 2284 |
| Britain's Small Specialized Clippers and "Racing Machines" Built for the China Tea Trade. | 2287 |
| XIX. THE AUSTRALIAN TRADE | |
| A Record of 103 Passages of United States-built Clippers in the Australian Trade—Both Outward and Homeward Bound—Sailing from Both British and American Ports during the Years 1851-1862. | 2297 |
| Other Passages by American Clippers in the U.S.A.-Australia Trade. | 2310 |
| Clipper Ship Trading between Australia and West Coast U.S.A. Ports. | 2313 |
| The Canadian-built <i>Marco Polo</i> and the Black Ball Line of British-Australian Packets. | 2315 |
| British-Australian Sailing Packet Lines. | 2319 |
| Canadian-built Clippers in the British-Australian Trade. | 2321 |
| The <i>Red Jacket</i> —an American-built Clipper Bought by the Liverpool White Star British-Australian Packet Line and Proclaimed the Handsomest and Fastest Big Merchant Ship of Her Day. | 2324 |
| James Baines, of Liverpool, Founder of the Black Ball Line of British-Australian Packets, a Patron of Donald McKay, 1853-1855, and an Admirer of Big American Clippers. | 2332 |
| The United States-built Clippers <i>Ocean Chief</i> and <i>Blue Jacket</i> , Bought When New for the British-Australian Packet Trade. | 2337 |
| United States Builders and Owners of Newly Constructed Clipper Ships Sell Them to the British in 1853-1854 for the Australian—or Colonial and Empire—Trade. | 2339 |
| The <i>Nightingale</i> of Boston, Pioneer Clipper in the U.S.A.-Australia Trade. | 2340 |
| R. W. Cameron & Company and the New York-Australia Trade. | 2344 |
| The Donald McKay-built Big Clippers in the British-Australian Trade—the World-famous Quartet Built for James Baines & Company's Liverpool-Australia Black Ball Line, 1853-1855. | 2349 |
| The <i>Schomberg</i> —the Only Large Wood Clipper Ship Built in Britain—an Admitted Failure That Was Lost on Her Maiden Passage from Liverpool to Melbourne in December 1855. | 2368 |

| | Page |
|--|------|
| United States-built Clippers Later Acquired by the British and Operated in the Black Ball and White Star Sailing Packet Lines between England and Australia..... | 2371 |
| Sail versus Steam—the Australian Service Favored Sail for Long Years..... | 2379 |
| Ice around Cape Horn and in the Far Southern and Northern Latitudes..... | 2389 |
| The Gold Rushes to California and Australia and Their Effect on Shipping and Ocean Trade..... | 2391 |
| "The Carriers of the Golden Fleece"..... | 2396 |
| British Clippers and Their Participation in the Australian Trade in the Seventies and Eighties..... | 2410 |
| Comparative Speed of Early American Clippers and Later British Colonial Wool Clippers over the Australian Course..... | 2415 |
| Comparative Particulars and Performances of the Best British Colonial Wool Clippers over the Australian Course..... | 2421 |
| The Composite Clipper <i>Thermopylae</i> —"the Pride of the British Merchant Service"..... | 2422 |
| <i>The Tweed</i> —an Indian-built Vessel and the Inspiration for the <i>Cutty Sark</i> | 2426 |
| The <i>Cutty Sark</i> —the Fastest British Clipper in the Australian Wool Trade..... | 2427 |
| The <i>Mermerus</i> , <i>Salamis</i> , and <i>Samuel Plimsoll</i> —Three "Top-Flight" British-Australian Iron Wool Clippers..... | 2431 |
| The Outstanding British-Australian Iron Wool Clippers <i>Thomas Stephens</i> and <i>Patriarch</i> | 2433 |
| The Rivalry of the Aberdeen Iron Clippers <i>Pericles</i> and <i>Brilliant</i> | 2434 |
| The <i>Melbourne</i> , a Popular British-Australian Liner Built in 1875 and the Last of the Blackwall Frigate-like Sailing Ships..... | 2435 |
| Prominent British-Australian Iron Clippers Built in the Eighties— <i>Clan Mackenzie</i> , <i>Wendur</i> , <i>Macbridehanish</i> , and <i>Loch Torridon</i> | 2436 |
| The Australian Wheat Races of the Twentieth Century—the Last Trade for Old Windjammers..... | 2437 |
| | |
| XX. THE MANILA TRADE | |
| Salem and Arrivals from Manila from the <i>Astrea</i> in 1796 to the <i>Dragon</i> in 1858, with Salem-owned Ships Loading and Discharging in Deep-Water Ports Thereafter..... | 2440 |
| The Ship <i>St. Paul</i> , Owned by Stephen C. Phillips, Salem's Most Consistent Manila Trader, 1835-1851.. | 2441 |
| Salem's Prominent East Indies and Manila Shipping Merchants—Stones, Silsbees, Pickmans, Sanders, and Allen—1798-1898..... | 2442 |
| Clipper Ships in the Philippine Trade..... | 2443 |
| American Sailing Ships in the Philippine Trade Following the Clipper Ship Era..... | 2454 |
| | |
| XXI. THE INDIAN TRADE | |
| The Opening of Trade with India by American Vessels..... | 2462 |
| Early Fast Passages of United States Ships in the Indian Trade..... | 2466 |
| American-built Clipper Ships in the Indian Trade..... | 2467 |
| United States-built "Half Clippers" and "Down Easters" in the Indian Trade..... | 2488 |
| Early Indian Shipbuilding and Shipping..... | 2494 |
| The British East Indiamen..... | 2528 |
| The British Blackwall Frigates..... | 2545 |
| The Opium Trade..... | 2572 |
| The Opium War..... | 2589 |
| Coolie Trade and Coolie Clippers..... | 2599 |
| | |
| XXII. CONSTRUCTION OF VESSELS IN PACIFIC NORTHWESTERN STATES, WHERE AMERICA'S LAST GREAT STAND OF TIMBER IS LOCATED | |
| The Use of Oregon Pine, or Douglas Fir (Softwood), for Shipbuilding..... | 2605 |
| Square-riggers Built on the Pacific Coast of Western Timber..... | 2605 |
| The Northwest's Best Twenty Years of Shipbuilding, 1890-1910..... | 2606 |
| | |
| XXIII. SCHOONERS—THE LAST STAND OF SAIL IN THE COASTWISE TRADE AND AMERICA'S LAST BIG SAILING VESSEL CONSTRUCTION | |
| The Development and Growth of the Schooner through the Nineteenth Century up to 1909 and Its Rapid Decline..... | 2608 |
| The Six-masted Schooner <i>Wyoming</i> —the Largest Wood Sailing Vessel Ever Built in the World..... | 2610 |
| The Famous Fleet of "Palmer's Big Wood Schooners" and Their Tragic End..... | 2610 |
| The Great "Winslow" and the "Lawrence" Fleets of Big Wood Coastwise Schooners..... | 2611 |
| The Coastwise Transportation Company, of Boston, and Captain Crowley's Fleet of Large Schooners—Both Steel and Wood..... | 2612 |
| The Seven-masted Steel Schooner <i>Thomas W. Lawson</i> , 1902-1907..... | 2613 |
| Other American-built Steel Schooners—the Six-masted <i>William L. Douglas</i> and the Five-masted <i>Kineo</i> .. | 2615 |

CONTENTS

vii

| | Page |
|--|------|
| Crowninshield's Views in 1907 on Large Wood Coastwise Schooners | 2616 |
| The Small Crews Placed Aboard Big Fore-and-afters as Compared with the "Economy" Crews Used on Square-riggers in the Last Days of Deep-Sea Sail | 2616 |
| Coastal Sailing Packet Lines Demanded Square-rigged Ships, and Schooners Were Not Acceptable for This Distinctly Coastal Service | 2617 |
| The Advantages and Disadvantages of the Schooner Rig | 2618 |
| The End of the Construction of Schooners for the U.S. Merchant Marine | 2618 |
| The Failure of the Schooner on Deep-Sea Long-Voyage Trade Routes | 2619 |
| Large Multiple-masted Schooners with Yards on the Foremast—Attempts to Use Some Square Sails to Improve the Fore-and-aft Rig in Deep-Sea Work | 2621 |
| The Passing of the Schooner and the End of Merchant Sail | 2622 |
| XXIV. FULL SHIP-MODELED TOWING BARGES WITH AN AUXILIARY BALD-HEADED SCHOONER RIG—THE SUCCESSORS OF THE BIG MULTIPLE-MASTED SAILING SCHOONERS IN THE AMERICAN COASTWISE TRADE | |
| The Economic Operations of Large Fleets of Towing Barges and Handy Seagoing Steam Tugs | 2624 |
| Size and Number of Large, Especially Built Seagoing Tow Barges Constructed at Bath, Maine, 1895-1923 | 2625 |
| Big Bald-headed Schooner-rigged Towing Barges of Over 1,500 Tons Built at Bath, Maine, 1896-1901 | 2625 |
| Old Square-rigged Ships and Younger Schooner-rigged Vessels Cut Down to Towing Barges | 2626 |
| The Largest Auxiliary-rigged Seagoing Towing Barges Built at Bath, Maine | 2627 |
| XXV. AMERICAN WOOD VERSUS BRITISH IRON SAILING SHIPS, WITH SPECIAL REFERENCE TO THE CALIFORNIAN-EUROPEAN GRAIN TRADE DURING 1881-1885 | |
| Capt. William W. Bates's Survey and Analysis of the Performances of Sailing Ships of Different Types and Nationalities Engaged in the Trade | 2630 |
| Comparative Records Showing Averages of Each Class of Ships in the California Trade, 1881-1885 | 2631 |
| The Relative Safety, Losses, and True Insurance Risk of American Wood Ships as Compared with the Various Groups of Foreign Ships Engaged in the California Grain Trade | 2633 |
| The Relative "Turn-out" of Cargoes, Showing Condition of Grain on Delivery and Losses in Transit of Representative American Wood and British Iron Ships | 2634 |
| The Result of a Comprehensive Scientific Analysis of the Performances of Carriers in the Atlantic Grain Trade, 1881-1885, and Capt. William W. Bates's Comment Thereon | 2635 |
| In the Late Eighties and Early Nineties, Britain Drives the United States, with Its Better Ships Such as the <i>Henry B. Hyde</i> , from the Californian-European Grain Trade | 2635 |
| The Selfish Discrimination of Foreigners and American Indifference to the Protection of the U.S. Merchant Marine Drive the American Flag from the Seas | 2636 |
| XXVI. SHIPS OF THE EAST AND OF EUROPEAN POWERS—THE STIMULATION TO EUROPEAN SHIPPING DUE TO SAIL AND THE COMPASS AND THE RAPID CONSTRUCTION OF VESSELS IN THE OLD AND NEW WORLDS | |
| Ships of the Old World—the Use of Sail and the Compass by Europeans in the Late Fifteenth Century Leads to World Exploration and Exploitation | 2638 |
| Recorded Speedy Construction of Wood Vessels in the Old World | 2640 |
| Relatively Rapid Shipbuilding in the United States during the Nineteenth Century | 2642 |
| The "Assembly Line" of United States Steel Shipbuilders during World War II | 2643 |
| XXVII. NAMES OF AMERICAN-BUILT SAILING VESSELS | |
| Commonly Used Names of Ships Registered at Salem and Newburyport Dating Back to 1789 | 2645 |
| The Early Boston Jewel Line Packet Ships | 2646 |
| The Naming of American Clipper Ships in Mid-nineteenth Century | 2647 |
| Names of Transatlantic Sailing Packets | 2648 |
| The Names of Ships Built by Donald McKay, East Boston | 2649 |
| The Naming of Down Easters and American Post-Clipper Ships | 2650 |
| The Influence of Superstition in Naming and Operating Ships | 2653 |
| The Alaskan Salmon Packers' "Star" Fleet of Metal Square-riggers | 2654 |
| The Nomenclature of European Sailing Vessels | 2656 |
| The Naming of Large American Schooners and Tow Barges | 2657 |
| XXVIII. THE OFFICERS AND CREWS OF AMERICAN DEEP-SEA SQUARE-RIGGERS | |
| Number of Men in Sailing Ship Crews | 2659 |
| Training of American Boys for the Sea—Youthful Sea Captains | 2668 |
| The Glory of the Yankee Seaman and His Later Withdrawal from the Sea | 2674 |
| The Officers and Crew of a Down Easter or Cape Horner—Bully Captains, Bucko Mates, and Riffraff Crews | 2675 |
| The Officers and Crews of the Sewall Fleet of Steel Four-masted Square-riggers, 1894-1916 | 2686 |

| | Page |
|--|------|
| XXIX. THE LAST DAYS OF DEEP-SEA MERCHANT SAIL | 2702 |
| Oil Carriers | 2703 |
| Alaskan Salmon Packers | 2706 |
| The Big European "5-Posters"—the World's Largest Sailing Ships | 2711 |
| Training Square-rigged Ships in Deep-Sea Trade | 2716 |
| The Training of Officers for the Merchant Marine in Deep-Sea Square-rigged Sail | 2720 |
| The German and French Nitrate "Clippers" | 2723 |
| Capt. Gustav Erikson, of Finland, and His Australian Grain Square-riggers—the Last Chapter in the History of Deep-Sea Merchant Sail | 2732 |

MERCHANT
SAIL

XVIII.

THE CHINA TRADE

*The Most Venturesome Branch of the Early United States Merchant Marine
and Second in Importance Only to That of the North Atlantic*

THE TRADE BETWEEN the United States and China by way of the Cape of Good Hope and the Indian Ocean and via Cape Horn carrying furs to Canton from the American Northwest or sealskins from islands in the Southern Hemisphere helped materially in putting the merchant marine of the young republic on the map in the early days, and East Indian, Chinese, or oriental trade was second only to that of the North Atlantic in the early development of the merchant sail of the independent United States of America. The East India fleet, originally the most venturesome branch of the United States merchant marine, became the most aristocratic, and the China trade via the Cape of Good Hope and the Indian Ocean grew to be America's most popular and profitable long-distance ocean trade route; whereas illegitimate commerce between India and China in high-speed bottoms attracted even the most moral shipping owners of the day—American as well as British—with the lure of big returns for resourcefulness, courage, and audacious fast sailing.

The hazards of any legitimate East Indian or oriental voyage made it colorful and somewhat appealing to adventuresome Americans. The length of the passages, either outward or homeward bound, caused an increasing demand for speed, while speed as well as a battery of guns and a good supply of small arms was a necessary means of defense against the pirates haunting the trade routes. The packet service on the North Atlantic placed a premium on speed, and this demand for driving ships was reflected in the China trade, so that gradually American ships in the China run came to be driven over a long 16,000-mile course as were the transatlantic packets on a passage covering only a fifth as much mileage. That the method of driving became somewhat similar is indicated by the number of old Atlantic packets and of the masters of such packets that later participated in the China trade. It has been said that by about 1825 there were two trades open to "superannuated" Atlantic packets; one was the Canton route and the other the whaling trade. Packets in the Atlantic service became too small rather quickly for that rapidly expanding and exacting trade over a usually turbulent sea route, or they might prove too slow for that highly competitive business. If too small and too slow to serve as a North Atlantic liner, such a ship—modeled and sparred for that trade—generally proved ideal for the whaling business, where seaworthiness and fullness were much more important than speed, and large size could not be used. However, the China trade demanded speed as well as desired seaworthiness and for many long years could use with advantage the size of ships that were growing small for the Atlantic service.

Among the Atlantic sailing packets or liners that rendered good service in the China trade was the *York* of 433½ tons, built by William Crockett, New York, in 1824, which ran regularly in the Liverpool (Blue) and London (Red) Swallowtail New York transatlantic lines during the years 1825-1833, then saw much service as a China packet, was a whaler

(1841-1847), and took part in the California Cape Horn Gold Rush in 1849. The *Silas Richards* of 454 tons, built by Isaac Webb & Company, New York, in 1824, ran in the New York-Liverpool Blue Swallowtail Line for ten years (1824-1834) and was a transient and China packet (1834-1841) and a whaler from 1841 until she was lost in Shanta Bay, South Pacific, in 1854. The *Great Britain* of 725 tons, built by Brown & Bell, New York, in 1826 for Jeremiah Thompson, a founder of the Black Ball Line, did some great sailing in the China trade in the forties under Capt. Philip Dumaresq, of the Kennebec, Maine, who drove her "full sail in double-reef gales." The *Champlain* of 624½ tons, built in New York in 1834 and owned by Platt, Hollingshead et al., of Philadelphia, we are told, "did good work in the China trade after her usefulness was ended as an Atlantic packet." The Dramatic transatlantic liner *Sheridan* of 895 tons, built by Brown & Bell, New York, in 1836, at the end of her days became a China packet and made a run in the China-Britain tea trade in 1851. The *Joshua Bates* of 620 tons, an Atlantic packet built by Pickett and Donald McKay at Newburyport, Mass., in 1844 for Enoch Train and his Boston-Liverpool White Diamond Line, was put in the China tea trade in 1847, when only three years old.

It has been said that the driving of the American sailing packets in the North Atlantic was the experience that formed the foundation on which the clipper ship was created; but this is untrue unless the intermediate link of the China packet is considered, for the China trade made demands that caused the sharper modeling, loftier spars, and greater sail spread of the pre-clippers or early clippers before the California Gold Rush and the Cape Horn trade speed requirements caused the construction of the "extreme," or "out-and-out," clippers when "speed was king." A clipper ship did not make a good transatlantic packet, and the best of the passenger liners on the North Atlantic had none of the prime characteristics of the clipper. Indeed, the transatlantic packet and the extreme clipper were the antithesis one to the other in both model and rig, and their only similarity was that in operation they were both driven hard. In the China trade, a well-designed clipper ship was ideal (if she were not too large) and was much superior to a ship of the Atlantic packet type; for the clipper, with her larger sail spread, was better at "ghosting along" in the doldrums and light airs of the tropics and would show much higher speed sailing with favorable heavy winds, while the packet had but little opportunity to show her superiority, which was in beating against strong winds in heavy seas (such as experienced in a westbound Atlantic crossing).

Carl C. Cutler, in *GREYHOUNDS OF THE SEA—THE STORY OF THE AMERICAN CLIPPER SHIP*, says:

The China run, later the scene of the first great triumphs of the American clippers, was in some respects an unsatisfactory test of a ship's speed. It was a course in which much light, variable weather was apt to be met. The fitful monsoons, changeable currents, uncharted reefs and fearful typhoons of the China Sea proved the undoing of many a noble ship and the nemesis of many a veteran shipmaster. Piratical activity, well down into the third quarter of the last century, kept every crew alert and anxious until the dreaded "Streights" had been passed, after which the tension lessened but by no means disappeared.

After a smashing run across the Indian Ocean,

a ship might find herself fighting westerly gales for weeks off the Cape of Good Hope, with all prospect of a fine passage spoiled, or spend precious days "humberging" about in doldrum weather in the "horse latitudes," or on the other hand, might fetch Bermuda in record time only to meet heartbreaking month-long delays beating up against wintry Nor'westers.

Such conditions as these obtained to a certain extent over every ocean course, but they were more uniformly met with in the tea trade than elsewhere. The result was the breeding of a class of officers there that for resourcefulness, alertness and super-seamanship could not be surpassed the world over.

Prior to the War of 1812, a run from Canton to Boston or New York of from 125 to 150 days, depending on the season of the year and the direction and force of the monsoon, was considered a good passage, and runs requiring six months or more were by no means uncommon. The monsoon in the China Sea was always a gamble, and during the unfavorable season, a month or so was generally added to the estimated length of passage. A race that was concluded at Boston on the same day in the early spring of 1810 between three fine

Yankee East Indiamen, although not in anywhere near record time even for those early days, nevertheless, gives an indication of the length of good passages home from the Orient during that period. The contestants and the record of their sailing performance were as follows:

| Name of Ship | Captain | Tonnage | Sailed from Canton | Arrived at Boston | Length of Passage in Days |
|--------------|---------|---------|--------------------|-------------------|---------------------------|
| WILLIAM | Emery | ? | Dec. 6, 1809 | Apr. 13, 1810 | 128 |
| MANDARIN | Nash | 320 | Dec. 5, 1809 | Apr. 13, 1810 | 129 |
| ATAHUALPA | Sturgis | 209 | Dec. 4, 1809 | Apr. 13, 1810 | 130 |

The *Mandarin* (98½ ft. long and 27¼ ft. beam) was built at Amesbury, Mass., in 1803, and the *Atahualpa* (85½ ft. long and 23¾ ft. beam) was built at Kennebunk, Maine, in 1800. The race showed remarkably uniform sailing, and the run off the New England Coast, with its close finish, was talked of for years and was a foretaste of the many races to come, forty or fifty years later, over a course of similar length via Cape Horn between East Coast United States ports and San Francisco. Captain Sturgis of the *Atahualpa* said that the race of the three "East Indiamen" from China in the winter of 1809-1810 was made under average sailing conditions "not very good and not bad," and he added: "It might have been 25 days shorter and then again possibly 25 days or more longer." To back up this statement of a possible shorter run under more favorable conditions, the *Atahualpa*, the next year, under the command of Captain Bacon, reached Boston (in the spring of 1811) in 106 days from Canton, being favored by the monsoons. On the outward passage, the ship had sailed around Cape Horn and followed the Northwest Coast fur trade route to China and, on the complete voyage, had circumnavigated the globe the hard way—by sailing westward.

The first American ship to make a passage from China to a United States port in 100 days or better was John J. Astor's *Severn* of 279 tons (91½ ft. long and 26½ ft. beam), built in New York in 1792. With Capt. John Cowman in command, she reached Sandy Hook on March 9, 1805, after a passage of 100 days from Canton, completing a round voyage in 9 months and 9 days, of which 218 days had been spent at sea (118 days out; 100 days back). Four years later, another passage was recorded in century time when the ship *Asia*, under Captain Williamson, arrived at Philadelphia on March 24, 1808, completing a passage of 100 days from Macao to the Delaware Capes.

News of the signing of the peace at Ghent on Christmas Eve of 1814 did not reach New York until February 11, 1815 (forty days after the event), but on March 30, 1815, the schooner *Russell* (Captain Vibberts), owned by Minturn & Champlin, of New York, not knowing that the War of 1812 was at an end, reached up Buzzards Bay and completed a record voyage of 96 days from China. On April 1, 1815, the brig *Sphynx* of 286 tons (built by Henry Eckford, New York, in 1812 for Whetten and Dickey, New York) arrived at Sandy Hook, 98 days out; both vessels had been favored by unusually good sailing conditions throughout practically the entire passage. Cutler says:

The two vessels had sailed in company from Canton during the night of December 22nd, running the blockade maintained by His Majesty's *Grampus*, 50 guns, and the *Owen Glendower*, *Theban* and *Doris*, frigates. It is recorded in the log of the *Russell* that she had two close calls. In running out in the dark, she passed within pistol shot of the *Grampus*, which gave chase, but at day-

light was five miles astern. Again on March 1st, just below the Line, she was chased by a frigate and a brig which had the advantage of possessing "engines" (force pumps) with which to wet their sails. In the end the *Russell* was compelled to throw over her carriage guns and shot, "when she easily left them."

The Baltimore privateer brig *Chasseur* of 356 tons (built in 1812), after her last war cruise against the British ended, was refitted as a merchantman and put in the China trade. On April 9, 1816, she arrived at Baltimore, completing a passage from Canton reported as "95 days to the Capes"; her log also showed "84 days from Java Head to the Capes." A few

days earlier, the brig *Seneca* (Captain Depeyster), owned by John J. Astor, had reached New York 103 days out from Macao, and shortly thereafter Astor's historic *Beaver* of 447 tons (built by Eckford & Beebe, New York, in 1805) also arrived at New York after an absence of nearly five years, some three of which she had spent laid up at Whampoa waiting for news of the termination of the war with Britain.

The ship *Ida* (Captain Dorr) reached Boston on March 31, 1819, after a fast passage of 101 days from Canton with favorable monsoons, but following this, while good runs were occasionally made, none was near the century mark for many years. In 1831 the twenty-year-old regular trader *Milo* of 398 tons (built at Newburyport in 1811), under the command of Captain Sever, made a spectacular run of 60 days from Rio de Janeiro to Canton, but the *Milo* (Captain Glover) had been often "in the news." After the War of 1812, she was "the first American vessel that arrived in England after the peace and the first that arrived back," and she is credited with a passage of only 15 days from Boston to Liverpool. About the time of the fast passage of the *Milo* to Canton, the *Clematis* arrived out 95 days from Boston. It was not until March 26, 1832, that the marks of the *Russell* and *Chasseur* were again approached. On that date, the Philadelphia-built ship *Atlantic*, under the command of Captain McCall, passed Cape Henlopen 98 days from Macao.

In the early days, it was generally felt that a round voyage to China would occupy about a year, and detention in the oriental ports was notoriously long as well as expensive. Occasional fast passages, with runs home in "ninety odd days," had the effect of thoroughly arousing the maritime interests of the United States to the value of speed and the time and associated cost of a completed round voyage. Intelligent steps were taken to reduce the period of detention in China ports, and speed was demanded of the ships sailing over the world's long-distance championship course, which stretched between the North Atlantic ports of the United States and the Orient (China and the East Indies). Round voyages of some eight months' duration instead of ten to twelve became known as a possibility, with the hope of profitable fill-in trips occupying the balance of the year. Merchants and masters concentrated on the utilization of their ships in the realm of producing revenue and profits per month and per annum, and "speed to China" became an economic maritime slogan. The race went merrily on to bring China close to the United States by means of fast passages out and home and to reduce the length of a completed round voyage. On April 16, 1846, the *Rainbow* of 757 tons (Capt. John Land) reached New York, completing a round voyage between New York and Canton in only 6 months and 16 days.

It is said that in the early thirties, the number of American ships in the China trade almost doubled within a period of a couple of years, and passages of near 100 days commenced to attract but little attention. In the spring of 1833, the new Philadelphia ship *Commerce* of 431 tons, with Captain Fleming in command, made a run home from Canton to the Delaware Capes in 96 days, and on March 21, 1834, the New York-owned *Sabina* of 412 tons, built in 1823 (Captain McEwen), arrived at Sandy Hook after a passage of only 90 days from Canton. With this record for speed, the century mark of the *Severn*, established in 1805, and the 96-day run of the *Russell*, made in 1815, were no longer the criteria of speed in the China trade; henceforth the sailing performances of Chinese packets were considered in relation to the 90-day run of the *Sabina*, and this was to prove to be fast clipper ship time. Many fast China passages were made in the thirties, which, whereas not record runs, were marvelous sailing performances. Considering the size, model, sail spread, power, and natural speed of these early packets, it is evident that their commands and crews performed almost incredible feats of seamanship and equaled anything that the faster, bigger, sharper-modeled, and more heavily canvased extreme clippers showed in later years. As a matter of fact, the men before the mast on American ships in the thirties were generally native, young, intelligent, industrious, ambitious, and much superior in every way to the forecandle hands of the clipper ship era.

Cutler gives an excellent brief digest illustrative of the better passages made in the China trade to and from Canton during the middle of the fourth decade of the nineteenth century:

The *Clematis*, Captain Evans, 100 days; the *Horatio* [470 tons], Howland, 98 days; the *Eliza*, 106 days, and the *Liberty*, Captain Davis, 109 days, all in 1834. The following year, the old packet *York* [433 tons], under Captain Sterling, made the run in 104 days; the ship *Morrison*, Lavender master, in 99 days; the barque *Cynthia*, of Salem, Captain Graves, 102 days; the *Sachem*, commanded by Captain Brown, 96 days; the *Roman* [492 tons], Captain Benson, 101 days; while the *Paris* [339 tons] distinguished herself in another way by taking 180 days, practically six months, to go from Canton to Boston. . . . The *Silas Richards* [450

tons], another old packet, made the homeward run in 98 days in the Spring of '36, while in command of Captain Rosseter. A year later she cut her time to 94 days, under Captain Pearce. Griswold, in the *Panama*, made a satisfactory trip of 94 days in 1836. Deliverance Benjamin, later one of the prominent early clipper ship commanders, then took her and brought her home in 99 days. Meanwhile the brig *Richard Alsop* [283 tons], under McMichael, also destined to become well known in clipper ship circles, made a passage in 96 days in 1836.

The speed performance of the *Silas Richards* in the China trade (and indeed of many other vessels of her day) has been the subject of controversy, and the "*Richards*" is generally credited with a passage from Canton to New York of 91 days. Indeed, it has been authoritatively said that until the *Natchez* made her 78-day passage in 1845, the *Silas Richards* held the speed record between Canton and New York; but this claim ignores the 90-day runs of both the *Sabina* and *Natchez*, for we read: "The speed record in this [China-New York] service had previously been held by a former Blue Swallowtail, New York-Liverpool sailing packet, the *Silas Richards*. In 1837, three years after she left the Atlantic shuttle, the '*Richards*' made the run from Canton to New York in 91 days when other reputedly fast vessels were taking about 100 days for the voyage." The *Silas Richards* was operated ten years as a transatlantic packet (1824-1834) and was a slow ship in that service, her average westbound length of crossing being 39 days and her fastest passage 25 days. In 1826 the "*Richards*" had a slow crossing westward of 67 days, which attracted much attention, as it was the slowest passage of record of any regular transatlantic sailing packet up to that time. It was the *Silas Richards*, deemed too slow as well as too small for the North Atlantic packet service and sold in 1834, that performed for several years so creditably, as far as speed was concerned, in the China-New York trade.

The Era of the Fast American China Packets of the 1830's and 1840's

Even before the days of the true clipper, American ships had a reputation for high speed in eastern waters, but for many years their opportunities were limited. The China trade, not the California Gold Rush, was the real cause for the building of fine-lined American sailing ships that later became known as "clippers." In the early thirties, "speed to China" became a slogan among United States shipping interests, and in early 1834, the small ship *Sabina* (built in New York in 1823), with a record run home of 90 days, gave a sailing performance worthy of the fastest "extreme" clipper ships built thirty years later and which were from three to six times as large. One of the first vessels to have the definite name of "clipper" was the *Ann McKim* (193 tons), built in Baltimore in 1832, with the Far East trade and its demands for speed pre-eminently in mind. Of the Baltimore clippers that earned a reputation for speed in the early China packet period, one of the most outstanding was the brig *John Gilpin* of 283 tons, built at St. Michaels, Md., in 1830. She passed Cape Henry on May 20,

1832, en route for Batavia and China, crossed the Atlantic equator on June 17, and anchored off Anjer on August 10, 82 days out, having logged 15,261 miles—an average of 186 miles a day and about $7\frac{3}{4}$ knots per hour. The "*Gilpin*" traded between China and Valparaiso for a number of years and made a record run of 56 days 4 hours in 1837 between Callao and Lintin, which held until it was lowered in 1843 by the New York-built *Helena*, with a 51-day passage. From the time of departure from Cape Henry in May 1832 until arrival at Canton on December 12, 1839, a period of over seven and a half years, the *John Gilpin* is said to have spent 1,443 days at sea and logged 228,553 miles, an average of about 159 miles per day and $6\frac{5}{8}$ knots per hour. The *Ann McKim*, on her first voyage to China, went around Cape Horn and across the Pacific from Valparaiso (a course later followed by the *Sea Witch* on two voyages); she returned from Canton to New York in 150 days. In 1842 the "*McKim*" reported a run of 79 days from New York to Anjer and returned home from China in 96 days, which was excellent sailing, but not a record at that time.

It can be said that the following periods of construction are applicable to the oriental trade, which drew heavily upon fast sailing vessels and encouraged the development and building of ships of a type that became generally known as "clippers":

| | | | |
|---|-----------|--------------------------------------|-----------|
| Opium clippers (small fast craft) | 1830-1850 | American clippers | 1850-1860 |
| American fast China (clipper) packets | 1841-1849 | British China tea clippers | 1850-1870 |

(The final period of clipper ship construction was that of the British-Australian wool clipper, built of iron, 1860-1885.)

In this first period, small fast ships were used for carrying opium from India to China. It was really smuggling, since the Chinese wished to stop the trade because of the harm that it did, and it was necessary for the ships engaged in "opium running" to have speed to avoid the government vessels. The cargo was also too valuable to be kept any longer at sea than could be helped. The ships in this illegitimate but highly profitable trade, not having to carry any heavy or bulky cargo, were built on the lines of a yacht and were generally of good beam, with "a water line as sharp as a wedge at the bow and a very clean run aft"; they were loftily sparred and relatively heavily canvased and, it was said, "carried twice as much sail as an ordinary merchant ship." It would seem that the bulk of the opium trade was taken over by steamers about 1850, and this nefarious business probably terminated, as far as volume shipments were concerned, around 1860.

The *Helena* (598 tons), built by Webb & Allen, New York, in 1841, prior to what has been termed the "Griffiths clipper period," has been classified by some authorities as the first tea clipper ship and the *Montauk* (505 tons), built in 1844 by W. H. Webb, New York, as "the third tea clipper built in America." It has been authoritatively suggested, however, that the clipper ship era really began in 1844 with the building of the *Houqua* (583 tons) by Brown & Bell in New York for A. A. Low & Bro., of New York, as a result of the growing demand for a more rapid delivery of tea from China. Most historians, however, prefer to consider the *Rainbow* (750 tons), built the following year (1845) by Smith & Dimon, New York, for Howland & Aspinwall, New York, as the world's pioneer "true" clipper. The *Rainbow* was designed by John Willis Griffiths along rather extreme lines of sharpness of model, with "a long hollow water line and the sharpening of both the forward body and the stern" and "a great wealth of canvas." All other qualities of design were evidently subordinated to that of speed or at least made to conform to fundamental and actuating theories in the realm of speed. It is significant that the *Houqua* not only made some exceedingly fast runs but also was in active service for twenty-one years; the *Rainbow* proved to be an outstanding, speedy ship under favorable sea and wind conditions, but she foundered in 1848 off Cape Horn on a voyage from New York to Valparaiso en route to China, and this after only three years of service. Whereas Griffiths is generally given the credit for designing, and Smith & Dimon for building, "the first true clipper," which was the forerunner, or pioneer, of the great fleet that made the United States, temporarily, Mistress of the Seas, the *Houqua* proved by her sailing

performance to be a real clipper and, in addition, a practical vessel for deep-sea trade, and she antedated the *Rainbow* by a year.

The *Houqua* was built under the supervision of and was commanded by the famous Capt. Nathaniel B. Palmer, who also took out each of the new clippers built later by A. A. Low and in 1851 had a "great and lordly" ship of 1,399 tons named after him. Captain Palmer had the command of that fine early Down Easter, "the incomparable *Paul Jones*" (620 tons), built in 1842 by Waterman & Ewell, of Medford, Mass., and on the return trip of the maiden voyage from China in 1843 had on board a passenger, William H. Low, the brother of Abiel Abbott Low. During the voyage home, it is said, ideas were developed and "a model of a fast clipper whittled out." This took form later as the *Houqua*, "the prime idea for form having been inspired by the fast American clipper-brig *Antelope*, then making a fortune (opium) running between Bombay and China." The *Paul Jones* is, therefore, of interest not only as a splendid specimen of the practical Down Easters of the forties—before the advent of the "out-and-out" clipper—but also because some competent and unbiased shipping historians contend that the first American clipper was modeled and planned in her cabin.

The rise of American shipping and of the wood shipbuilding industry in the United States followed the close of the wars at the beginning of the nineteenth century and the creation of normal trade conditions which developed following the after-effects of the British-American War of 1812. There was a great expansion in the world's maritime commerce, and trade which both the United States and Britain had been cultivating for some time in the Far East grew rapidly. We are told, "The demand for staunch, fast, and easily managed ships increased until American shipyards, which were easily leading the world, could not keep up with their orders." During 1832, the registered and enrolled tonnage of New York was greater than that of Liverpool or any city in the world except London. New York became a great world port, with hundreds of vessels at anchor in the harbor every day of the year. Trade between the United States (and certain other foreign ports) and China showed a steady increase for years, and when, in 1843, China opened four more of her ports to commerce, the trade—particularly in tea—became very important. Between July 1845 and July 1846, forty-one vessels arrived in New York from China and probably as many more in other Atlantic ports. The value of tea alone imported into New York from 1847 to 1853 was more than eight million dollars.

In 1845 the fourteen-year-old New York-New Orleans sailing packet *Natchez* (524 tons; length 130.3 ft., beam 29.8 ft., depth 14.8 ft.), built by Webb & Allen, New York, reached New York on April 3 after a record passage of 78 days from Canton, China. She was under the command of Capt. Robert H. ("Bob") Waterman, who later became the famous skipper of the "real clipper" *Sea Witch*. The record of the *Natchez* is an interesting one, for the little ship occupies a position of major importance in the history of sail. It has been said, "The Howlands, of New York, with a secondhand New Orleans-New York coastwise sailing packet and with a captain lured from the Black Ball Line of transatlantic packets, smashed the China-eastern American port speed record with a 90-day Canton-New York run and then followed it with an amazing 78-day passage." This extraordinarily fast passage of the *Natchez*, which has been referred to as "the most noteworthy sailing run of all time made by a ship that made no pretense of being a clipper" or even of being built for the China trade, was evidently a more or less "freaky" passage of "78 days and 6 hours from off Macao to the Barnegat pilot," and the vessel's best day's run was only 276 miles. Whereas the *Natchez* was credited with breaking the record between Canton and New York with her first exceedingly fast 90-day run and may have done so by a matter of hours, it should be borne in mind that the New York-owned and built *Sabina* of 412 tons is credited with making a passage between the ports in 1834, also in 90 days.

The *Natchez* was undoubtedly a fast vessel, although her record in the New York-New Orleans run was not particularly outstanding and she has been rated, in regard to speed, as

the fifteenth of seventy recognized regular sailing packets in that service during the period 1821-1861. The *Natchez* was, however, a sister ship of the *Huntsville* (522 tons; built by the Ficketts, New York, in 1831), which was the crack speed boat in the New York-New Orleans coastwise packet service, with a record for fast average passages unequaled by any ship of her size and period. The *Natchez*, in two years (1831-1833) as a New York-New Orleans packet, averaged 16.7 days, port to port, on her northbound run; the fastest trip was 13 days and the slowest 21 days. The *Huntsville*, however, during her thirteen years of service in this run (1831-1844), averaged only 15.1 days on the northbound trip and made some runs of 10 days, port to port; she had one long passage of 28 days. Only the *Sultana* (662 tons; built by Brown & Bell, New York), which was built and entered the service in 1844, or thirteen years after the *Huntsville*, and was 27 per cent larger, had a better average speed record northbound (14.4 days), and the big *St. Charles* of 798 tons, which was built and entered the service in 1848 (seventeen years after the *Huntsville*), did not quite equal the fast time of the average run northbound of the *Huntsville*. Not one of the other sixty-seven vessels classed as regular New York-New Orleans sailing packets approached it during the packet era of forty years.

One authority says that the *Natchez* did not beat the 1837 record of the *Silas Richards* on her first run in 1843 from Canton to New York, but her actual time—while extremely fast—was one day longer than that of the old transatlantic packet, or 92 days on the same basis of computation. It is also said that between the first voyage in 1843 and the record-breaking and remarkably fast (1845) run of the *Natchez* of only 78 days, she made a voyage in 1844 of 94 days, giving her an amazing average of 88 days for three voyages, Canton to New York. The *Natchez* was a shallow-draft ship built for coastwise trade and not a fine-lined clipper "of believed ideal model and proportions, with everything subordinated to (and sacrificed for) speed." Her 78-day run can be more fittingly appreciated by comparing it with the 1849 world's permanent sailing record of the real clipper *Sea Witch* from China to New York in 74 days 14 hours—under the command of the same Captain Waterman. The *Sea Witch*, owned by Howland & Aspinwall, New York, was built fifteen years after the *Natchez* and was 73 per cent larger in registered tonnage. Designed primarily for speed and considered in her prime by many authorities as "the fastest sailing vessel of her inches ever built," the *Sea Witch* reduced the time of passage from the China port to New York only 4.3 per cent, when making the world's first all-time sailing record, as compared with the record run of the old "flat-bottomed secondhand coastwise packet." After two years as a New York-New Orleans packet and eighteen years as a general trader, the *Natchez* was sold to the whaling trade in 1851 (hailing port, New Bedford, Mass.), and while engaged in that service, she was lost in Potters Bay, Sea of Okhotsk, in 1856.

A comparison of the dimensions of the clipper *Sea Witch* with those of the *Natchez*, with a fuller model and shallower draft, is of interest:

| Name | Built | Tonnage | Length | Beam | Depth | Ratio | | |
|-----------|-------|---------|-------------|-------------|-------------|----------|----------|----------|
| | | | | | | L. to B. | L. to D. | B. to D. |
| | | | <i>Feet</i> | <i>Feet</i> | <i>Feet</i> | | | |
| SEA WITCH | 1846 | 908 | 170.3 | 34.0 | 19.0 | 5.0 | 9.0 | 1.8 |
| NATCHEZ | 1831 | 524 | 130.3 | 29.8 | 14.8 | 4.3 | 8.8 | 2.1 |

The early Webb-built tea semi-clippers, or rather fast sailers of the late pre-clipper era, did some fast sailing in 1846. The *Helena* (598 tons; built 1841) ran from New York to Java Head in the record time of 73 days 20 hours and averaged over 7½ knots per hour for the entire voyage. The *Montauk* (505 tons; built in 1844) made a passage of 87 days from Macao to New York. It was in 1845 that the *Rainbow*, the much advertised "first clipper" of Griffiths (and Howland & Aspinwall), appeared in the China trade "to show up the fast ships of all other builders." The *Rainbow* was a wet ship and was oversparred notwithstand-

ing her good beam and ratio of length to beam of 5 to 1. Upon her arrival at Hong Kong at the end of her first passage, the lower masts were shortened. On this round voyage, which occupied 228 days (7 months 16 days), she made an outward run (February 1-May 14, 1845) of 102 days, a return (June 1-September 17, 1845) of 108 days, and was detained in port only 18 days for unloading and loading. On her second voyage, which occupied from October 1, 1845, to April 17, 1846, she did better, requiring only 198 days (6 months 16 days) for the complete round voyage and making passages of 99 days out and 83 days home (also reported as 84 days). On her third voyage, she ran home from Whampoa in 86 days (December 1846-March 1847). She then crossed to Liverpool and went out to Hong Kong; her fourth and last run from Canton (Whampoa) to New York was made in 88 days, and she reached home in February 1848. The *Rainbow's* four passages from China to New York, therefore, averaged $91\frac{1}{4}$ days, which was fast sailing, but none of the passages approached in speed the 78-day 6-hour 1845 run of the old flat-bottomed packet *Natchez*. Exaggerated statements were made regarding the speed of the *Rainbow*. It was generally said that on her maiden voyage in 1845 she "went out to Canton in 92 days and back in 88 days"; other reports said that she returned via the Portuguese-Chinese port of Macao, "from which she made a run of 79 days to New York"—which does not check with the known facts. We are told that notwithstanding an outward passage of 102 days and a return in 108 days, Capt. John Land, her enthusiastic commander, "unhesitatingly declared" upon his arrival in New York on September 17, 1845: "The *Rainbow* is the fastest ship that has ever sailed the seas, and the ship couldn't be built to beat her." The sailing performance of the *Rainbow* on her last three homeward China-to-New York runs was most excellent, as the following record shows:

| Voyage No. | Departure from Whampoa | Arrival at New York | Length of Passage in Days |
|---|------------------------|---------------------|---------------------------|
| 2 | Jan. 24, 1846 | Apr. 18, 1846 | 84 |
| 3 | Dec. 1846 | Mar. 1847 | 86 |
| 4 | Nov. 1847 | Feb. 1848 | 88 |
| Average of the three passages, 86 days. | | | |

The facts regarding the pioneer clipper *Houqua* (583 tons), built for A. A. Low & Bro. in 1844, have been misunderstood by certain historians, who have maintained that she was built as a warship "to be sold to the Chinese Government" because she had "eight gun ports on each side." The ship was designed so that she could operate as a China packet and was comparable in size with the 505-ton *Montauk* and the 598-ton *Helena*, built in New York in the early forties, and larger than the 457-ton *Coquette*, built the same year (1844) by Samuel Hall, Boston, for Russell & Company, Canton. The Russells and associates were great friends (as were the Lows and Captain Palmer, of New York) of *Houqua*, the prominent Hong merchant of Canton, after whom the ship was named. It was said that in the back of the minds of the owners was the possibility of using her in illegitimate trade; hence they wanted her to be fast enough and not too big for that trade. Gun ports to intimidate pirates were desirable on any China packet, and it paid to carry a few real guns; nevertheless, the *Houqua*, from the first, was intended for the merchant service, in which she operated for twenty years. The contemporary press described the *Houqua*, when constructed, as "one of the prettiest and most rakish looking packet ships ever built in the civilized world," and James Gordon Bennett, in the New York *HERALD*, wrote of her:

We never saw a vessel so perfect in all her parts as this new celestial packet. She is . . . as sharp as a cutter—as symmetrical as a yacht—as rakish in her rig as a pirate—and as neat in her deck and cabin arrangements as a lady's boudoir. Her figurehead is a bust of *Houqua*, and her bows are as sharp as the toes of a pair of Chinese shoes.

Between July 1, 1844, when the *Houqua* left New York on her first voyage, and January 1850, she made six voyages between her home port and China, and her passages out and

home were made in excellent time. (During this period, she also spent nine months trading on the China coast between Hong Kong and Shanghai.) On all her early voyages before she was put in the California Cape Horn run (for which she was not suited and too small), the *Houqua* did some fast sailing. Some historians have said that on her maiden passage she went out to Macao in 90 days and made the return trip from Hong Kong in the same time; whereas the *Rainbow*, on her maiden voyage, went out in 102 days and back in 108 days. But records show that the *Houqua* did much better than this, and on her first outward passage, she was 72 days from New York to Anjer and 12 days thence to Hong Kong—a total of only 84 days out; returning, she sailed from Whampoa on December 9, 1844, was 15 days to Anjer, and received her pilot off Barnegat 72 days out from Anjer and 87 days from Whampoa. Following this, she was detained by unfavorable winds off Sandy Hook and was not at her anchorage in New York Harbor until the 90th day out from Whampoa, which was still eighteen days better than the first run home of the *Rainbow*. However, some homeward runs in the China trade were reported as ending when the ships took pilot off Barnegat, and the record run of 78 days 6 hours of the *Natchez* in 1845 was from China to "pilot off Barnegat." The run out to Anjer of the *Houqua* in only 72 days was apparently a record, although the *Helena* (Captain Eyre), which arrived at Java Head on February 14, 1846, in 73 days 20 hours from New York, reported this run as the shortest made. On her second voyage, the *Houqua* left Whampoa December 9, 1845, and was 16 days to Anjer and 75 days thence to New York—a total of 91 days. On her next voyage, the ship ran out to Java Head in 72 days 14 hours and from there was 14 days 3 hours to Hong Kong, completing the passage in the fast time of 86 days 17 hours. The fourth round voyage was completed in under seven months, and the ship made fast passages, but details are not available. On her next run out to China, the *Houqua* experienced bad luck, was dismasted during a terrific hurricane in the Indian Ocean, and was under a jury rig as a brig for the last 55 days of the 131-day passage to Hong Kong. Returning, she sailed November 29, 1848, was only 8 days to Anjer, passed the Cape of Good Hope 42 days out, and crossed the Atlantic equator on the 62nd day; but between Lat. 34° N. and New York, she was held back by calms and heavy gales, so that a passage that gave every promise of being completed in from 83 to 85 days was prolonged to 98 days. On her sixth voyage, the *Houqua* ran from New York to Hong Kong in 90 days. In returning, she had unfavorable monsoons during the first part of the run and completed the passage in 109 days, but made the run from the Cape of Good Hope home in 42 days as against 56 days for the preceding return passage, which she had negotiated in 98 days.

Cutler, in *GREYHOUNDS OF THE SEA*, says that the *Houqua*, when she entered New York Harbor on January 20, 1851, under the command of Capt. Daniel McKenzie, 88 days out from Shanghai, made the best passage of the year from that northern Chinese port (well up the coast and a much longer run than from Whampoa, Hong Kong, or Canton). This was a most excellent run, and "but for the fact that he [McKenzie] was detained four days north of Hatteras by northwest gales, he would have made an even better showing." The *Oneida* (Captain Creesy) left Shanghai five days after the *Houqua* and, although driven, took 106 days to make the passage home—or eighteen days longer than the *Houqua*. The *Oneida* of 420 tons (built in 1852 at New Bedford, Mass.) was "noted for her consistently good passages" in the China trade. She was also in the whaling service, but re-entered the China trade in 1861. (During the Civil War, on a homeward run from Shanghai with a valuable cargo, she was burned by a Confederate raider.)

Concurrently and quickly following the performance of the *Houqua* and the *Rainbow* (and the brilliant record under Capt. "Bob" Waterman of the old New Orleans packet *Natchez* in the tea service), the following fast vessels (all built prior to 1850), particularly the clippers *Sea Witch* and *Oriental*, made reputations for themselves and added to the laurels of American shipbuilders and the United States merchant marine:

| Built | Name | Tonnage | Builder | Owner | Remarks |
|-------|-------------------|---------|-------------------------------|--|---|
| 1844 | HOUQUA | 583 | Brown & Bell, New York | A. A. Low & Bro., New York | On maiden voyage from New York to Hong Kong, 84 days; return in 87 days to pilot off Barnegat. In 1845-1846, made round voyage between New York and Hong Kong in a scant 178 days at sea. Foundered in typhoon, 1865. |
| 1845 | RAINBOW | 750 | Smith & Dimon, New York | Howland & Aspinwall, New York | On second voyage from New York to Canton, went out in 99 days; back in 83 days. Round trip, 6 months 16 days. Foundered off Cape Horn, 1848. |
| 1846 | SEA WITCH | 908 | Smith & Dimon, New York | Howland & Aspinwall, New York | The fastest ship of her day and the first sailing vessel to make permanent records. Ran from Hong Kong to New York in 74 days 14 hours and from Anjer to New York in 62 days. Stranded east coast of Cuba on Mar. 26, 1856. |
| 1847 | SAMUEL RUSSELL | 957 | Brown & Bell, New York | A. A. Low & Bro., New York | Maiden voyage from Whampoa to New York, 83 days. In 1850 and 1852, ran from Anjer home in 70 days. Wrecked in Gaspar Straits in 1870. |
| 1847 | ARCHITECT | 520 | Adams Gray, Baltimore, Md. | Builder was the original owner. | In 1853, won the British tea race from China to London, making the run in from three to eight days' better time than the six next best world-famous clippers. |
| 1848 | MEMNON | 1,068 | Smith & Dimon, New York | A. A. Low & Bro., New York (F. A. Delano, New York) | Showed at times a wonderful burst of speed, but was generally not much in the public eye. Made westbound transpacific records in 1850. |
| 1849 | ORIENTAL | 1,003 | Jacob Bell, New York | A. A. Low & Bro., New York | On maiden voyage, Hong Kong to New York in 81 days (70 days from Anjer). Second voyage, New York to Hong Kong in 81 days; then Hong Kong to London dock, 97 days. Was the first American ship to carry tea to London following repeal of British restrictive Navigation Laws. |

As an indication of dimensions and proportions, a comparison of the chief measurements of two of the most famous of these ships is of interest:

| Name of Ship | Built | Tonnage | Length | Beam | Depth | Ratio | | |
|-----------------|-------|---------|--------------------|-------------------|-------------------|----------|----------|----------|
| | | | | | | L. to B. | L. to D. | B. to D. |
| SEA WITCH | 1846 | 908 | <u>Feet</u> 171 | <u>Feet</u> 34 | <u>Feet</u> 19 | 5.0 | 9.0 | 1.8 |
| ORIENTAL | 1849 | 1,003 | 185 | 36 | 21 | 5.1 | 8.8 | 1.7 |

The *Sea Witch*, designed—as was the *Rainbow*—by Griffiths and her builders, Smith & Dimon, solely for the China trade, had “a low freeboard and the raking masts of the Baltimore clipper.” She was considered by her builders as an improvement over the *Rainbow* and a more practical vessel. She is said to have carried 1,100 tons of cargo and was generally deemed a very beautiful ship, with a hull painted black with a gilt stripe and carrying a Chinese dragon as a figurehead—the symbol of the Chinese Empire. The *Sea Witch* was launched December 8, 1846. The New York HERALD referred to her “peculiar model and sharp bows,” but said that she was “the prettiest vessel we have ever seen.” We are told: “All New York, on Christmas Eve, 1846, watched the departure for China of the *Sea Witch*, the tallest ship afloat, carrying more canvas than a man-of-war three times her tonnage.” The reputation of the *Sea Witch* for being the fastest ship on the ocean, gained during the first three or four years of her career, was well earned. When Capt. “Bob” Waterman took

her out from New York for Canton, the career of a ship commenced during which, in a few years, more records for fast sailing between ports were broken than by any other vessel during a corresponding period of time, and some of the records have survived to this day and are permanent. Her best day's run, while not high as compared with day's runs of the later much larger and more powerful "extreme" clippers, was 358 miles—much faster than that of any steamship of the period. The *Sea Witch* engaged in the China trade for somewhat over nine years, but after two Cape of Good Hope voyages, she went out via the Horn first by way of Valparaiso and later via San Francisco. The ship was finally wrecked off the coast of Cuba on March 26, 1856, while bringing coolies from Amoy to Havana.

The *Sea Witch*, size and all other factors of design and construction considered, was best adapted for the China and Cape of Good Hope run. A bigger and more powerfully modeled ship, such as many of the large clippers that were built after her in the California Gold Rush boom years of 1850-1853 (followed by the Australian gold find with its demand for fast floating tonnage), had a decided advantage in the heavy weather belts, but on a long voyage where a ship was in many latitudes, crossed the equator, and was some time in the doldrums and mostly in the trade-wind areas, a small ship could more than hold her own. The smaller clippers proved the most successful and the fastest sailers in the China tea trade; the larger clippers had all the best of it going around the Horn and in the Roaring Forties—a service for which the *Sea Witch* was not built. Notwithstanding this fact, the *Sea Witch* lowered the sailing record between New York and San Francisco very substantially and did some very good sailing over that course, beating all her rivals, which had been built in the late forties for the China and not the California trade.

The *Sea Witch*, with an all-time record of 74 days 14 hours from Hong Kong to New York (January 8-March 25, 1849), also made the second best passage when she reached New York on March 15, 1848, in 77 days from Whampoa (66 days from Anjer). On the homeward 82-day passage during her maiden voyage, the *Sea Witch* arrived at New York July 25, 1847, in 62 days from Anjer—another permanent record. She also established the record of 25 days from Anjer to the Cape of Good Hope, which has since been equaled but never beaten. On June 11, 1850, with Capt. George Fraser in command (formerly mate under Captain Waterman), the *Sea Witch* reached Valparaiso from New York after making a westward rounding of Cape Horn in 59 days and record time between the ports. The *Sea Witch* holds the record for the fastest homeward passage (74 days) and the fastest two, three, and four consecutive passages in 75½ days, 77⅓ days, and 79½ days, respectively. The first homeward run from China, herein considered as a passage of 82 days with an arrival at New York on July 25, 1847, is described by Cutler as "a trifle over 81 days from Canton against the monsoon—a record," and he adds: "But she has too many records for one more or one less to matter. . . . On her run out, she passed the Cape of Good Hope 42 days out, having sailed 8,894 miles, an average of 206 miles a day for six consecutive weeks—a record. She passed Java Head 70 days and 10 hours out—a record."

The New York HERALD of August 15, 1847, under the caption, "Remarkably Quick Sailing," announced under the authority of Pilot John Hyer that on the previous day the *Sea Witch* had sailed at a speed higher than anything heretofore attained, for in getting out to sea he had timed her covering a distance of nineteen miles in one hour and three minutes. Although not built for the route, she was the first vessel to go around the Horn to California in under 100 days, and on July 24, 1850, she reached San Francisco via Valparaiso, 97 sailing days out of New York, lowering the 109-day record of the *Samuel Russell* marked up on May 6, 1850, which in turn had beaten the net sailing times reported by the *Memnon* (from New York), *Grey Eagle* (from Delaware Capes), *Architect* (from New Orleans), and the *Grey Hound* (from Capes of Virginia).

The *Sea Witch* also made two runs from New York to Hong Kong via Cape Horn and Valparaiso, both of which were very fast. In 1848 she ran from New York to Valparaiso in 69 days, thence 50 days from Callao to Hong Kong, or 119 sea days on course from New

York to China via the Horn and the Pacific. In 1849 (on her fourth voyage), she was only 118 sailing days from New York to Hong Kong via Valparaiso and Callao. In making these runs to China sailing to the westward, the *Sea Witch* had to buck the westerlies when rounding Cape Horn.

The clipper *Samuel Russell* (957 tons), built in 1847 by Brown & Bell, New York (the builders of the *Houqua*), for A. A. Low & Bro., New York, was named for the eminent merchant and founder of the house of Russell & Company in China, with whom the Low brothers began their business career. This vessel saw twenty-three years of ocean service. The *Samuel Russell* was virtually designed by Capt. Nathaniel B. Palmer (who had been responsible for the *Houqua*), and on her maiden voyage Captain "Nat" brought her home from Whampoa in the fast time of 83 days. On January 15, 1850, she sailed from New York outrageously overloaded, with Capt. Charles Porter Low in command, on her first voyage to California. She carried 1,200 measurement tons of cargo and a freight list of \$75,000 and experienced wretched weather in the North Atlantic and around the Horn; nevertheless, she lowered the record for a passage from an East Coast port to San Francisco to 109 days, beating by a substantial margin every vessel that had sailed before her. Continuing around the world, the "*Russell*" crossed the Pacific to Hong Kong and reached New York on January 27, 1851, in 89 days, making the run from the Atlantic equator to Sandy Hook in only 17 days. The *Samuel Russell* performed the unusual feat in 1851 of arriving twice in New York that year with Canton teas, for she again appeared at the home port on October 20, completing a good out-of-season passage of 102 days against the monsoon after an absence of 7 months and 7 days. In 1850 and again in 1852, the "*Russell*" ran from Anjer home in only 70 days and as late as 1863 ran from Foochow to New York in 89 days. Other good passages of the *Samuel Russell* in the New York-China trade were 92 days out to Hong Kong and 95 days return in 1851-1852; 94 days out to Hong Kong in 1861 and 95 days home from Foochow in each of the years 1858 and 1859; 96 days out to Hong Kong in 1857 and 101 days out to the same port in 1858. In 1853 she ran from Whampoa to New York in 103 days; in 1854, from Foochow home in 105 days; and in 1865 covered the much longer distance from Yokohama to New York in only 103 days. On a long passage against an adverse monsoon in 1857, which occupied 127 days from Foochow to New York, 49 days were spent beating down the China Sea, but the deep-sea run from Anjer home in the Indian and Atlantic Oceans required only 78 days. On another long passage of 123 days from Foochow to New York in 1855, with the ship severely damaged by a China Sea typhoon and leaking badly, the deep-sea run from Anjer home was made in 80 days.

In 1853, when bound to San Francisco, the *Samuel Russell* ran from Cape St. Roque to Lat. 50° S. Atlantic in 16 days—an all-time record. In the China trade, the *Samuel Russell* is credited with a run of 328 nautical miles in twenty-four hours; also on another occasion with covering 6,722 miles in thirty consecutive days, with the best day's run 318 miles. This represents an average run of 224 miles per day and a speed for a month, on a passage from Canton to New York, of approaching 9½ knots per hour.

The Baltimore clippers *Architect* (520 tons), *Grey Eagle* (479 tons), and *Grey Hound* (536 tons), all built in 1848, were designed to be suitable for the China service, but only the *Architect* became directly associated with that trade, and that evidently not with prime intent. In the early summer of 1850, the *Architect* crossed the Pacific from San Francisco to Hong Kong, where she was sold for \$24,000. Under Captain Dearborn, she made a run of 108 days to New York, where she was sold for \$30,000. Under Captain Caspar, she was sent out to California, from where she traded with Australia (a round voyage and a passage out) and then went from the antipodes to China, where, lying idle, she was again sold. Under Capt. George A. Potter, she sailed June 25, 1853, in the British China tea trade for London, making a passage to the Downs of 107 days from Whampoa and 80 days from Anjer. This run, whereas not considered particularly good for a first-class American clipper, beat all competing British ships sailing around that time, with the result that the *Architect* commanded

the highest freight the following season. After filling her British engagements, the *Architect* crossed the Atlantic to New York, from where she sailed direct to Hong Kong on March 1, 1854, arriving June 11 after a passage of 102 days. Once again she was sold, this time to go under the British flag, for a reported price of \$23,000, and she engaged in the British China trade until 1857-1858, at which time her name disappeared from the register.

The *Memnon*, when laid down in 1847 by her builder, was referred to as a somewhat "beamier and deeper *Sea Witch*—but a clipper and a ship built for speed none the less." Measuring 1,068 as against 908 tons, the new ship had about the same length as her immediate predecessor, but was 2 ft. beamier (36 against 34 ft.) and 2 ft. deeper (21 against 19 ft.) and, it is said, was fuller. Indeed, Howe and Matthews do not rate the *Memnon* as a clipper, which she undoubtedly was, and she was historic. While built for the China trade, she became the first real clipper ship to round Cape Horn in the Gold Rush to California, sailing from New York on April 11, 1849, and making a passage to San Francisco in 122 days net (notwithstanding a mutinous and incompetent crew) when all the other reliable recorded sailings from East Coast ports to California during March, April, and May—including some of early or pre-clippers and reputedly fast sailers—averaged 175 days (maximum, 222 days; minimum, 150 days). The *Memnon* is also said to have been the first American clipper to enter Liverpool or any British port, and in 1848 this ship proved that she could sail. Leaving New York on November 6, she reached Liverpool (pilot off Point Lynas) the night of November 20 after a passage of 14 days 7½ hours, during which she sailed past the Cunard steamer *Europe* at a 13-knot clip. Late in 1850, the *Memnon* (Capt. Joseph Gordon) made a record run of 36 days from San Francisco (November 9) to Canton (December 15) and from Honolulu to Hong Kong (or Canton) in 19 days. (This passage was also reported as "35 days from San Francisco to China.") The *Memnon* was lost in Gaspar Straits on September 14, 1851, when engaged in the British China tea trade. She had sailed from Whampoa August 16 and was bound for London.

The *Oriental*, which was to become a great historic vessel in the British China tea trade, did some brilliant sailing in the American China service before she sailed on August 28, 1850, from Hong Kong for London "against the monsoon" and lowered the record between any Chinese and British ports with a fine run of 91 days to the Lizard (70 days from Anjer) and 97 days to the unloading dock at London (76 days from Anjer). The *Oriental*, built in 1849, was not an extreme clipper, but was a somewhat enlarged *Samuel Russell* and embodied the ideas of Capt. Nathaniel B. Palmer. Under his command, she went from New York (September 14, 1849) to Hong Kong (January 1, 1850) in 109 days on her maiden voyage, but took the eastern passage from the Indian Ocean to the China Sea. The ship's next two runs—the return passage of Voyage No. 1 and the outward passage of Voyage No. 2—are outstanding, the 81-day run from New York to Hong Kong constituting a record that held to the end of sail. The particulars of the passages from Hong Kong to New York and return, which formed a round voyage from China, show brilliant sailing both in the China Sea and over the deep-sea (Indian and Atlantic Oceans) part of the course.

| Departure | | Destination | | Length of Passage in Days | | |
|---|------------------|-------------|------------------|---------------------------|-----------------------------|-------|
| Port | Date | Port | Date | Whampoa-Anjer | New York-Anjer | Total |
| Whampoa (Hong Kong) | Jan. 20, 1850 | New York | Apr. 21, 1850 | 11 | 70 | 81 |
| New York | May 18, 1850 | Hong Kong | Aug. 8, 1850 | 10 | 71 (Prince's Straits) | 81 |
| Total round voyage, Hong Kong-New York..... | | | | 21 | 141 | 162 |

Capt. Nathaniel B. Palmer was in command during the first of these two passages and his younger brother, Capt. Theodore D. Palmer, on the second run, which was the outward

passage of the ship's second voyage. On the run to New York, the *Oriental* was 39 days from Whampoa to the Cape of Good Hope and 42 days from the Cape to New York. On the record-making run out to China, the ship was 25 days to the Atlantic equator, logging 3,904 miles (best day, 264 miles). She was on the meridian of the Cape of Good Hope on the 45th day out (best day in the South Atlantic, 300 miles). During the run up the Indian Ocean, the *Oriental*, for the eleven days July 10-21, averaged 264 miles a day (best, 302 miles; poorest, 228 miles), and during the thirty-three consecutive days June 19 to July 21, she covered 7,890 miles—an average of 239 miles per day and some 10 knots per hour. When the clipper entered Prince's Straits on July 29, she had sailed 14,521 miles by observation—an average of 204½ miles per day for 71 days.

After engaging in the British China tea trade, the *Oriental* loaded at Shanghai (some 850 miles up the China coast from Hong Kong) and sailed for New York on September 1, 1852, during the unfavorable monsoon. The beat down the China Sea occupied 28 days, and the ship ran from Anjer (September 29) to New York in 78 days, being held off the Cape of Good Hope ten days in light airs. On her next voyage, which was planned as around the world via San Francisco and China, the *Oriental* was the first ship to enter the River Min after the port of Foochow was opened to trade. On February 25, 1854, while proceeding down the river in charge of a pilot and "assisted" by a number of Chinese boats, she struck submerged rocks and sank in deep water. The fine ship, with a cargo valued at \$175,000 aboard, became a total loss, although all the crew and passengers were saved.

Another ship built in the late forties that made a few fast runs while engaged in the China trade was the *Raduga* of 587 tons, built by Currier & Townsend at Newburyport, Mass., in 1848 for H. Prince et al., of Boston. The *Raduga* sailed from Whampoa January 2, 1849, bound for New York. She made a very fast run of 9 days with a favorable monsoon to Anjer, but had light winds during the rest of the passage. She was off the Cape of Good Hope 46 days out, at the Atlantic equator on the 69th day, and arrived at her destination April 4, completing a passage of 92 days from Anjer, and the total distance logged was stated as only 14,238 miles. After a run out to Manila of 102 days, the *Raduga* sailed from Macao October 23, 1849 (her second departure from Hong Kong Bay in that year), and reached New York on February 4, 1850, after a passage of 104 days. Before being put on the Cape Horn route, the *Raduga* made a round voyage in the China trade, and the return passage to New York, leaving Hong Kong toward the end of 1850, was made in 101 days. The average of her three homeward runs from China made in 1849-1850 was 99 days. The *Raduga* (later renamed *Iolani* of Hawaii and *Modesta* of Barbados) continued in service for forty-two years until she was sunk after collision in 1890, but she did not engage in the China trade, although she made a passage of 112 days from Whampoa to New York in the summer of 1853 during the unfavorable season.

The following is a list of thirty-eight fast American sailing vessels (ships and barks), sizable for their period, which were built during the years 1832-1849 inclusive for and generally used in the China (oriental, East Indian, and Indian) trade. Vessels specifically mentioned in more detail elsewhere have been intentionally omitted.

| Name of Vessel | Year Built | Ton-nage | Dimensions in Feet and Inches | | Builder | Owner | Remarks |
|----------------|------------|----------|-------------------------------|-------|-----------------------------|-------------------------------|--|
| | | | Length | Beam | | | |
| SPLENDID | 1832 | 473 | 126- 6 | 28-10 | Baltimore, Md. | N. L. & G. Griswold, New York | From Canton home in spring of 1843 in 102 days. |
| HORATIO | 1833 | 470 | 119-10 | 29- 8 | Hillman, New Bedford, Mass. | Grinnell & Minturn, New York | Made four successive Canton-New York passages averaging 104 days; one run of 98 days. In 1843, round voyage in 8 months 20 days. |

(Continued on next page)

| Name of Vessel | Year Built | Ton- nage | Dimensions in Feet and Inches | | Builder | Owner | Remarks |
|---------------------------|------------|--------------|----------------------------------|-------|--|--|--|
| | | | Length | Beam | | | |
| GENTOO | 1834 | 435 | 124- 2 | 27- 9 | Herman Holmes, Boston, Mass. | Daniel C. Bacon, Boston | An oriental and Indian general trader. |
| HINDOO | 1835 | 580 | 136 | 30- 6 | Portsmouth, N. H. | Daniel C. Bacon et al., Boston | An oriental and Indian general trader. |
| VALPA- RAISO (bark) | 1836 | 402 | 117- 6 | 27- 6 | Baltimore, Md. | Howland & Aspinwall, New York | Originally owned by Wil- liam Platt et al., Phila- delphia. A fast general trader. |
| AKBAR | 1839 | 643 | 148-10 | 30- 7 | Samuel Hall, East Boston, Mass. | John M. Forbes et al., Boston | Maiden passage out to Can- ton, 109 days against the monsoon. Condemned at Valparaiso, 1854. |
| SOOLOO | 1840 | 440 | 131- 7 | 26-11 | Salem, Mass. | Benjamin H. Silsbee et al., Salem | A fast general trader. |
| PROBUS | 1841 | 647 | 143 | 31- 6 | Jotham Stetson, Medford, Mass. | Daniel P. Parker, Boston; and William S. Wetmore, New York | Maiden voyage to China; round trip in 8 months 15 days. New York HERALD of Mar. 19, 1842, proclaimed her "the finest and fastest ship ever in the China trade." |
| ONEIDA | 1832 | 420 | 116- 1 | 28- 4 | New Bedford, Mass. | The Hathaways et al., New Bedford | Operated as packet and whaler, but was prima- rily of the China packet type. Noted for "con- sistently good passages" in China trade. Burned by Confederates, 1863. |
| JOHN G. COSTER | 1841 | 714 | 141 | 33- 6 | New York | Howland & Aspinwall, New York | Originally owned by Josh- ua Atkins. A good gen- eral trader. |
| PAUL JONES | 1842 | 624 | 144- 6 | 30- 8 | Waterman & Ewell, Medford, Mass. | John M. Forbes and Russell & Co., Boston | A good-carrying type of Canton packet resem- bling later Down East- ers. |
| COHOTA | 1843 | 691 | 145- 6 | 32- 3 | William H. Webb, New York | N. L. & G. Griswold, New York | Made homeward runs of 100 days from both Canton and Calcutta. Made Cape Horn pas- sages to San Francisco in 1850 and 1852. |
| AMITY | 1843 | 499 | 134 | 28- 5 | Newbury, Mass. | Robert B. and John M. Forbes, Boston | A China packet and ori- ental general trader. |
| HAIDEE | 1843 | 648 | 142 | 31- 8 | Freeport, Maine | Isaac T. Smith, New York | A fast general trader. |
| PANAMA | 1844 | 612 | 135 | 31- 8 | William H. Webb, New York | N. L. & G. Griswold, New York | Built especially for China tea trade. In 1847, made homeward passage from Canton in 91 days. |
| JOHN Q. ADAMS | 1844 | 622 | 144- 4 | 31- 8 | Paul Curtis, Medford, Mass. | Daniel P. Parker, Boston | A China packet. Made passage from Canton to New York in 97 days. Made round voy- age to Manila in 7 months 25 days and ad- vertised in New York Jan. 1850 as "the ele- gant clipper ship guar- anteed to make a shorter voyage to California than any other vessel." <i>(Continued on next page)</i> |

| Name of Vessel | Year Built | Ton-nage | Dimensions in Feet and Inches | | Builder | Owner | Remarks |
|-----------------------|------------|----------|-------------------------------|-------|--|---|--|
| | | | Length | Beam | | | |
| COQUETTE (bark) | 1844 | 457 | 116 | 29- 9 | Samuel Hall, Boston, Mass. | Russell & Co., Boston and Canton, China | A fast China packet; first commanded by Capt. Oliver Eldridge. |
| HEBER | 1844 | 435 | 126- 8 | 27- 5 | Waterman & Ewell, Medford, Mass. | Daniel C. Bacon et al., Boston | A good sailing and carrying China packet and oriental trader. In British tea trade, 1852. |
| THOMAS B. WALES | 1844 | 599 | 141- 7 | 30- 6 | Waterman & Ewell, Medford, Mass. | George W. Wales et al., Boston | An East Indian, China, and general trader. |
| CANDACE (bark) | 1845 | 398 | 117- 6 | 27- 4 | Warren, R. I. | Bucklin & Crane, New York | An excellent China packet. In 1851, delivered two cargoes of tea in New York. Made round voyage New York-Shanghai in 9 months 5 days and in 19 months 17 days delivered three full cargoes of tea in New York from the far north port of Shanghai. Commanded by Capt. E. C. Gardner. |
| TARTAR | 1845 | 573 | 140 | 30- 6 | Hammel, Philadelphia | Booth & Edgar, New York | An oriental and general trader. |
| CORSAIR | 1845 | 301 | 115 | 23-10 | Jotham Stetson, Medford, Mass. | Augustus Hemenway, Boston | A fast general trader. |
| ARIEL | 1846 | 572 | 136- 4 | 30- 4 | Currier & Townsend, Newburyport, Mass. | Minot & Hooper et al., Boston | A fast China packet. Made run from Canton to New York in 90 days; from Cape, 39 days; from line, 17½ days. Sold at Shanghai, 1857. |
| ISABELITA HYNE (bark) | 1846 | 350 | 118 | 25 | Philadelphia | Philadelphia and New York parties | A fast general trading bark. In California trade, 1851 and 1852. Lost near San Francisco, Jan. 8, 1856. |
| ANSTISS | 1847 | 595 | 140 | 30- 5 | Hayden & Cudworth, Medford, Mass. | William S. Wetmore, New York | A general trader of good speed that carried well. |
| URIEL | 1847 | 799 | 156- 4 | 33- 5 | William Hall, Boston, Mass. | Page, Crocker, Waldron, Wade et al., Boston | A general trader. Made a California passage in 1850 from Boston to San Francisco, 157 days. |
| CARRINGTON | 1847 | 641 | 136 | 32- 4 | Warren, R. I. | Edward Carrington, Providence, R. I. | A general trader—China, East Indies, etc. |
| TSAR | 1847 | 470 | 131 | 28 | Currier & Townsend, Newburyport, Mass. | William Ropes, Boston | A general trader. In British China tea trade, 1853. Made California run, 1856. Sold in North Pacific to fur traders. |
| RICHARD ALSOP | 1847 | 836 | 157- 2 | 34- 1 | Bath, Maine | N. L. & G. Griswold, New York | A fast general trader. |
| HORSBURGH | 1847 | 543 | 141 | 28-10 | Hayden & Cudworth, Medford, Mass. | Daniel C. Bacon et al., Boston | A China trader. Made California passages in 1852 and 1858. |
| ESTHER MAY | 1847 | 499 | 129 | 29- 2 | Bristol, R. I. | Morrill & Baker, Boston | Described as a "pre-clipper packet" in Pacific trade. Made California passages, 1853 and 1858. Lost in Yangtze River, 1860. |

(Continued on next page)

| Name of Vessel | Year Built | Ton- nage | Dimensions in Feet and Inches | | Builder | Owner | Remarks |
|--------------------|------------|--------------|----------------------------------|-------|---|--|---|
| | | | Length | Beam | | | |
| ABAEL- LINO | 1848 | 606 | 144- 6 | 30- 4 | J. T. Foster, Medford, Mass. | James Tirrell et al., Boston | A fast general trader. |
| LIVING AGE | 1848 | 727 | 150- 3 | 32- 6 | Jotham Stetson, Medford, Mass. | William Appleton, John H. Reed, et al., Boston | A Chinese and East In- dian trader. Wrecked on Pratas Shoals, Dec. 31, 1854. |
| ANDALUSIA | 1848 | 772 | 151- 4 | 33- 5 | Baltimore, Md. | David, Thomas, and Henry Wilson, Baltimore | Known as "a Baltimore clipper." In British China tea trade, 1852. Made California voy- ages in 1849, 1850, 1852, and 1853. |
| THOMAS WATTSON | 1848 | 349 | 121- 6 | 26- 8 | Caleb Goodwin & Co., Baltimore, Md. | Thomas B. Wattson, Philadelphia | A fast general trader. Built for China and East Indian trade, but diverted to California trade in Feb. 1850. Made five California voyages, 1850-1855. |
| SAMUEL APPLETON | 1849 | 781 | 156- 6 | 32 | Paul Curtis, Medford, Mass. | Daniel P. Parker, Boston | Built as "China clipper." In British China tea service, 1853. Made voy- ages to California in 1852, 1853, and 1855. |
| LANTAO | 1849 | 593 | 135- 6 | 31- 1 | Samuel Hall, East Boston, Mass. | Daniel N. Spooner, Boston | Built as "China clipper." With Capt. Andrew Barstow, sailed from Caldera, Chile, in Oct. 1856 and "went miss- ing." |
| ARGONAUT | 1849 | 575 | 147- 5 | 29 | Samuel Lapham, Medford, Mass. | John Ellerton Lodge, Boston | Laid down as a "China clipper," but diverted to other trades. Sailed Oct. 30, 1849, from Boston to California and reported a 133-day passage. Was the second American vessel to sail from China (Aug. 27, 1850) with tea for London and the second to arrive there (Jan. 17, 1851). |

Samuel Hall, of Boston, built some small fast traders of China packet type during the years 1839-1849 inclusive before he commenced to build acknowledged clippers in 1850—both large and small. In 1850, Hall built the peerless *Surprise*, a clipper of 1,261 tons, for the China trade, the clipper *Game Cock* of 1,392 tons for general trade (both designed by Samuel H. Pook, of Boston), and the clipper bark *Race Horse* of 530 tons, which was of a size that he had been building for years for the Far Eastern and also for the South American trade. The little bark was promptly put by Goddard & Company, her Boston owner, in the California run, and Captain Babcock wrote in his log on October 20: "At 11 P.M. made the Farallones Rocks, one hundred and eight days from Cape Cod Light. So ends." The *Surprise* (Capt. Philip Dumaresq) sailed from New York December 13, 1850, and made a record run of 96 days 15 hours to San Francisco. Typical of the fast sailing early clippers or pre-clippers built by Samuel Hall that did not engage in the China trade and yet were of the size and type was the bark *Hazard* of 404 tons, launched March 13, 1849 (length 122½ ft., beam 27½ ft., depth 13¼ ft.). This little vessel had a mainmast 130 ft. long and had the rig, if not the model, of an extreme clipper. Instead of being used in the tea trade, she was operated most successfully in the South American coffee trade, in which she made a better record than the

well-known *Courier* of 392 tons, built by Currier & McKay at Newburyport in 1844. Lieutenant Maury says that the *Hazard* made six passages to Rio de Janeiro in her first three years, during which her runs to the equator averaged 26 days.

The *Reindeer* of 800 tons, launched by Donald McKay at his East Boston yard on June 9, 1849, for J. M. Forbes, George B. Upton, and Sampson & Tappan, was designed as "a China clipper." She was referred to, when building, as "McKay's first clipper" and would have performed better in the China trade than in the California run, in which she made five slow voyages during the period November 1849-November 1856. She was wrecked in the South Seas on February 12, 1859.

The *Wisconsin* of 925 tons, built in New York in 1847, was referred to as a "fast Canton trader which preceded the clipper." She was owned by B. A. Mumford et al., New York. The *Wisconsin* made a wonderful run of 96 days from Hong Kong to the Downs in the British China tea trade in the winter of 1850-1851 and a year later, under less favorable sailing conditions, made a very creditable passage from anchorage to the London unloading dock in 125 days. The ship also made three westward Cape Horn passages to San Francisco, the first two in very good time. She was later sold to South American owners.

Another big, fast general trader that saw service in the Pacific and was described as a pre-clipper was the New York-built *Jamestown* of 1,151 tons, constructed in 1847 for Slate, Gardner & Company, New York. In 1851 this ship made a good passage in the British China tea trade. In 1852 she made a good Cape Horn run to San Francisco, and she arrived at New York May 15, 1854, completing a very fast passage of 91 days from Manila.

The very fast passages made by the small packets and early clippers in the China trade, the exploits of the *Sea Witch* and *Natchez* under Capt. "Bob" Waterman, the *Houqua* and *Samuel Russell* under Capt. "Nat" Palmer and his brothers, and the *Rainbow* under Capt. John Land, and the good runs made by relatively slow ships under the driving power of such skippers as Josiah P. Creesy of the *Oneida*, who was to win fame with the *Flying Cloud*, Edward C. Nickels, who stepped from the *John Q. Adams* to the speedy extreme clipper *Flying Fish*, and Philip Dumaresq, who went on up from such an old "slowpoke" as the packet *Great Britain* (which, nevertheless, made fast passages and outsailed much speedier craft) to the wonderful extreme clippers *Surprise*, *Romance of the Seas*, etc., have caused shipmasters and members of the marine fraternity to wonder why the "out-and-out" clippers of the early fifties, some of which were veritable racing machines, did not make much faster runs than they actually achieved and why the best runs of the amazing *Sea Witch* have stood to the end of sail as permanent records. As an excuse, we read the theory advanced by skippers of the fifties, sixties, and seventies that there was a period of most favorable sailing conditions in the China trade in the forties and that "the winds were, in a measure, dying out and the trades becoming unstable"; that while fast passages were being (and would be) made from time to time, a cycle of good winds and favorable sailing conditions (wind and sea) was not recurring. It would seem, however, that with the same command and men, imbued with the same drive, urge, and discipline, a *Sea Witch* in the twentieth century could be expected, over a period of time, practically to duplicate her achievements made prior to the mid-nineteenth century; but even as she closed her career, the day of the Yankee foremost hand was past, and the greatness of the unequalled masters of square-rigged sail was on the wane.

The Repeal of the British Navigation Laws and the Opening of the China-Britain Tea Trade to American Ships—the Pioneer Passage of the American Clipper ORIENTAL in the British Tea Trade

The repeal in 1849 of the British Navigation Laws, which were first enacted in 1651 by the Parliament of Cromwell, permitted American ships to enter the China-Britain tea trade. It handled an infinitely bigger volume of tea than that to all American ports and under conditions which made the British business more profitable than the American to high-class, fast ships. British shippers, anxious to obtain the "new season's market" at the earliest possible date, were naturally delighted with the facilities for fast transport afforded by the swift and well-driven American clippers. The fine-lined American ships on berth were sure of tea cargoes from China to England at most attractive rates of freight; whereas the old-fashioned, full-lined British "tea wagons," when they could obtain any business at all, had to be content with inferior tea at inferior freights. After the repeal of the old, exclusive British Navigation Laws, American ships gained a share—which was the cream—of the Chinese tea trade with Britain. Moreover, American-built ships were also admitted to British registry, and between 1850 and 1857 all the largest, finest, and fastest ships owned and chartered in England were American built. In the China tea trade, swift vessels held an important advantage in the delivery of a cargo that would sell at high prices. A long sea voyage was considered detrimental to fine teas. "The most delicate sorts," it was said, "are likeliest to mold in sea air." This fact, combined with a nervous mania for velocities that characterized the age, fostered the notion that "the better teas were worth a cent a pound above the market for each day saved from a mean of 100 in transporting them." Curiously, it became good business for Yankee skippers and, later, for British clipper ship captains "to blow sails out of their bolt ropes, even to see topmasts go crashing to leeward with all gear, when every day gained by such reckless driving might add \$2,000 to the value of a cargo of tea." Such a feeling on the part of merchants, owners, and sea captains encouraged the designers and builders of ships to produce extreme clippers—built primarily for speed and to carry relatively light cargoes which paid high freights, with a bonus on speed. The carrying capacity of the earliest built, swift clippers proved to be too small to pay well in trade routes that developed following the finding of gold in California and, shortly thereafter, in Australia. The around-the-Horn run from eastern ports to San Francisco required relatively large and powerful vessels for maintained speed and big ships to handle the available cargoes offered at high freight rates. Moreover, some of the early clippers were too lightly built for the severe Cape Horn route and the Roaring Forties. So the American clippers built after 1850 were large vessels, and most of them were as unsuited to the China tea trade as Chinese tea clippers were unsuited to the California trade.

The American-Chinese tea clipper period of about 1844-1860 was divided into two parts, the first of which consisted of direct trading between American and Chinese ports. The Gold Rush to California, commencing in the fall of 1848 and reaching its height in 1849-1852 (with the largest number of ships built for this trade being constructed in 1853), led many of the clippers to follow a trade route from New York around Cape Horn to San Francisco, thence to China and back with tea to an American or British port, instead of following the usual course from an eastern United States or British port to China via the Cape of Good Hope. The first American ship to take advantage of the chance to enter the British tea trade, after the repeal of the restricting British Navigation Laws, was the *Oriental* (1,003 tons; length 185 ft., beam 36 ft., depth 21 ft.), which was built in 1849 for A. A. Low & Bro. by Jacob Bell in New York. This ship, besides being of historic interest with respect to the part she played in the China tea trade, was a craft of great importance in a technical

sense. She was the third Bell-built, Low-owned clipper (i.e., she followed the *Houqua* of 706 tons, built 1844, and *Samuel Russell* of 940 tons, built 1847), and she incorporated in her design and construction the experiences gained with the two earlier fast sailers. She was described when launched as "a larger and sharper edition of the *Samuel Russell*." This is hardly correct, for she was, in fact, a more powerful and better seagoing clipper, but with a block coefficient of fineness not perceptibly less than that of her predecessor. Whereas the *Memnon* was the third of the Griffiths-designed, Smith & Dimon-built clippers (i.e., *Rainbow* of 750 tons, built in 1845; *Sea Witch* of 908 tons, built in 1846; and *Memnon* of 1,068 tons, built in 1848) and was a fast vessel, she failed to approach in general class and performance the marvelous *Sea Witch*, the second of the trio. On the other hand, the *Oriental*, the third Bell clipper, outshone the most excellent *Samuel Russell*, the second of the Bell trio, to such an extent that she challenged the *Sea Witch* for leadership as a successful seagoing and money-making clipper.

The *Oriental* was the first American-built and owned vessel to enter the West India docks in London, and she caused a sensation. When she arrived at Hong Kong on her second voyage in 1850 only 81 days out from New York, she had averaged two hundred nautical miles a day on the entire passage, for thirty-three days in succession had averaged 239 miles per day, and in twelve consecutive days covered 3,119 miles—an average of 260 miles per day; on one day, she made 302 miles and at times logged over 14 knots per hour. The *Oriental* was promptly chartered at Hong Kong through Russell & Company to carry tea to London at the high rate of £6 per ton of 40 cubic feet, or 3 shillings per cubic foot, while British ships—being slower, smaller, and generally inferior—were at anchorage waiting for cargoes and offering space at £3-10-0 per ton of 50 cubic feet, or less than one shilling and five pence per cubic foot; i.e., 47 per cent of the freight rate offered to and paid the American clipper. The *Oriental* sailed from Hong Kong on August 28 with a full load of tea and beat down the China Sea against a strong southwest monsoon; yet she arrived at the Lizard 91 days out and was moored at the West India docks in 97 days from Hong Kong—a passage never equaled under sail before and rarely surpassed since. Considering the time of year and the wind and sea conditions, the performance was an outstanding one in the world's all-time history of sail. It has been said, "The arrival of the *Oriental* in London with her cargo of tea, in the British crisis of 1850, aroused almost as much apprehension and excitement in Great Britain as was created by the memorable Tea Party held in Boston Harbor in 1773." We are told that when the *Oriental* was placed in dry dock, the British Admiralty "took off her lines" and, of course, used them to inspire and assist would-be competitive British shipbuilders. The cost of construction of the *Oriental*, ready for sea, was stated as \$70,000, and on this one lap of her round voyage carrying tea, the vessel, it is said, earned \$48,000 in freight money.

American-built packet ships had been crossing the Atlantic and lying at Liverpool and London docks for years. They were greatly admired and commented upon most favorably by the press and shipping interests, but until British shipowners saw Yankee sailing craft as competitors for British overseas trade, they made no great effort to improve the caliber of British ships. The *Oriental* in London, at the end of 1850, exhibited the first real clipper ship to British eyes, and she proved to be both a great attraction and an object lesson to shipbuilders, owners, and maritime interests. In quality the United States-built and manned sailing ships of the packet, general service, and clipper type—semi and extreme—were far ahead of any British or any other foreign-built ships, and this in model, spar and sail plan, construction (both general and in detail), and size. It was also well and truly said by competent British authority that, in addition to superiority in model and size, the American ships were "first in the cut and set of their sails, and the British—along with the rest of the world—nowhere." Again, we read, "The Yankee ships work several men lighter than the British, due to their use of deck winches, patent sheaves, light manila running gear, large blocks, etc." The British persisted evidently for many years in using small blocks and heavy running gear, with two or three men handling them to do the work of one man on a Yankee clipper.

In the forties, the best fast sailing vessels built in Britain were of Aberdeen (Scotland) model and construction as initiated in 1839 by Hall, who built "small, smart sailers" for coasting work, which service was rapidly being taken by paddle steamers. Hall's early craft are spoken of by British marine historians as small "clippers." Their bow water lines were sharp and hollow, capacity was sacrificed to speed, they carried a lot of canvas, and their form and rig were much like those of a cruising yacht. The first "Aberdeen clipper" was evidently the *Scottish Maid*, built in 1839. It would seem that this craft was the pioneer of a fast sailing type designed to hold the coastal transportation business for sail against the winning competition of steam, but the *Scottish Maid* was a schooner and not a ship, and the British claims that she was "the world's first true clipper" should not be taken seriously; she was not even a British *Ann McKim* (built in 1833 by Kennard & Williamson, Baltimore, and suggested by some enthusiasts as America's pioneer clipper). Hall's "Aberdeen clippers" can be likened somewhat to the much-referred-to American "Baltimore clippers"; neither type was, in fact, a true clipper, but these vessels had been designated as such in a popular sense merely because, comparatively, they were fast sailers. By 1850, Hall had built about sixty of these "smart" Aberdeen vessels, but when a British authority says that "one of Hall's Aberdeen clippers, the *Reindeer* (328 tons), was the winner of the China tea race of 1850," it seems necessary to qualify the statement. While the American clipper *Oriental* was making her initial and record run of 97 days from China to London, dock to dock, and 91 days to the Lizard, the *Reindeer*, with another Aberdeen clipper, the *Countess of Seafield* (450 tons), was leading the British fleet home with passages of "about 110 days"—presumably to London, but most probably to Deal or a Channel port.

Hall, of Aberdeen, was followed by his townsman, Hood, as a builder of fast sailers of the Aberdeen clipper type, and he built for George Thompson & Company, which founded the Aberdeen White Star Line, or "Aberdeen clipper" line. These Aberdeen ships of the forties and early fifties not only had a long, sharp bow with concave water lines but also were much narrower and wetter than contemporaneous American clippers and were decidedly smaller and less powerful craft.

One immediate result of the Yankee clipper *Oriental's* arrival in London, after her record-making passage and following the "taking off of her lines" by the British Admiralty in dry dock, was the ordering of two British clippers from Alexander Hall, of Aberdeen; i.e., the *Stornoway* by Jardine, Matheson & Company, of London, and the *Chrysolite* by Taylor & Potter, of Liverpool. These two ships are generally referred to as Britain's first tea clippers. Although the builder, Hall, had the lines of the *Oriental* to guide him, the models of the *Stornoway* and *Chrysolite* were copied only with a British persistency to maintain British tradition with respect to proportions of length to beam. These, as a matter of fact, had never been determined by experience, test, or theory, but had been virtually dictated in the past by the prevalent system of taxation.

*The New British Clipper CHALLENGER Reports Racing the
American Clipper CHALLENGE in 1852*

The *Stornoway* and *Chrysolite* were designated and given much publicity as Britain's pioneer deep-sea clippers, which would compete with and "be superior in speed" to the highly esteemed American clippers. In reality, however, they were merely developments of the Aberdeen model of sailing craft modified by absorbing ideas of entrance run, diagonals, and section lines from the *Oriental* and applying characteristics of curves mathematically;

but most, if not all, of the benefit to be gained from following the American model was lost by maintaining faulty proportions of the prime dimensions of the hulls. These early British tea clippers showed good speed in mild and moderate weather, but because of their lack of beam were admittedly far less powerful than the American boats in heavy weather and "could not be driven as were the Yankee ships in strong breezes." They had so little bearing forward that they dove into the seas and gained a bad reputation for washing men off the jib boom.

There are even some British authorities who maintain that the first real British clipper was the *Challenger*, built in 1852 by Richard Green of the famous Blackwall Line. "Dicky" Green had established a great reputation in Britain in connection with his frigate-built ships of a packet type which had proved to be a vast improvement on the old-fashioned British East Indiamen. Green's *Challenger*, it is admitted, was deliberately copied from the lines of a Yankee clipper, presumably the *Oriental*, and "she was laid down in a spirit of defense and defiance by a British shipowner who could not in a spirit of complacency and ultra-conservatism see British ships being branded as inferior to those of America in the various trading routes on the seas, and freight that British bottoms had carried being shipped in Yankee craft of superior size and speed at a heavy premium in rate." Whereas Green affirmed that he built the *Challenger* primarily "to put heart into the British" shipbuilding and shipowning interests, he still followed the British tradition in building a relatively small ship, and the *Challenger* was only about half the tonnage of an American clipper of the period.

The entry into the clipper ship trade of Richard Green, a man so intimately connected with Blackwall traditions and with East Indiamen by both personal knowledge and inheritance, recalls the designation applied to these two distinctly different types of sailing craft. The old East Indiamen were popularly termed "the Aristocrats of the Ocean"; the China clipper became generally known as "the Dainty Lady of the Sea."

"Dicky" Green promptly challenged—by words, but not backed by money—any, or all, "Yankee clippers" to a race with his well-named *Challenger* in the China tea trade. In 1852 the British claims for recognition as designers, builders, and operators of "clipper" ships were not taken seriously outside of a certain element in Britain. No attempt was made by Americans to sail with and race the new *Challenger*, and but little, if any, attention was paid to "Dicky's" goads and tirades. As luck would have it, the American clipper *Challenge* sailed from China for London with tea about the same time as the British-built clipper *Challenger*, and, according to British marine writers, "the first tea race between the leading clipper ships of the two great maritime powers was on." Such statements were false in many ways. In the first place, the *Challenge* was far from being, as they claimed, "the leading American clipper ship" suitable for the China trade; as a matter of fact, following her unlucky pioneer passage to California, she was a disappointment to builders, command, and owners and was admittedly the big mistake that W. H. Webb, in early hysterical clipper shipbuilding days, made during his long and successful career as a designer and builder of wood ships. The *Challenge* was more of a Griffiths than a Webb product, and, contrary to the best American trend of design at the time as exemplified in the product of Samuel H. Pook, of Boston, she was given not only extreme hollow lines forward but also "the biggest deadrise at the mid-section, this rise being 42 inches at half floor." She was modeled to sail well in the tropics, but was far too big for the China trade, being of 2,006 tons register and the largest and longest merchantman ever built when she was launched. This was from two to three times as large as the best and biggest China packets and four or five times as large as the British, who had had much experience in that trade, declared was the ideal size. The *Challenge* was dimensioned for a Cape Horner, but was badly modeled for that trade. She had an excellent model for speed under conditions that suited her, but the trouble was to find the trade route in which a ship of her size and model would perform creditably for any length of time. Nevertheless, the ship made two record north transpacific runs, beat the fastest

sailers in the British China tea trade, and, it was said, "would leave anything afloat astern if conditions of wind and sea just suited her."

The *Challenge* was famous in America, not because of her sailing powers but because she was "the costliest vessel ever built in the United States" and by reason of the disappointment experienced in her first run around the Horn to San Francisco under the command of Capt. "Bob" Waterman. The *Challenge*, in the around-the-Horn service, made three west-bound passages, New York to San Francisco, and averaged 114.3 days. There are some twenty American clippers with better average records, and whereas the best run of the *Challenge* on this route was a passage of 106 days, the *Flying Cloud* (built at the same time), on two occasions, and the *Andrew Jackson*, once, made runs of 89 to 90 days. Two of the three passages of the *Challenge* were runs of 116 and 120 days. Contemporaries among the shipbuilding and shipping fraternity in the United States generally branded the *Challenge* as "the product of a radical Webb"—quite different from that of the natural and sounder Webb of the later fifties and sixties. Again, although the British-built *Challenger*, as soon as she was put in the China trade in 1852, promptly threw down the gauntlet rhetorically to any Yankee ship, thus proving that she was well-named, "Albion's defiance to the American clippers that were winning all speed laurels on the world's great trade routes" was ignored by Yankee skippers and shipowners, who were waiting to hear of the offer of money (which really "talks") as stakes to back up wild statements of British superiority.

This explanation of the caliber of the Webb-built *Challenge* and the underlying facts in regard to the false British claims of "a match race for stakes between the *Challenger* and the *Challenge*" is given not apologetically but merely in an endeavor "to keep the record straight." Many fictitious accounts of races, and particularly tea races, between British and American clippers have been published in England, but few have been more imaginative or reeking in error than the British accounts of "the race for high stakes" between "Dicky" Green's *Challenger* and "America's finest and largest clipper"—the *Challenge*. As usual in all imaginary races of this nature, the British ship was declared the winner—in England. On many occasions, the press and enthusiastic British marine writers actually boasted of a British clipper's winning "a close and hard-fought race" from a Yankee clipper that, at the time, was proven to be thousands of miles from the scene of her claimed defeat. The British reports of the "race" between the *Challenger* and the *Challenge* are at least correct to the degree that each of these vessels was making the run from China to England loaded with tea at about the same time. This degree of accuracy, at any rate, should be appreciated; but even an unbiased British authority investigating the runs of the two vessels, after a perusal of the official logs with shore verification for the time of departure from China and Anjer and arrival in England, unhesitatingly ridicules the claim made by Green and the *Challenger* skipper that their vessel, "although a much smaller ship, beat the Yankee by a good two days." Incidentally, the much smaller British ship carried a much smaller paying cargo and showed decidedly less profit in operation per ton-mile and per ton-mile-hour (or day).

Authenticated records give the following results of a claimed race, of which the American "contestant" was in gross ignorance, as she sailed from China to London "in the regular order of business" seeking to make good time and carry her cargo safely to its destination. Incidentally, Capt. John Land, who had just made transpacific speed records in the *Challenge* both eastbound and westbound, had died suddenly in China, and the ship had no captain. First Mate Pitts of the *Witchcraft*, who knew but little about the China Sea, was temporarily put in charge to bring the clipper home. The *Challenge* had great need of Land's experience in the China Sea, and having bad luck, she made a slow run of 38 days from Whampoa to Anjer. The Britisher *Challenger* left from Shanghai, farther up the China coast, on July 27, 1852 (nine days before the American clipper cleared Whampoa), and under a captain who had invaluable experience in those waters and benefiting by a more favorable monsoon, the *Challenger*, with her smaller size and lighter draft, overcame the fluky handicap of distance and was reported as passing Anjer on September 4 after a run of

39 days from Shanghai. The *Challenge*, leaving Whampoa on August 5, 1852, was 38 days to Anjer, where she arrived September 12, and was detained until late the next day. Commencing her ocean passage on September 13, the American clipper made an all-time record run of 65 days from Anjer to London and only 39 days from the Cape. She arrived at Deal November 18 ahead of the British *Challenger*, which had left Anjer nine days before her, and, it was said, eclipsed "the runs of the British clippers *Chrysolite*, *Stornoway*, and *Challenger*." The record of the two clipper ships in this so-called "race" is as follows:

| | CHALLENGE (American Clipper) | CHALLENGER (British Clipper) |
|--|---------------------------------|--------------------------------------|
| Left Chinese port (origination of passage)..... | Whampoa, Aug. 5, 1852 | Shanghai, July 27, 1852 |
| At Anjer | Arrived Sept. 12, 1852 | Passed and reported Sept. 4, 1852 |
| | Sailed Sept. 13, 1852 | |
| Length of run to Anjer..... | 38 days | 39 days |
| Arrival at Deal (the end of the ocean course to London) .. | Nov. 18, 1852 | Nov. 19, 1852 |
| Length of ocean passage from Anjer to Deal..... | 65 days | 76 days |
| Time—Chinese port of origination to Deal..... | 105 days | 115 days |
| Sailing time—Chinese port of origination to Deal..... | 103 days | 115 days |
| Delay at mouth of Thames due to ship's draft and pilot... .. | 3 days | None |
| Arrival at London dock..... | Nov. 22, 1852 | Nov. 20, 1852 |
| Total time of passage: | | |
| Chinese port to London..... | 109 days | 116 days |
| Anjer to London..... | 69 days | 77 days |

The British *Challenger* was designed "to beat any Yankee clipper in speed," and it was said that the British pilots and tugboat masters gave her every advantage possible and "royal help" entering the Thames. The *Challenge* was held three days outside the river, and the detention was said to be due to tides and her deep draft, but Captain Pitts attributed the enforced delay to overcautiousness and "interested" British pilots, etc.

Another American clipper, the *Nightingale* of 1,066 tons (Captain Fiske), left Shanghai on July 31, 1852, four days after the *Challenger* and from the same port of departure, and there are authorities who quote records to prove that the *Nightingale* arrived at Deal one day before the British clipper, beating her five days on the passage.

The *Challenge*, which certain British interests claimed was defeated by the British *Challenger*, was thought so well of by competent naval authorities that she was put into the Blackwall dock and her lines taken off "so her model could be duplicated"—an honor not usually bestowed upon a vanquished foe. British merchants also evidently knew the difference between fact and fiction, for they bid energetically for a charter of a round voyage to China, and on the outward passage to Hong Kong the American *Challenge* again led the fleet. It would seem that later the British bought the *Challenge* and renamed her, and she lived to a ripe old age, being known in the seventies as a very fast ship. A Captain Wilson, of Sunderland, England, has written that he purchased the American clipper *Challenge* in 1866 and that she was then known as the *Golden City*. This was fourteen years after the famous reported tea "race." His experience with her indicates that she had "a world of speed," but was too much of a clipper to carry a good paying load (in post-clipper days) and needed careful handling.

Records have come to light which state that the *Challenge* was sold to the British in 1861 at the commencement of the Civil War; the clipper was renamed *Golden City*, and she was lost off the coast of France in 1876. It is somewhat confusing to note that there was an American clipper named *Golden City*, built by Westervelt, New York, in 1852, which was sold to the British in 1863 and was lost in the South Pacific on December 1, 1879. However, this latter ship, built one year after the *Challenge*, was of 810.5 tons register, which was only 40 per cent of the tonnage of the Webb-built *Challenge*. While the *Challenge* was under United States registry, she made some fine runs when properly manned and handled under conditions of wind and sea that suited her. She did have an impressive appearance and, for her size, was an unusually smart and yacht-like appearing

craft when operated under the American flag. However, the *Challenge* was one American clipper that no shipbuilder or shipowner in the United States could have been influenced to duplicate, even though Lubbock, the English historian, tells us that it was claimed that she logged 22 knots an hour when under the British flag and was "exceedingly fast." Although the *Challenge* is not rated as one of the great and successful United States clippers, the British never built a wood ship of her size that could compete with her, even if she was known as "the Griswolds' mistake" and the owners, like her builder and Capt. "Bob" Waterman, her first skipper, soon soured on her. Cutler says:

It is idle to assert that British-built ships in 1852, or indeed for many years later, were a match for the better type of American clippers, even though those ships were designed primarily for the very different conditions of the California trade. . . . The overwhelming superiority of the best

American clipper passages compared with a similar number of the best British clipper runs during the fifties furnishes a criterion that cannot be gainsaid. Nor did the British merchant of the day fail to recognize and admit the fact.

*False Publicity of Claimed Victories by the British of Their
Clippers over American Ships—the Challenges of Boston
Shipowners to Race for Stakes from an English to a
China Port and Back and Britain's Nonacceptance*

W. S. Lindsay, the British historian, in his HISTORY OF MERCHANT SHIPPING, gives the following account of one of the claimed early races between American and British clipper ships:

Mr. T. C. Cowper, of Aberdeen, himself a member of a well-known ship-building firm in Aberdeen, who has spent some time in China, . . . gives the following graphic description of his voyage home in the *Ganges*, Captain Deas, belonging to Leith, one of the vessels we had sent forth after the repeal of our Navigation Laws, to compete with the Americans in that trade: "We loaded," he says, "new teas at Wampoa, and sailed on the first of September, 1851. Two of the fastest American clippers, the *Flying Cloud* and *Bald Eagle*, sailed two or three days after us. A great deal of excitement existed in China about the race, the American ships being the favourites. The southwest monsoon being strong, the *Ganges* made a rather long passage to Anjer, but when we arrived there we found that neither of our rivals had been reported as having passed. We arrived in the

English Channel on the evening of the 16th of December. On the following morning at daylight we were off Portland, well inshore and under short sail, light winds from the northeast and weather rather thick. About 8 a.m. the wind freshened and the haze cleared away, which showed two large and lofty ships two or three miles to windward of us. They proved to be our American friends, having their Stars and Stripes flying for a pilot. Captain Deas at once gave orders to hoist his signals for a pilot also, and as, by this time, several cutters were standing out from Weymouth, the *Ganges* being farthest inshore got her pilot first on board. . . . She arrived off Dungeness six hours before the other two and was in the London docks twenty-four hours before the first, and thirty-six hours before the last of her opponents."

This is a typical British yarn of the period, extolling the quality of a British ship at a time that even British merchants in London, Liverpool, and China thought so little of British ships that they were paying American bottoms twice as much freight to carry such cargoes as tea, where speed was deemed of importance. This story is definite in regard to identity of ships, route, places, and dates, and, therefore, its falseness can be proved. At the time that the *Ganges* is claimed to have sailed fairly even with the big, new, and reputedly fast American clippers *Flying Cloud* and *Bald Eagle* over the 16,000-mile course from

"Wampoa" (Hong Kong), China, to Britain and beaten them both decisively in the English Channel (during the period September-December 1851), the *Flying Cloud* was on the opposite side of the globe, and the *Bald Eagle* was not even in the water. When it was claimed that the *Flying Cloud* sailed from Whampoa, China, during the first few days of September 1851, that ship was in San Francisco, Calif., having arrived there on August 31, 1851, at the completion of an 89-day 21½-hour record passage from New York westbound via Cape Horn. When the *Ganges* was supposedly outsailing the *Flying Cloud* in the English Channel, that American clipper was lying at anchor in Hong Kong Harbor, where she arrived from San Francisco on December 5, 1851, and she did not sail until January 6, 1852, at which time, presumably, the *Ganges* had unloaded her tea at the London dock; moreover, when the *Flying Cloud* did clear the China port, she sailed to New York (making a good run of 94 days) and not to London or any other British port. The *Bald Eagle*, which the *Ganges* is claimed also to have shown up badly in September-December 1851 and outsailed in the English Channel during the third week of December, was not built or even designed at that time. This ship was not launched until November 1852, about a year after the time she is said to have been racing the *Ganges* with China tea bound for London. The *Bald Eagle* left New York on her maiden voyage on December 26, 1852, destined for San Francisco, and this ship evidently did not appear at any port of Great Britain until December 1859 (eight years after she was supposed to be in the English Channel with the *Flying Cloud* and *Ganges*), when she appeared at Liverpool with a cargo from Woosung, China.

T. C. Cowper, of Aberdeen, and Captain Deas of the British ship *Ganges*, who originated and spread this yarn to the detriment of two great and speedy American clipper ships and deceived historian W. S. Lindsay, have not even an excuse of mistaken identity to explain their false statements, which must be classed as imaginative and sheer prevarication. Such Britishers connected with ships and the sea could be expected to know American ships, and supposedly they lay in Hong Kong Harbor or at Whampoa with the *Flying Cloud* and *Bald Eagle* before sailing and at London docks during the period of unloading teas. That they could not have seen two other American clippers that they thought were these two famous McKay ships, which were of 1,782 and 1,705 tons, respectively, is proven by the fact that only a single American clipper bound with tea for Britain was at Whampoa from mid-August to late September 1851. That was the *White Squall* of only 1,119 tons, a much smaller ship than the big McKay vessels. Moreover, the only American clipper that sailed from Hong Kong, Whampoa, Canton, or that region in China for England, other than the *White Squall*, between July 28 and October 13, 1851, was the *Memnon* of 1,068 tons, and she, sailing on August 16 (twenty-three days before the *White Squall*), was lost in Gaspar Straits on September 14, 1851. That the *Ganges* did not see the *Memnon* in the English Channel is evident, and that she never saw two American clippers of any size engaged in the British China tea run off the English coast is proven, for they positively were not there. The *Ganges*, moreover, had no chance of being taken seriously if she claimed sailing honors in any contest with the *White Squall*; for on the September-December 1851 passage from Whampoa to London, that American clipper made the fastest 1851 run of any tea clipper engaged in the British China tea trade, and she could sail rings around the *Ganges*.

On January 3, 1852, the ILLUSTRATED LONDON NEWS published a picture of the British clipper *Chrysolite* accompanying an article in which it was stated that both the *Chrysolite* and another British clipper, the *Stornoway*, had beaten the fast American clippers *Oriental* and *Surprise* and, furthermore, that the *Chrysolite* had recently given a whipping to the American clipper *Memnon* during a race in the Gaspar Straits. This article provoked comment in the United States, and its falseness did not "sit well" with many Bostonians, with the result that several young merchants and shipowners of Boston organized what became known as the American Navigation Club, consisting of Daniel C. Bacon,

president; Thomas H. Perkins, John P. Cushing, William H. Bordman, John M. Forbes, Warren Delano, and Edward King. In due time, the newly formed club issued the following challenge, which was published in all the leading shipping papers and sporting publications of Britain in September 1852:

The American Navigation Club challenges the ship-builders of Great Britain to a ship-race, with cargo on board, from a port in England to a port in China and back. One ship to be entered by each party, and to be named within a week of the start. These ships to be modeled, commanded, and officered entirely by citizens of the United States and Great Britain, respectively. To be entitled to rank A-I either in the American offices or at Lloyd's. The stakes to be £10,000 a side, satisfactorily secured by both parties, to be paid without regard to accidents, or to any exceptions, the whole amount

forfeited by either party not appearing. Judges to be mutually chosen. Reasonable time to be given after notice of acceptance to build the ships if required, and also for discharging and loading cargo in China. The challenged party may name the size of the ships, not under 800 nor over 1,200 American registered tons; the weight and measurement which shall be carried each way; the allowance for short weight or over-size. Reference may be made to Messrs. Baring Bros. & Co. for further particulars.

Daniel C. Bacon, President

A few weeks later, the following comment appeared in *BELL'S LIFE*, a noted British sporting publication:

It will be remembered early in the past month there was wafted across the broad Atlantic from the American Navigation Club a challenge to the ship-builders of Great Britain which created no little interest. . . . The Club by the last clause of their terms held themselves at liberty to withdraw the challenge should it not be accepted within thirty days. The limit of the time is now expiring and it is with no little disappointment that a letter received from the head of the eminent banking house of Baring & Co. was received in Boston a short time since, when it was found that he had nothing like an acceptance of the challenge to communicate to the American Club, but that, on the contrary, he had to report no inquiry as to the proposition. As a sort of enticement, however, to our ship-builders, the President of the American

Navigation Club, Mr. D. C. Bacon, is authorized, should the present challenge not be accepted within thirty days, to allow the British vessels a start of fourteen days before the departure of the American craft. And also to allow us a crew picked from seamen experienced in voyaging between English and Chinese ports, while their own crew is to be composed of American seamen and officers whose experience is limited in sailing between China and English ports. The Americans, under the new conditions, are willing to augment the stake to £20,000, or any higher sum than the £10,000 of the present conditions most agreeable to us, but the last amount to be the minimum. The Americans want a match, and it reflects somewhat upon our chivalry not to accommodate them.

About this time, the London *DAILY NEWS* also published an editorial in which it urged the importance to Great Britain of making good its claim to maritime supremacy by accepting the challenge and winning the race; but in spite of all that was done and said, the American challenge to the British was never accepted, and not even a nibble was made at it.

While the challenge of the American Navigation Club, of Boston, was under discussion, what the British maritime interests called a "race" was taking place in a homeward run to England with tea from China that was being shipped in three American and three British clipper ships. Unfortunately, the tea was not being shipped from the same Chinese port; neither were the ships sailing either from the port of departure or from Anjer and the Sunda Straits at the same time. It is also well to bear in mind that whereas the three British clipper ships engaged in the tea run were designed solely for the China trade, not one of the three American ships had been built for that run or with the British China tea trade in mind. What the British chose to call the "contesting clipper ships," following the arrival of the first of the sextet in England (which happened to be a British ship), were the Aberdeen-built *Chrysolite* and *Stormoway*, the Blackwall (London)-built *Challenger*, and the American-built *Surprise*, *Challenge*, and *Nightingale*. (This omits the fuller-bodied Boston-built *Race Horse*, which sailed from China to Liverpool about the same time.) As British ships were reported as arriving first at an English port, the press, contented to inquire no further in regard to this claimed "race," became jubilant in victory, and there was great gratification because the British had "decisively beaten their Yankee friends."

Later, however, when the facts in regard to these competitive passages commenced to become known, the crowing and boasting moderated, but never completely ceased, even though a fairer-minded British marine analyst admitted that the six vessels in the "race" made passages as follows:

| Name of Clipper | Nationality | Course | Passage in Days | Name of Clipper | Nationality | Course | Passage in Days |
|-----------------|-------------|---------------------|-----------------|-----------------|-------------|------------------|-----------------|
| CHALLENGE | U.S.A. | Canton to Deal | 105 | STORNOWAY | British | Canton to Deal | 109 |
| SURPRISE | U.S.A. | Canton to Deal | 106 | NIGHTINGALE | U.S.A. | Shanghai to Deal | 110 |
| CHRYSOLITE | British | Canton to Liverpool | 106 | CHALLENGER | British | Shanghai to Deal | 115 |

An analysis of the logs resulted in an admission that the British ships had been favored in the China Seas, but all the three American clippers had outsailed the British in the open ocean and "sea run from Java Head to the [English] Channel."

As a result of the so-called "races" in the British China tea trade in 1852 and the statements made by British owners, builders, captains, marine "authorities," and the press in general during 1851 and 1852, the firm of Sampson & Tappan, of Boston, offered to match its clipper *Nightingale* for £10,000 against any ship (and in this it included any American ship as well as any British ship), the race to be from an English port to China and back. Messrs. Sampson and Tappan were not members of the American Navigation Club, and it is said that whereas their offer of a wager was made primarily with the owners of British clippers in mind, they would be quite willing to take on any New York-built and owned clippers, which were making good records in the China trade, but which they felt were inferior to their own fast ship, the *Nightingale*.

A British historian, writing of the challenge of the American Navigation Club presented to "the ship-builders of Great Britain" for a race between a British and an American ship then built or to be built "from a port in England to a port in China and back," says:

The challenge was for a race between any specified British and American ship with cargo on board from England to China and back, the ships to be respectively British and American modelled, officered and manned. Stakes were to be £10,000 a side, and the challenged party had the right to specify the size of the ships, not under 800 and not over 1,200 tons.

Weeks passed without any indication of the challenge being taken up, although our press here published leading articles and other urgent exhortations that British owners and builders should

make every effort to enter and win the race.

The American Club extended their offer to allow the British ship a clear fourteen days' start and to increase the stake to £20,000. Still the challenge remained unanswered and this, not only at that time but ever since, has been regarded as an unsporting and even cowardly shirking of the issue by British owners and builders. There has never been, so far as I know, any attempt made to explain, much less justify, the British refusal of the challenge.

It is then suggested that it was the limitation of size (i.e., "not under 800 and not over 1,200 tons") that was the stumbling block, for no British clipper was as large as that; whereas it was said that the tonnage restrictions "admitted almost every one of the proved fastest and best of the American cracks." We also read that when the challenge was made, the United States had about thirty clippers to choose from for the race and the British not a single one. However, the British historian continues:

It is true that the challenge would have permitted the building of a new ship on either side or both, and it may be asked why the British did not set about building one within the stipulated tonnage.

The answer is that up to then the British had no knowledge or experience of building or sailing

big clippers and no inducement to do so; whereas the Americans, as I have shown in the figures quoted, had specialised in the big, powerful, and enormously sparred type.

The reason for this divergence in type is simply that owners built to suit their trade. The American's first incentive to build big fast ships was the

California run round the Horn to the gold diggings, a trade so profitable that new ships, built regardless of expense, often earned their first building cost and running expenses and then paid a profit on their first voyage.

On the other hand, we are told, the British felt that ships suitable for their China trade should be small and that such would have a great advantage in the length of a China passage as compared with bigger and heavier ships. Before the pioneer British tea clippers were built (*Stornoway* of 506 tons in 1850, *Chrysolite* of 471 tons in 1851, and *Challenger* of 699 tons in 1852), the fastest passages in the China-to-England tea trade were being made by such ships as the *Reindeer* of 328 tons, *Countess of Seafield* of 450 tons, and *John Bunyan* of 470 tons. However, Americans had demonstrated that 800-, 1,000-, and 1,200-ton clippers and larger were well adapted to and were good money-makers in the China trade; moreover, Britain was calling for big, fast ships for its Indian trade and for still larger ships for its Australian colonial trade. All American clippers, however, were not big ships as claimed by the British, and a majority of them, built in 1850-1852, were not of from 800 to 1,200 tons register, as the following statistics of clippers and reputed clippers built in the United States during each of the three years 1850, 1851, and 1852 clearly prove:

| Registered Tonnage | Number of Clippers Built | | | Total for Three Years 1850-1852 Inclusive |
|------------------------------------|--------------------------|------|------|--|
| | 1850 | 1851 | 1852 | |
| 500 tons and less..... | 5 | 2 | 6 | 13 |
| Over 500 and under 800 tons..... | 9 | 17 | 20 | 46 |
| Over 800 and under 1,200 tons..... | 3 | 14 | 31 | 48 |
| Over 1,200 tons..... | 7 | 21 | 18 | 46 |
| Total clippers | 24 | 54 | 75 | 153 |

Even though the British did not accept the challenge of the American Navigation Club, either as originally made or as later extended and modified, there were China tea clippers of over 800 tons (British measurement) built in Britain in the fifties, as the following records show:

| Name of Clipper | Tonnage | Year Built | Name of Clipper | Tonnage | Year Built |
|-------------------|---------|------------|-------------------|---------|------------|
| CAIRNGORM | 938 | 1853 | SPIRIT OF THE AGE | 878 | 1854 |
| NORTHFLEET | 896 | 1853 | ROBIN HOOD | 852 | 1856 |
| CREST OF THE WAVE | 924 | 1853 | LAMMERMUIR | 952 | 1856 |

When the owners of the *Nightingale* (Sampson & Tappan, Boston) issued their sweeping challenge in December 1852, they specified no conditional limitations as to size, but agreed to match their clipper against any ship in a race to China and back for stakes of £10,000 a side. The British historian who has sought to excuse British shipowners and shipbuilders for not accepting the challenge of the American Navigation Club has said:

It must in all fairness be admitted that another American challenge was never taken up, although it seemed to have no such restricting clause as that other about tonnage. . . . It does seem a pity that this frank fair-and-square challenge was not taken up; but if there is any shame attached to such an ignoring of the challenge it must be shared equally between British and other American owners.

This is unwarranted hedging, for the Americans, disgusted with false British publicity in regard to the sailing ability of their tea clippers, were banded together as a unit to coax the British into a race, and this for the honor of the Stars and Stripes. In 1852, Americans were too busy operating their ships and making money to upset their schedules and go through all the time, trouble, and expense of a matched race merely for the glory

of a house flag and the winning purse. Their urging of the British to enter a match race was solely to put a stop to false statements and senseless propaganda and prove the superiority of American ships and seamanship over those of the British, and this in the greatest possible and most conspicuous way.

Early British Clippers, 1850-1853

Britain's first two real clippers, admittedly copied after the Americans but built, nevertheless, in full accord with British tradition as to size and proportions for the China trade, were the *Stornoway* and *Chrysolite* of 506 tons and 471 tons, respectively. Each was constructed of wood by Hall, of Aberdeen, the former in 1850 for Jardine, Matheson & Company and the latter in 1851 for Taylor & Potter. In 1852 the third British clipper, the *Challenger*, was built by Richard ("Dicky") Green of the famous Blackwall Line, who announced at a public dinner: "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 failed to carry out his pledge and did not live up to his boast of building "as big and as fine a China tea clipper as the Yankees" and one that "will beat the best the Yankees have now afloat or are building." His highly advertised clipper, the *Challenger*, while more American in size than her predecessor British clippers, was of only 699 tons; but in 1853, Hall, of Aberdeen, came boldly forward and built the size and type of ship that Green had said that he was going to construct. With the building of the *Cairngorm* in 1853, Hall broke away from British tradition and turned out a well-proportioned and relatively large ship instead of the usual small and too narrow model that lacked stability and power. The *Cairngorm* was one of the best of all British clippers, and she was constructed for Jardine, Matheson & Company, owners of the *Stornoway*, Britain's pioneer clipper, launched some two and a half years before her. The *Cairngorm* was a British-built *Oriental*, copied from the American clipper almost exactly as to lines and dimensions, length and beam, but given a trifle less depth, draft, and freeboard. She was the first sizable British clipper and the first sailing ship built in Britain that could compete with American ships.

A comparison of the dimensions of the *Cairngorm* and the *Oriental*, with corresponding particulars of the pioneer British clippers *Stornoway* and *Chrysolite*, "Dicky" Green's *Challenger*, and of Britain's first iron China tea clipper, *Lord of the Isles*, also added, is of interest:

| Name of Clipper Ship | Year Built | Tonnage | Dimensions in Feet and Inches | | | Built of | Builder | Owner |
|----------------------|------------|---------|-------------------------------|------|-------|-------------------|----------------------|----------------------------|
| | | | Length | Beam | Depth | | | |
| ORIENTAL | 1849 | 1,003 | 185-0 | 36-0 | 21-0 | Wood | Jacob Bell, New York | A. A. Low & Bro., New York |
| CAIRNGORM | 1853 | 938 | 185-0 | 36-6 | 20-0 | Wood (iron beams) | Hall, Aberdeen | Jardine, Matheson |
| STORNOWAY | 1850 | 506 | 157-8 | 28-8 | 17-8 | Wood | Hall, Aberdeen | Jardine, Matheson |
| CHRYSOLITE | 1851 | 471 | 149-3 | 26-1 | 17-0 | Wood | Hall, Aberdeen | Taylor & Potter |
| CHALLENGER | 1852 | 699 | 174-0 | 32-0 | 20-0 | Wood | Green, London | Lindsay (Blackwall) |
| LORD OF THE ISLES | 1853 | 770 | 190-9 | 27-8 | 18-5 | Iron | Scott, Greenock | Martin |

The *Cairngorm* is of particular interest, as her construction was the first pronounced step toward the development of the "composite" type. Whereas she had a wood frame, planking, and certain hold beams, she was built with iron main, or weather, deck beams and some iron hold beams, and this both to give desired strength and to add to the net space available for the storage of cargo. Lubbock says: "The *Cairngorm* has been given the credit [by British historians] of being the first British clipper which really could rival, if not excel, the wonderful American ships." Such a statement would seem to admit that the British claims of the superiority of the *Challenger*, *Chrysolite*, and *Stornoway*, persisted in for years, were idle boasts, foolish and thoroughly unwarranted, and sheer propaganda in the interest of national morale and egoism. The first year that the *Cairngorm* took tea from China to London, she was apparently beaten by the small and older Baltimore clipper *Architect* (of 520 tons; built in 1847-1848), which, although for sale and not considered very highly, nevertheless, with a run to London (the Downs) from Whampoa of 107 days, "arrived ahead of all the British ships and was able to command £2 per ton extra freight on her tea passage the following season." In 1857 both the little American bark *Maury* and the barkentine *Fairy* gave the fast British clipper ship *Cairngorm* a good trouncing notwithstanding that the vessels sailed close together and the American passages originated at Foochow and not (as did the passage of the *Cairngorm*) at the nearer port of Hong Kong. Moreover, in this race, which commenced in China (July 3-10) and ended at London (October 17-November 1), the British contestant was surprisingly the largest vessel of the racing trio, having a registered tonnage (British measurement) of 938 tons, with the added advantage of being full ship-rigged (and carrying a big crew of able seamen); whereas the American contestants were only of 600 and 629 tons, respectively, and had economy rigs (one a bark and the other a barkentine), with relatively small crews.

The year 1853 was of great historical importance in the development of shipbuilding in Britain. During that year, the *Lord of the Isles*, the first real iron clipper, was built by Scott, of Greenock, on the River Clyde in Scotland, professedly "to beat all Yankee boats in speed, strength and stowage." Not only did iron as a material for construction most definitely enter the picture with respect to the building of sailing ships but also the Clyde entered directly into competition with Aberdeen as a shipbuilding center for the production of "quality" tonnage in the realm of sail. The *Lord of the Isles* (770 tons) was abominably proportioned, being extremely narrow with a ratio of length to beam of 6.9 to 1, which can be compared with a ratio of 5.1 to 1 for the *Oriental* and the *Cairngorm*. She was nicknamed "the Diving Bell," as, according to Maxton, her captain, "She dived in on one side of the sea and out at the other." The ship was fast and tender and was destroyed by fire when bound for Hong Kong on July 24, 1862. This was a shock to owners, builders, and underwriters, for one of the great arguments used by British advocates of iron ships was that such construction would guard against loss by fire, "which is destroying so many wooden ships, particularly the softwood American vessels."

It is also significant that iron ships were never popular, deemed satisfactory, or considered successful in the tea trade. It was said that tea did not carry as well in iron as in wood or composite ships, and the depreciation in quality in tea carried from three to four months in an iron ship was generally stated to be pronounced and "proven by experience to be in no sense imaginary." Again, on long runs in the tropics, the bottoms of iron vessels fouled rapidly, which impeded their speed. A frequent dry-docking was necessary to keep up the speed performance of all iron ships, and from the fifties to seventies such facilities were not generally available in foreign ports. British tea clipper owners and captains generally affirmed in the late fifties that iron ships could never equal the speeds of the wooden ships in light winds or on long voyages.

*American Clipper Ships Built in 1850 Intended for the China and
East Indian—the Cape of Good Hope—Trade*

In addition to a couple of medium-sized Baltimore clippers built for fast trading on the Seven Seas (the *Seaman* of 546 tons and *Sea Nymph* of 526 tons) and a few small ships of clipper type that probably would have been placed in the China trade if it had not been for the California Gold Rush (which developed strongly in 1850), the following clipper ships were built in 1850, which, from the first, were intended for the China, East Indian, or Indian—Cape of Good Hope—trade, but some of them, such as the *Surprise*, were designed along compromise lines "to do well in any trade over a term of years."

| Name of Clipper | Tonnage | Dimensions in Feet | | | Builder | Owner |
|--------------------|---------|--------------------|------|-------|------------------------------------|---------------------------------------|
| | | Length | Beam | Depth | | |
| RACE HORSE | 530 | 125 | 30 | 16 | Samuel Hall, East Boston, Mass. | I. Goddard & Co., Boston, Mass. |
| ROMAN | 775 | 152.6 | 33.3 | 16.5 | George Raynes, Portsmouth, N.H. | Taylor & Olyphant, New York |
| MANDARIN | 776 | 151.6 | 33.6 | 19.3 | Smith & Dimon, New York | Goodhue & Co., New York |
| CELESTIAL | 860 | 158 | 34 | 19 | William H. Webb, New York | Bucklin & Crane, New York |
| WHITE SQUALL | 1,119 | 190 | 35 | 21 | Jacob Bell, New York | William Platt & Sons, Philadelphia |
| SURPRISE | 1,261 | 183.3 | 38.8 | 22 | Samuel Hall, East Boston, Mass. | A. A. Low & Bro., New York |

The *Roman* was the fourth American vessel to sail from China in the British tea trade, and she was reported as leaving Whampoa September 11 and Macao September 13, 1850, a little over two weeks after the *Jennette*, *Oriental*, and *Argonaut* had sailed. Whereas British records for the passage of the historic *Oriental* are accurate, those of the *Argonaut* and the *Roman* are erroneous. The *Argonaut*, with a passage of 107 days (not 143 days as some British records show), made the second best run of the American ships, and she beat by a substantial margin the best of the British ships engaged in the run at about the same time. Captain Putnam, however, in the rather full-modeled *Roman*, did some splendid sailing in his New Hampshire-built Canton trader. Beating down the China Sea against a southwest monsoon, the *Roman* was at Anjer October 8, 25 days out of Macao, and during the next week covered 1,758 miles—an average of 251 miles per day. The Scilly Isles were said to have been made "75 days from Anjer and 100 days from Canton," which, if correct, was marvelous sailing, but other reports say that "the Scilly Lights were made on December 26," which would make the time 79 days after the ship's reported arrival at Anjer. It was, nevertheless, a fast passage, and although the next year the *Roman* did not make as fast a run in the British tea trade, she made good enough time to beat the Aberdeen clipper *Reindeer* by eight days on the passage from Woosung (Shanghai) to the London unloading dock. The American ship delivered her second load of tea at London in the calendar year of 1851. The *Roman* (like the *Race Horse*) made only one westward Cape Horn passage to San Francisco, and her run (December 18, 1852-April 17, 1853), which was 120 days from clearance to entry, was reported as 115 days.

The *Mandarin* was designed and built by Smith & Dimon, New York, producers of the *Rainbow* and the *Sea Witch*, but she was not modeled after either of her predecessors, as she embodied more of the characteristics of the North Atlantic packet as exemplified in her

flat floor, tremendous forward flare, and convex water lines in her entrance. She was more of a finer-lined Black Ball liner *Yorkshire* than a China clipper packet in fundamentals of model; yet she was described as "a perfect little gem." During her career of fourteen years, she fully lived up to the expectations of her builders, who, in discussing her before she was launched on June 15, 1850, said: "The *Mandarin*, as her name suggests, is a China packet, but whether she is a clipper or not, time will tell. She has not been designed solely for the oriental trade, for times are changing and this little ship should do well on any trade route of the world [California, Australia, North Atlantic, etc.], and when wind and sea suit her she should sail fast." In other words, the *Mandarin* was not built for "ghosting along" in the tropics, and the prime features of design were diametrically opposite to those used by the British in the production of their China tea clippers and to those demanded of W. H. Webb by Robert L. Taylor when the sleek, exceedingly sharp *Gazelle*, with her great deadrise and weak midship section, was built and launched about seven months after what might be called Smith & Dimon's fast and seaworthy "compromise and general service" ship. It was felt by the marine fraternity that the *Mandarin*, for a small ship, would do well on the California run; yet her maiden passage of 126 days from New York to San Francisco was considered slow and disappointing, as Webb's new *Celestial*, sailing nine days before the *Mandarin*, went out in only 105 days. Evidently, the two ships did not experience the same conditions of wind and sea. On her second Cape Horn passage, the *Mandarin* did some fast sailing, and although the passage was rated at 115 days, the ship was off the entrance of the Golden Gate when 110 days out from New York. On her third and last Cape Horn run to California, the little *Mandarin* proved her mettle. She left New York August 11, 1853, six hours behind the extreme clipper *Hurricane* (1,608 tons) and arrived at San Francisco December 11, one full day ahead of her big and speedy antagonist.

The *Mandarin* made two voyages from United States ports to Australia, and on the second of them, leaving New York December 21, 1855, she made the all-time record passage between any eastern American port to Melbourne, making the run in the phenomenal time of 70 days, following which she made a passage from Melbourne to Hong Kong in record time.

Notwithstanding three California and two Australia voyages, the *Mandarin* was engaged primarily in the China trade and was an outstanding China packet that did not have her passages "spotted" for her, but made them without regard to monsoon seasons. It is said that of her ten homeward passages, only one was made leaving the Chinese coast during the season of the northeast monsoon, and on that run of 100 days from Shanghai to New York (where she arrived April 14, 1858) Captain Perit reported much light weather, the steady trades expected at that season being "conspicuous by their absence." The *Mandarin's* best homeward passage was in 1853. Leaving Woosung February 19 when the season was getting poor, she was at Anjer in 16 days and reached New York in 89 days from Woosung, 73 days from Anjer, and 30 days from St. Helena. Capt. Robert Bennet Forbes, of Boston, one of the greatest authorities on the China trade, considers this run of the *Mandarin* as probably the best ever made over that course by any ship in the history of sail, considering the season of the year. On her long passage of 118 days from Foochow to New York, she was 41 days beating against the monsoon down the China Sea, following which she made a splendid run of 77 days under ordinary sailing conditions from Anjer home. Outbound to China, the *Mandarin* made a passage in 95 days and several around the century mark, but all were performed in the unfavorable season and to ports well up the coast. On August 9, 1864, when bound to New York, the *Mandarin* struck an uncharted reef in the China Sea in 12 ft. of water and was lost, the passengers, officers, and crew being saved; also a part of the cargo, which was taken to Batavia by steamer.

It has been said that the *Celestial* of 860 tons was the first clipper to be built for the California trade; but whereas her owner, Bucklin & Crane, of New York, decided as she

approached completion to send her around the Horn, yet she was designed and built by Webb, of New York, for the China trade. The ship was launched on June 10, 1850, and the New York HERALD, in the issue of the day before (June 9), said:

The *Celestial* has been built for Messrs. Bucklin & Crane and is intended for a Canton trader, under the command of Captain Gardner. . . . The model of this craft differs somewhat from the ordinary wedge bottom clippers built for the same trade, and it is thought, by competent judges, to be superior, by enabling the vessel to keep up on the water, preserving a buoyancy which is very desirable and very rarely met with in this class of vessels.

This description indicates that Webb, in modeling the *Celestial*, was following a generally similar line of thought to that which actuated Smith & Dimon when designing the *Mandarin*. The *Celestial*, during her first four voyages and the first five years of her career, followed the usual around-the-world westward course of the clippers, taking cargo out around the Horn to San Francisco, crossing the Pacific in ballast, and bringing a cargo home from a Chinese port (later sometimes from Manila or an East Indian or even an Indian port). She made her first Cape Horn westbound passages in a reported 105 days and 108 days from New York to San Francisco, which was excellent time for a 860-ton ship; her last two California runs in 120 days and 130 days, respectively, were ordinary performances. Voyage No. 5 was in the New York-Australia trade, and she made a good passage out in 85 days, went to Hong Kong, and then made her fifth homeward passage with a run from China to New York, arriving August 27, 1856. Of these five passages from the Orient to North Atlantic ports, four were from Shanghai to New York and one (in 1853) from Foochow to London in the British China tea trade. This run of the *Celestial* in the British tea trade was an excellent one and the best passage of any ship made over that route around that time. On her maiden voyage, the *Celestial* (Capt. B. G. Palmer) cleared San Francisco March 6, 1852, and is credited with a run of 33 days to Hong Kong, a record at the time and within a few hours of the all-time record. She then went up the coast and made a passage of 117 days from Shanghai to New York. On her second voyage, the last leg was a slow British China tea passage from Shanghai to Liverpool, where she was reported arriving on September 22, 1852, 137 days out (another record says 115 days from Foochow). On the last leg of her third voyage, the *Celestial* carried tea from Foochow to London and evidently made the fastest passage in the British China tea trade for the year. The British records say that she "arrived at London January 31, 1854, 96 days out," but there is also a document stating that the ship was at Foochow on November 4, 1853, which, if correct, would make her passage time not more than 88 days—which seems "too good to be true." The last leg of the next two voyages of the *Celestial* (her fourth and fifth) were from Shanghai to New York, and the ship experienced very bad luck in an "against the monsoon" season and was 142 days and 127 days, respectively, making the passages. In 1855 she was 51 days beating down the China Sea and thence 81 days from Anjer home; in 1856 she was 44 days and 83 days, respectively. The sixth and last voyage of the *Celestial* under the American flag did not commence auspiciously, for it required nearly 150 days for the ship to reach Shanghai from New York. This was followed by a British tea passage from Foochow to London, where she arrived January 11, 1858, with a length of run reported as 98 days; also as 137 days. Shortly thereafter, the ship was sold to the Spaniards. While under the American flag, the *Celestial* had earned the reputation of being "a very fast ship whose luck turned sour," for during her last years of service she was extremely unfortunate in the sailing conditions encountered, particularly when operating in the China trade.

The *White Squall*, built by Jacob Bell, successor to Brown & Bell, New York, was supposed to follow the design, model, rig, and general characteristics of the *Samuel Russell* and *Oriental*. It is apparent, however, that Bell gave his new ship more deadrise and sharper lines than her successful predecessors, and he claimed for her improvements that would make her "an ideal China clipper packet." When she was laid down, the Canton trade was pre-eminently in mind, but in July 1850 her owners decided to put her in the California run. She sailed

September 5 from New York on her maiden voyage bound to San Francisco and thence west to China and "around the world" home by way of London, with a try at the British China tea trade. The *White Squall* had trouble with her spars in the North Atlantic, and having lost all three topgallant masts, she put into Rio de Janeiro to refit. The ship reached San Francisco on January 8, 1851, 125 days from clearance at New York, and Captain Lockwood reported the passage as 118 sailing days, 73 days from Rio, and 39 days from Lat. 50° S. Pacific, which is about record time. Crossing the Pacific from San Francisco to Hong Kong in the fast time of 38 days and 22 hours, the *White Squall* attracted much attention in that British settlement, as the following digest from the columns of the Hong Kong REGISTER reveals:

The new American clipper ship *White Squall*, Captain Lockwood, anchored in our harbor on Saturday evening after a passage of 39 days from San Francisco. We believe she is the longest and the sharpest ship of the new class that has yet been launched. She is a beautiful specimen of naval architecture. The extreme symmetry of her masts

and spars conceals the appearance of her great length. . . . Her speed is most extraordinary—15 knots being registered in the log. . . . We confess we cannot look upon such ships as the *White Squall* without a feeling of apprehension for our carrying trade.

Leaving Whampoa September 8, 1851, under Captain Goodwin (Captain Lockwood having died), the *White Squall* ran into a vicious typhoon, was at anchor two days off Anjer, and lost the main-topmast off Madagascar; but, nevertheless, she made the best run of 1851 in the China British tea trade, as she arrived at the Isle of Wight on December 16 and London (Deal) on December 18 after a passage of 101 days elapsed time or 99 sailing days (97 days to Isle of Wight). Captain Goodwin wrote from London: "Our teas are discharged in fine order, which fact and our general appearance 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." On her second voyage, the *White Squall* was at San Francisco on July 29, 1852, 110 days from New York, and crossing to China went from Whampoa to New York in 103 days (79 days from Anjer). She then made a complete California voyage, 117 days out from Philadelphia and 97 days return to New York, where misfortune overcame her. On the night of December 26, 1853, she was burned in the conflagration that partially destroyed the *Great Republic*; being sold as she lay burned to the water's edge, for \$5,500, the *White Squall* was raised and rebuilt as a one-decked barkentine of 896 tons, but her glory was gone forever.

The *Surprise* of 1,262 tons, designed by Samuel Harte Pook, of Boston, Mass., when he was only twenty-three years of age, and built in 1850 by Samuel Hall, of East Boston, for A. A. Low & Bro., New York, was one of the most profitable and, in every way, successful clippers ever built. When she was towed to New York by Boston's historic iron screw tugboat, the *R. B. Forbes*, she was pronounced the most beautiful ship ever seen in the ports of either Boston or New York. The *Surprise* was built primarily for the China trade, but she was ordered designed to be "big and able enough for a Cape Horner." Because of the activity of California business, she was "put up" for San Francisco on her maiden voyage, sailed from New York on December 13, 1850, under the command of Capt. Philip Dumaresq, and promptly proved her quality by lowering the record to 96 days and 15 hours from Sandy Hook to anchorage off Clark's Point, San Francisco Bay. The *Surprise* crossed the Pacific to Hong Kong in 46 days and took a load of tea from Whampoa to London in 107 days, anchorage to dock. The fast Yankee clipper received £6 per ton for carrying tea to the English market, which was double the amount paid to British vessels. Notwithstanding that she had to cross the Pacific in ballast, upon her arrival in London the freight receipts of the *Surprise* had entirely paid her prime cost and running expenses besides netting her owners a profit of about \$50,000. The combination of boom prices on cargoes for California during the height of the Gold Rush and the premium paid for speed in China tea deliveries in London proved amazingly profitable, for a short time, to the owners of sizable, fast American clippers.

The second voyage of the *Surprise* was in the British China trade, with Capt. Charles A. Ranlett in charge. She went out from London to Hong Kong under bad sailing conditions in 123 days and returned to London (Deal) with tea in 106 days (July 19-November 2, 1852) and was at the dock in London when 107 days out. The third and fourth voyages of the *Surprise* were in the California trade. In 1853 she ran out from New York to San Francisco in 116 days, and in 1854 she took 118 days, the average for her three westward Cape Horn California passages being 110 days. The *Surprise* had the reputation of being a very fast ship and a consistent performer. Most historians say that the vessel made eleven consecutive tea passages from China to New York in 89 days or less, six from Hong Kong and five from Shanghai, the best being an 81-day passage from Shanghai in 1857. Such a reported and generally accepted performance, however, was beyond the realm of possibility, for any vessel, because of the variability of sailing conditions. The *Surprise* (Captain Ranlett) sailed from Shanghai January 1, 1857, and reached New York on March 24, completing a splendid passage of 82 days, which was one day longer than the all-time record run of the *Swordfish* between the ports in the winter of 1859-1860 and a few hours shorter than the fast 83-day passage of the *N. B. Palmer* (October 1858-January 1859), reported as 82 days. The fast 1857 passage of the *Surprise*, when made, was declared by Capt. Charles A. Ranlett to be "the shortest passage ever made between Shanghai and New York," and according to the official detailed log, it was a most interesting one, as it showed no burst of great speed but amazing uniformity of good mileage per day, with favorable winds and no protracted periods of calms, light or baffling winds. On only eight days of the 82-day voyage did the mileage fall below 100, and two of these were on the North Atlantic at the end of the voyage, March 22 and 23, when the distance traversed was 98 and 92 miles, respectively, in a heavy gale. On the six other low-run days, when the mileage was 80 on January 15, 41 on January 20, 83 on February 2, 76 on February 13, 82 on February 21, and 86 on March 18, they were sandwiched between days of good mileage. Throughout the voyage, with the exception of the two days in a gale off the Jersey coast while approaching New York, the vessel did not experience two or more consecutive days of calm, light winds or definitely adverse sailing conditions. Of the eight "poor distance days," four were due to too much wind and only four to calms and light airs. On the other hand, the *Surprise* had no spectacular or even outstanding high day's runs. The maximum distance traversed in one day was 296 nautical miles on February 15, which gave an average speed of 12.3 knots per hour for twenty-four hours, and this was not fast sailing for a clipper. Her next best day's run was 276 miles on March 14 in the North Atlantic, but this day was one of four (March 11-15) when she covered 1,091 miles—an average of $272\frac{3}{4}$ miles per day and a speed of 11.36 knots per hour for four days.

The entire voyage showed, according to the log, a distance covered of 15,399 nautical miles, an average day's run of 187.8 miles, and an average speed of 7.82 knots per hour. During the first seven days out, she covered 1,641 miles at an average speed of 9.8 knots per hour, and for the first eight days of the voyage (January 2-9) the mileage traversed was 1,843, an average of $230\frac{1}{2}$ miles per day and a speed of 9.6 knots per hour. On January 22-23, the *Surprise* made 507 miles in forty-eight hours, an average speed of $10\frac{1}{2}$ knots per hour, and during January 22-February 1 she covered 2,311 miles in eleven consecutive days of fair sailing, averaging 210 miles per day and $8\frac{3}{4}$ knots per hour. During the last three days of this period, in a good blow she traveled 731 miles (an average of 243.7 miles per day and 10.2 knots per hour), and when the gale of February 1-2 was over, she covered 1,306 miles in the six days of February 3-8 (an average of 217.7 miles per day and 9.1 knots per hour). During four days of this period, February 3-8, she made 946 miles—an average of 236.5 miles per day and 9.85 knots per hour. A week later, the *Surprise* did some more fair sailing under good conditions of wind and sea. On February 15, she had her best day's run for the voyage of 296 miles; on the 15th and 16th she covered 538 miles, an average of 269 miles per day and 11.2 knots per hour. On the three days February 15-17, she ran 778

miles at a speed of 10.8 knots per hour, and for six days (February 15-20) she traversed 1,306 miles, an average of 217.7 miles per day and 9.1 knots per hour. From March 2 to 16, the *Surprise* did some very fine and steady sailing, as she covered 3,615 miles in fifteen consecutive days, averaging 241 miles per day and over 10 knots per hour. In thirteen of these days (March 2-14), she covered 3,164 miles at a speed of 10.14 knots per hour, and in seven days (March 8-14) the ship sailed 1,867 miles, with an average day's run of 266.7 miles and an average speed of 11.1 knots per hour.

An analysis of the official log, which was well kept with complete recorded data permitting verification, gives the following interesting statistics of this voyage of uniform good sailing under very favorable maintained conditions:

SURPRISE—Shanghai to New York—January 1-March 25, 1857, Traveling Westward

| Speed in Knots per Hour | Nautical Miles per Day | No. of Days in Speed and Day's Run Range | Percentage of Days in Stated Speed Group to Total Days Sailed during Voyage | Speed in Knots per Hour | Nautical Miles per Day | No. of Days in Speed and Day's Run Range | Percentage of Days in Stated Speed Group to Total Days Sailed during Voyage |
|---------------------------|-----------------------------|--|---|---------------------------|------------------------------|--|---|
| <i>Under</i> 2 | <i>Under</i> 48 | 2 | 2.44 | <i>Under</i> 4 | <i>Under</i> 96 | 8 | 9.76 |
| <i>Between</i> 2 and 3 | <i>Between</i> 49 and 72 | 0 | — | <i>Between</i> 4 and 6 | <i>Between</i> 97 and 144 | 10 | 12.20 |
| 3 " 4 | 73 " 96 | 6 | 7.32 | 6 " 8 | 145 " 192 | 24 | 29.26 |
| 4 " 5 | 97 " 120 | 5 | 6.10 | 8 " 10 | 193 " 240 | 22 | 26.83 |
| 5 " 6 | 121 " 144 | 5 | 6.10 | 10 " 12 | 241 " 288 | 17 | 20.73 |
| 6 " 7 | 145 " 168 | 12 | 14.63 | <i>Over</i> 12 | <i>Over</i> 288 | 1 | 1.22 |
| 7 " 8 | 169 " 192 | 12 | 14.63 | | Total | 82 | 100.00 |
| 8 " 9 | 193 " 216 | 9 | 10.98 | <i>Under</i> 4 | <i>Under</i> 96 | 8 | 9.76 |
| 9 " 10 | 217 " 240 | 13 | 15.85 | <i>Between</i> 4 and 8 | <i>Between</i> 97 and 192 | 34 | 41.46 |
| 10 " 11 | 241 " 264 | 10 | 12.19 | 8 " 12 | 193 " 288 | 39 | 47.56 |
| 11 " 12 | 265 " 288 | 7 | 8.54 | <i>Over</i> 12 | <i>Over</i> 288 | 1 | 1.22 |
| <i>Over</i> 12 | <i>Over</i> 288 | 1 | 1.22 | | Total | 82 | 100.00 |
| | Total | 82 | 100.00 | | | | |

Average speed for passage of 1,981 sailing hours, 7.81 knots per hour.

Maximum day's run, 296 miles (12½ knots per hour); minimum day's run, 33 miles (1½ knots per hour).

Total mileage recorded by log for 82 full days' sailing, 15,470 nautical miles.

Best four consecutive days' sailing (March 11-14 inclusive), 1,097 miles—an average of 274 miles per day and 11.4 knots per hour.

Best eight consecutive days' sailing (March 8-15 inclusive), 2,119 miles—an average of 265 miles per day and 11 knots per hour.

Percentage of day's runs under 4 knots per hour speed—9.76; over 4 knots per hour speed—90.24.

" " " " " 6 " " " " —21.96; " 6 " " " " —78.04.

" " " " " 8 " " " " —51.22; " 8 " " " " —48.78.

" " " " " 10 " " " " —78.05; " 10 " " " " —21.95.

" " " " " 12 " " " " —98.78; " 12 " " " " —1.22.

It is interesting to note that when the *Surprise* made this fine run home from China in 82 days, the *Oneida* (420 tons), built in 1832 and with a good reputation as a "reliably fast China packet," sailed from Shanghai five days after the *Surprise* and took 116 days to reach New York.

A résumé of the homeward passages of the *Surprise* from Asiatic ports between 1851 and 1866 shows six runs made under all conditions of the monsoons varying from 82 to 104 days from Shanghai, which is splendid sailing; only one passage exceeded 100 days. There is a 93-day run from Woosung to New York, an 86-day passage from Hong Kong, a 91-day run from Amoy, a 96-day passage from Foochow, and one of 89 days from Batavia. Her

average run from Anjer home was 80 days, with 70 days the shortest and 93 days the longest. In 1851 the *Surprise* passed Anjer 81 days from London and in 1865, 82 days from New York. This fine clipper continued in service for over twenty-five years and on her last passage (New York to Yokohama) did some fast sailing, covering 315 miles in one day and beating every ship that she sighted going the same way. She took a Japanese pilot aboard off Yeddo Bay on February 3, 1876, and while under his care was piled up on the Plymouth Rocks and became a total loss.

*American Clipper Ships Built in 1851 of Size and Type
Deemed Suitable for the China Trade*

Although most of the clipper ships built in the United States in 1850 and practically all in 1851 and during the next few years were laid down with the California Cape Horn trade in mind, there were five clipper ships launched in 1851 that for size and type are definitely associated with the requirements of the China trade. These vessels, all quite different one from the other, four of which were built in New York and one in New Hampshire, were as follows:

| Name of Clipper | Launched 1851 | Tonnage | Dimensions in Feet | | | Builder | Owner |
|-----------------|---------------|---------|--------------------|------|-------|---|--------------------------------|
| | | | Length | Beam | Depth | | |
| INO | Jan. 4 | 895 | 160.5 | 35 | 17.5 | Perrine, Patterson & Stack, New York | Siffkin & Ironsides, New York |
| GAZELLE | Jan. 21 | 1,244 | 182 | 38 | 21 | William H. Webb, New York | Taylor & Merrill, New York |
| N. B. PALMER | Feb. 5 | 1,399½ | 202.5 | 38.5 | 22 | Westervelt & Mackey, New York | A. A. Low & Bro., New York |
| NIGHTINGALE | June 16 | 1,066 | 185 | 36 | 20 | Samuel Hanscomb, Jr., Portsmouth, N. H. | Sampson & Tappan, Boston |
| SWORDFISH | Sept. 20 | 1,036 | 169.5 | 36.5 | 20 | William H. Webb, New York | Barclay & Livingston, New York |

The *Ino* was built for a fast China packet or East Indiaman, but like all vessels constructed in the United States in the early fifties, she was first placed in the Cape Horn California trade. That the *Ino* had a sharp model is proven by the fact that her builders rather boasted of the fact that she would carry only 700 tons deadweight and less than 80 per cent of her registered tonnage, and in the local contemporary press we read under the caption, "New Clipper Ship *Ino*":

Her capacity for stowage is estimated at from 6,800 to 7,000 barrels only; whereas many vessels of the same tonnage (879 tons customhouse) will carry from 11,000 to 12,000—her stowage capacity being thus much reduced to increase her sailing powers. Under full sail, she will spread no less than 9,491-1/3 square yards of canvas. Her model is faultless, strength of hull not having, in any particular, been lost sight of in the determination to make her a fast-going vessel. In both these qualities she will bear a strict comparison with any vessel afloat.

The *Ino* made three Cape Horn California voyages, only the second being in good time, and then she arrived out at San Francisco July 12, 1852, 116 days from New York, but 111 sailing days, as five days had been spent at Rio de Janeiro undergoing repairs. The extreme clipper continued her voyages westward around the world, but her sailing did not come up to her owner's original expectations, and she had three different captains on her first three voyages. On her maiden voyage, the *Ino* went from San Francisco to Singapore in 57 days and was 89 days from there to New York and 77 days from Java Head. On her second voyage, she went from San Francisco to Manila in 60 days, thence to Singapore, and from there 90 days to New York. On her third voyage, she was 49 days from San Francisco to Manila and 108 days thence to New York, where she arrived April 4, 1854, having circumnavigated the globe sailing westward three times in 3 years and 23 days.

The *Ino* did some excellent sailing at times, but made few very fast completed passages. Leaving New York December 11, 1857, she ran out to Anjer in 71 days, but did not reach Singapore, her destination, until she was 91 days out. In the winter of 1858-1859, she made her best completed passage of 91 days from Woosung (November 21, 1858) to New York (Sandy Hook pilot, February 19, 1859). During this passage, she was detained in the Straits, but ran from Java Head to the Cape of Good Hope in the record time of 26 days, then went from the Cape to the Atlantic equator in 23 days, and from Java Head to Sandy Hook pilot in the splendid time of only 67 days. It was reported that if allowance was made for detention in the Straits of Sunda, this passage would have been "88 days from Woosung to anchorage; 85 days to pilot." The *Ino* was well modeled and sparred (although too large) for an illegitimate trading armed merchantman (such as an opium runner) or for a privateer, and during the Civil War she was a United States cruiser and made a fine record as a fast handy war vessel mounting eight 32-pounders.

The *Gazelle* was another clipper in which the owners insisted that "everything be sacrificed for speed," but Robert L. Taylor of Taylor & Merrill, New York, the owners, made himself obnoxious with William H. Webb, his builder, by insisting on features being incorporated into the vessel that Webb could not approve, and the ship's performance at sea turned out much as her builder had predicted. The *Gazelle* had too much deadrise and too weak a midship section for a merchantman in any trade, although she showed fine speed in tropical runs in light airs. It was said of her that, like most other ships with a V-bottom, she was very fast in moderate weather, but was no match for the flat-floored clippers when it came on to blow. Cutler says:

Most of the vessels which made notable records on the Canton run were of this V-bottom sort—an almost invariable feature of the British tea ships twenty years later. . . . In light, leading airs Webb's sharp-bottomed *Gazelle* could have sailed

all around the *Sovereign of the Seas*, while in heavy following gales the relatively flat-floored *Sovereign* would have travelled three feet to the *Gazelle's* two, and carried sail long after the *Gazelle* was stripped to bare poles.

James Gordon Bennett liked the looks of the *Gazelle* when he inspected her at Peck Slip prior to loading freight "for California and China," and he wrote for the *HERALD* on January 30, 1851:

We have seen many of this kind of vessels lately and all of the first class; but we have never met with one that came nearer to our idea of a skimmer of the wave than does the *Gazelle*. She was constructed upon the same principle as the far-famed *Celestial*, . . . but is much sharper—everything, excepting the due and proper regard for strength, being made secondary to speed. . . . The *Gazelle* has a deadrise of forty inches—nearly

as much as any ship ever built—with very fine lines below; which gives her the power of sailing very fast in light winds, at the same time that her great breadth at deep-load line, carried well forward and aft, combined with her deep keel, will enable her to carry a very great press of canvas in strong winds, at the same time keeping her well above water, and preventing her pitching deep in heavy weather, and enabling her to scud at all times.

On her maiden passage, the *Gazelle* sailed from New York for San Francisco on March 4 bound around the world westward via Cape Horn and the Cape of Good Hope. The *Ino*

sailed shortly after her, and both extremely sharp clippers made poor runs to the Golden City, reported as 134 and 133 days, respectively. The second Cape Horn passage of the *Gazelle* was even a day longer, but her third and fourth (and last) runs to San Francisco were made in better time. Across the Pacific and on the passages from China home to New York, the *Gazelle* sailed fast and consistently as the following record shows:

| Voyage No. | Sailing from New York | Number of Sailing Days | | | | |
|------------|-----------------------|---------------------------|---|-----------------------|---|-----------------------------|
| | | New York to San Francisco | San Francisco to Hong Kong | Hong Kong to New York | San Francisco to New York via Hong Kong | New York—Return to New York |
| 1 | Mar. 5, 1851 | 134 | 44 | 98 | 142 | 276 |
| 2 | May 18, 1852 | 135* | 39 | 99 | 138 | 273 |
| 3 | June 9, 1853 | 119 | 43 | 91 | 134 | 253 |
| 4 | June 3, 1854 | 114 | Was 35 days out from San Francisco and about 1,500 miles east of Hong Kong (her destination) when dismasted and badly damaged by a typhoon on Nov. 19, 1854. Towed into Hong Kong a complete wreck on Dec. 4, 1854. | | | |

*When 53 days out, in collision with Spanish ship off Cape Horn. Lost all head gear and developed bad leak forward.

The average length of the three consecutive passages made by the *Gazelle*—96 days—from Hong Kong to New York indicates consistently fast sailing, as do the average of the three transpacific runs from San Francisco to Hong Kong of 42 days and an average of 138 days spent at sea on the return portion via China to New York on the three voyages made to California. The *Gazelle*, when struck by the typhoon on November 19, 1854 (in Lat. 21° N., Long. 141° E.), was thrown on her beam ends, the mainmast broken off at deck, and foremast and bowsprit carried away. The ship was lacking in initial stability to carry her spars, and when she righted herself she had ten feet of water in her hold, and 16 out of 189 Chinese passengers aboard were drowned. At Hong Kong, the ship was condemned, sold for \$13,500, then repaired and placed under Peruvian and later British registry.

Another famous American clipper that was very successful and popular in the China tea trade was the *N. B. Palmer* of 1,399½ tons. This ship was known in China as "the yacht" because of her smart appearance, trimness, and general beauty. A model of her exhibited at the Crystal Palace Exposition in London in 1851 attracted a great deal of favorable attention and comment, and it has been said that the *N. B. Palmer* was for many long years the most famous of all American clipper ships in China waters. On the occasion of the celebration of Queen Victoria's birthday at Hong Kong in 1863 (during the turmoil of the Civil War), the *N. B. Palmer* was singled out for honor. She was acknowledged to be "the gem of the harbor," gaily decorated with flags, and in the evening illuminated with Chinese lanterns. The captain of the *N. B. Palmer*, Charles Porter Low, was a rich man and younger brother of the owners. Besides being a navigator of outstanding ability, he was personally popular with fellow masters and the people ashore. His wife made her home with him upon the ship, and the fact that they entertained often and well and kept their vessel "in apple-pie order" undoubtedly contributed to the great reputation that the ship enjoyed in the Far East, which, nevertheless, continued in the late fifties and through the sixties.

After three voyages in the California trade, the *N. B. Palmer* operated steadily for many years in the China trade, for which she was built. She was a fast, dependable sailer, and during her long sea life of forty-one years, of which twenty-two were under the American flag, she did some brilliant sailing and made runs in or near record time. Woosung is about 850 miles up the China coast from Hong Kong, and this distance, which was often covered

in four or five days during the favorable monsoon, might occupy several weeks of sailing against the monsoon. In 1851 the *N. B. Palmer* went from Shanghai to anchorage in Hong Kong in 75 hours, having logged 846 miles and shown an average speed for the entire run of 11.3 miles per hour. In 1868 and again in 1872, the "*Palmer*" is credited with runs of 72 hours from Woosung to Pedro Blanco, where she hove to in order to hand letters to a Hong Kong pilot.

On May 26, 1852, the fourth day out from New York on her second Cape Horn passage to San Francisco, the "*Palmer*" covered 396 miles, which would seem to be a record day's run (of less than twenty-four hours and traveling east) for a vessel designed and built for the Chinese trade and not for the California or Australian run. On July 14, 1854, the *N. B. Palmer* (Captain Low) arrived at New York in 82 days from Honolulu, equaling, if not slightly beating, the highly publicized 82-day passage of the McKay clipper *Sovereign of the Seas* (2,421 tons) made in the spring of 1853. On this record run, the "*Palmer*," sailing from Honolulu on April 23, 1854, crossed the Pacific equator on the 6th day, passed the Horn 38 days out, and was at the Atlantic equator on the 57th day; if she had not been delayed by light winds and calms in the North Atlantic and the ship had had ordinary luck, she would have made a passage of some 77 or 78 days.

In 1856, on a passage from New York to Hong Kong, the "*Palmer*" averaged 335 nautical miles for four consecutive days and covered 3,456 miles in twelve days—an average of 288 miles per day and over 12 knots per hour. The *N. B. Palmer* (Captain Higham) sailed from Shanghai on October 25, 1858, and arrived at New York on January 16, 1859, after a passage of 82 days, generally reported as a record run, although it would seem that this fine passage was one day longer than the all-time record run between the ports established by the *Swordfish* (Captain Crocker) when she arrived at New York March 2, 1860, 81 days from Shanghai, and it was virtually equal to the reported 82-day passage of the *Surprise* (Captain Ranlett), which reached New York March 24, 1857, from Shanghai. During the fast 82-day passage of the *N. B. Palmer* to New York from Shanghai, the Low clipper is credited with a record run from the longitude of the Cape of Good Hope (December 11, 1859) to New York, which distance she covered in only 36 days (also reported as 35 days); the run from Anjer was made in 64 days, or within two days of the record. The outward passage of this voyage was made in 1858 by the "*Palmer*" in 88 days to Hong Kong, so the complete voyage in the New York-China trade (out to Hong Kong and return from Shanghai) was made in only 170 days—an average length of passage of 85 days each way. In 1852 the *N. B. Palmer* made a very fast passage of 84 days from Macao (Hong Kong) to anchorage at New York, and in 1854 she went from San Francisco to Honolulu in 10 days, averaging over 200 nautical miles a day.

In 1852 the *N. B. Palmer*, when 15 days out from New York bound for San Francisco, came up with the *Gazelle*, which had sailed four days before her. (Low, in his *REMINISCENCES*, says that the *Gazelle* had actually departed "six days before him," but the clearance dates are May 18 and 22, respectively.) In May 1868, when 14 days out from New York bound for Hong Kong, the "*Palmer*" came up with the *Game Cock*, which had left New York five days before her. In 1852 the *Flying Cloud* passed out from Sandy Hook on May 14 and the *N. B. Palmer* on May 22, each bound for San Francisco; on July 1, in Lat. 32° S., the "*Palmer*" overhauled the "*Cloud*," having covered in 41 days the distance that the "Greyhound of the Seas" and the "Queen of all Cape Horners" had required 49 days to traverse. On their maiden voyages in 1851, the *N. B. Palmer*, sailing from New York on May 6, had run out to San Francisco in 106 days; whereas the *Flying Cloud*, sailing from the same port on June 2, had made a brilliant 90-day passage. An analysis of the two runs, giving the time of each vessel sailing over each of the five prime sections of the course, is as follows (the length of the passage of the *N. B. Palmer* here stated as 107 days being the total elapsed time from clearance to entry):

| Course | Time in Days | |
|--|----------------------|-----------------------------------|
| | N. B. PALMER | FLYING CLOUD |
| New York to Atlantic equator..... | 23 | 21 |
| Atlantic equator to Lat. 50° S. Atlantic..... | 25 | 26 |
| Total—New York to Lat. 50° S. Atlantic..... | 48 | 47 |
| Lat. 50° S. Atlantic to 50° S. Pacific (rounding Cape Horn)..... | 18* | 7 |
| New York to Lat. 50° S. Pacific..... | 66 | 54 |
| Lat. 50° S. Pacific to Pacific equator..... | 22 | 17 |
| Atlantic equator to Pacific equator..... | 88 | 71 |
| Pacific equator to San Francisco..... | 19 | 19 |
| Lat. 50° S. Pacific to San Francisco..... | 41 | 36 |
| Time in Northern Hemisphere..... | 42 | 41 |
| Time north of Lat. 50° S. | 89 | 83 |
| New York to San Francisco..... | 107 | 90 |
| | (reported as 106) | (reported as 89 days 21½ hrs.) |

*The great gain enjoyed by the FLYING CLOUD in comparing her passage with that of the N. B. PALMER was the eleven days' advantage obtained by the big McKay clipper in rounding the Horn. The "CLOUD" experienced phenomenally favorable sailing conditions, making the run from 50° to 50° in only 7 days (the record up to that time); whereas the "PALMER," which sailed twenty-seven days before the "CLOUD," encountered the usual Cape Horn westerly gales and high seas and failed to experience over most of the course the unusually favorable sailing conditions that the "lucky FLYING CLOUD" encountered.

From San Francisco to China and from there home, the *N. B. Palmer* turned the tables on the *Flying Cloud* and proved that she was a better and faster vessel in the China trade than was the big McKay clipper. The fastest passages of the *N. B. Palmer* outbound from New York to China were 88 days to Hong Kong in 1858, 90 days in 1868, 93 days in 1870, and 93 days to Shanghai in 1869; 97 days to Hong Kong in 1861 and 100 days to that port in each of 1859 and 1860. Her performance on the passages out from New York to Hong Kong in four consecutive voyages made during the years 1858-1861 is noteworthy. The runs varied from a minimum of 88 days to a maximum of 100 days, and the average of the four passages was 96 days, which was very fast and uniform sailing, considering the length of time and the conditions encountered. From China home, in addition to the claimed record run of 82 days from Shanghai to New York in 1858-1859, the "*Palmer*" ran from Macao home in 84 days in 1852, 92 days from Hong Kong in 1865, 99 days from Manila in 1855, and 100 days from Hong Kong in 1857-1858. The *N. B. Palmer* did some remarkably uniform sailing both ways in the U.S.A.-China trade. When she arrived at New York on January 15, 1861, in 108 days from Macao, it was the fourth year in succession that she had reached New York from China between noon of January 15 and noon of January 16. Again in 1868, 1869, and 1870, the *N. B. Palmer* ran from New York to a China port (twice to Hong Kong and once to Shanghai) in passages of from 90 to 93 days.

There was always a great deal of jealousy between the *Samuel Russell* of 957 tons, built in 1847, and the *N. B. Palmer* of 1,399 tons, built in 1850-1851 for the same owners. For the China trade, Capt. Nathaniel B. Palmer favored the *Samuel Russell* (which he had designed) and not the ship named after him, maintaining that the *N. B. Palmer* was a little large and too much of a general trade clipper to show up as well as the *Samuel Russell* in the direct China trade. On April 27, 1853, the *N. B. Palmer*, the *Samuel Russell*, the extreme clipper ship *Wild Pigeon* of 996 tons (built in 1851), the clipper bark *Comet* of 536 tons (built in 1852), and the McKay pre-clipper fast packet ship *Joshua Bates* of 620 tons (built in 1844) were all in the China trade and together at Anjer bound for New York and Boston, and a race was on. The *Samuel Russell* made the shortest passage of the five vessels under generally unfavorable sailing conditions that affected all. She arrived at Sandy Hook on July 26, two days ahead of the *N. B. Palmer* and the *Wild Pigeon*, which pair reached New York in company after racing practically neck and neck for some 12,000 miles. The *Comet* arrived at Boston a day after the "*Palmer*" and "*Pigeon*" reached New York, and the *Joshua Bates* reached port four days after the *Comet*, five days after the *N. B. Palmer* and *Wild Pigeon*, and seven days after the *Samuel Russell*.

In February 1873, A. A. Low & Bro. sold the *N. B. Palmer*, and Capt. Charles P. Low, still in command, then retired from the sea. The "*Palmer*" engaged in transatlantic case oil trade for years, but when she was abandoned in the North Atlantic on January 10, 1892, she had been operating "cheaply" under the Norwegian flag for many years.

The *Nightingale* was designed and built as a fast public yacht or cruise ship. The Boston and New York papers advertised her contemplated first voyage as a "Grand Trans-Atlantic excursion to the World's Fair" at London, but by the time the ship was launched on June 16, 1851, both the builders and the reputed owners were in financial difficulties. After controversies, suits, and liens, the ship was sold at public auction in Boston on September 6, 1851, and finally became the property of Sampson & Tappan, Boston, owners of the clippers *Stag Hound* (1,534 tons) and *Flying Fish*, built by Donald McKay, East Boston, in 1850 and 1851, respectively.

The *Nightingale*, during her eventful career of forty-two years, sailed on every ocean and was admired for her beauty and speed. Her first Boston owners, although they first sent her out to Australia, declared that she would prove to be an "ideal China clipper," as she was "the proper size and of a most suitable model"; they, therefore, routed her back home by way of Canton. The *Nightingale*, on her maiden voyage, ran from Boston to Sydney in 90 days; thence to Canton and up the China coast to Shanghai, where she loaded a cargo of tea for London. Sailing against heavy head monsoons down the China Sea, the ship was 61 days from Shanghai (July 31, 1852) to Anjer (September 30), but when she got clear of the Sunda Straits and had a chance, she did some good sailing and ran in 72 days to the London docks, where she arrived December 11, 1852. On this passage from Anjer to London, she not only beat all the three new British clippers, *Stornoway*, *Chrysolite*, and *Challenger*, but also the American clipper *Surprise*, but was in turn beaten by the American clipper *Challenge*, although she ran from the Cape of Good Hope to Deal in 39 days. After this voyage, Capt. John H. Fiske resigned his command and was replaced by Capt. Samuel W. Mather, and her owners issued a challenge to race the *Nightingale* against any ship from London to China and back for £10,000 sterling, but there was no response. On her second voyage, which was to China and return to London, the *Nightingale* went out to Shanghai in 112 days. Howe and Matthews say that she was 80 days to Anjer, "beating everything but the American *Challenge*," which had 78 days to Anjer. British records, however, show that the *Nightingale* sailed from Portsmouth on February 10, 1853, and passed Anjer April 23, when 72 days out, which was said at the time to be the fastest run made. The *Nightingale* left Woosung August 8, 1853, was 34 days to Anjer (September 11), and was at London (Deal) November 28, 78 days later, making the completed run in 112 days and beating the British *Challenger* by two days; also her rival, the American *Challenge*, as that clipper was unfortunate and had to put into Fayal for repairs and to discharge her damaged cargo.

After crossing the Atlantic from London to Boston, the *Nightingale* went to New York chartered by R. W. Cameron & Company's Australian "Pioneer Line." She went out to Melbourne (Hobson's Bay) in 75 days, running from the Atlantic equator in 46 days and covering 365 nautical miles in one day (a speed of 15½ knots per hour). From Melbourne, the ship went to Canton in ballast and took a load of sugar, miscellaneous freight, and some passengers from Whampoa to Shanghai. From Shanghai, the *Nightingale* went to London with a cargo of tea, and whereas available records all indicate that she made the fastest run of the year, the dates and length of passage are conflicting. Captain Mather said that she made a passage of 91 days and was but 70 days from Batavia Roads, but some British records state that she left Shanghai February 8, 1855, was at Anjer March 5, at Beachy Head May 18, and at the London dock May 21. This would make the completed passage, anchorage to London dock, 102 days; Shanghai to Beachy Head, 99 days; and Anjer to Beachy Head, 74 days. In 1856 the *Nightingale* is credited with a fast run of 88 days from Shanghai to New York.

In 1860 the *Nightingale* was sold to unknown parties, and in April 1861 she was captured as a slaver off the African coast and later acquired by the U.S. Government and fitted out as a cruiser for service during the Civil War. During the last years of her life, she was a Norwegian bark engaged in the North Atlantic lumber trade and was abandoned at sea on April 17, 1893, when about forty-two years old, bound from Liverpool to Halifax.

The *Swordfish*, built by W. H. Webb, New York, to the order of Barclay & Livingston (and sold in 1854 to Crocker & Warren, New York), was launched September 20, 1851. She was a handsome, rakish, fast vessel designed for the Chinese and East Indian trade, for which her size of 1,036 tons well fitted her. Whereas not modeled for a Cape Horn, the *Swordfish*, like almost all the new clippers of her period, was sent out to China westward via the Horn and California on several voyages and on her maiden passage made a phenomenal run of 90 days 18 hours from New York to San Francisco (where she arrived February 10, 1852), beating in a race by nine and a half days the larger, fast McKay clipper *Flying Fish*, which also made a fine passage of 100 days 6 hours. Continuing her splendid sailing with Capt. D. S. Babcock in command, the *Swordfish*, after a transpacific run of 46 days from San Francisco to China and the diversion of a round side voyage between Hong Kong and Bombay, sailed from Whampoa September 25, 1852, against the monsoon and arrived at New York in 89 days (70 days from Anjer). A voyage of 226 days at sea on the three courses (New York to San Francisco; thence to Hong Kong and the final lap to New York) established a record. Her best day's run was 340 miles, and she logged 15 knots per hour at times.

On her second voyage, the *Swordfish* (Capt. Charles Collins) sailed on February 12, 1853, in company with the extreme clipper *Sea Serpent* of 1,402 tons and, making a good run of 107 days, beat her opponent by two days on the Cape Horn passage to San Francisco. Crossing the Pacific to China, the *Swordfish* made a record run of 32 days and 9 hours from dropping her pilot off the Golden Gate (June 16, 1853) to anchorage off Shanghai (July 19). The distance traveled on this transpacific passage was 7,200 miles; average per day, 225 miles; best day's run, 340 miles. From Shanghai, she went down the coast to Hong Kong, loaded at Whampoa, and sailed for New York October 15, 1853, where she arrived in 97 days notwithstanding experiencing a bad typhoon in the China Sea which caused the loss of some spars and sails.

The third voyage of the *Swordfish* was another circumnavigation of the globe sailing west, but this time, although she visited Hong Kong, she had to go to Manila to get a cargo for home. Under Capt. H. N. Osgood, the ship made a good Cape Horn passage and arrived at San Francisco on July 23, 1854, 110 days from New York. She crossed the Pacific to Hong Kong in 42 days, went thence to the Philippines, and was 102 days from Manila home. On this voyage, the *Swordfish* logged 39,977 miles and averaged 153 miles per day for the 261 days spent at sea. Notwithstanding the splendid sailing of the *Swordfish* on the Seven Seas and her fine record on her first three westward roundings of Cape Horn (her average length of these passages being only 102½ days), it was evident that the clipper, under certain conditions of sailing, was a very wet boat forward when driven hard.

On May 7, 1856, the *Swordfish* commenced her fourth voyage (around the world sailing west) under Captain Crocker—her fourth different commander. The floating tonnage in both the California and China trade was too large for the freights available, so the clipper took a cargo to Panama, crossed the Pacific, and finally reached New York April 29, 1857, in 101 days from Manila. The boom days were over, ships' spars were cut down, sail spread and the number of the crew reduced, and "economy became the word." Voyage No. 5 was the first passage of the *Swordfish* with an eastbound as well as a westbound rounding of the Cape of Good Hope and her first passage from New York to China direct. Under Captain Osgood, she went out to Hong Kong from New York in 102 days and returned home in 107 days from Manila. Her next voyage (1858-1859) was the first spent entirely in the China trade; she went out to Hong Kong in 98 days and returned to New

York from Shanghai in 104 days. In 1859 she again sailed to Shanghai, and running her easting down, she encountered a succession of westerly gales and, being overloaded, took a great deal of water aboard. It is said that at one time the vessel "scudded under bare poles at the rate of 14 knots," everything aboard was soaked, and the crew, suffering great hardship, grew rebellious and deserted the ship en masse as soon as she reached port. On the return passage to New York with a new crew "of sorts," the *Swordfish* did her best sailing and established an all-time record. Leaving Shanghai December 12, 1859, she ran to Anjer in 10 days (December 22), was 30½ days thence to the Cape of Good Hope, 24½ days later crossed the Atlantic equator, and ran from there to New York in 16 days, completing the passage on March 2, 1860, in 81 days from Shanghai, 71 days from Anjer, and 40½ days from the Cape of Good Hope. This fast record passage, made when the *Swordfish* was approaching ten years of age, with a makeshift crew and reduced sail spread, was a marvelous performance, especially when it is noted that the ship was becalmed in the Atlantic for five days. It is also of interest to observe that the only two fast clipper ship passages between Shanghai and New York (or other East Coast U.S. ports) that at any time have challenged the record of the *Swordfish* were made after the clipper ship boom commenced to wane following the mid-fifties; the 82-day passage of the *N. B. Palmer* was made in October 1858-January 1859 and that of the *Surprise* (also 82 days) in January-March 1857. Other previous fast passages were the 85-day run of the *Panama* (October 27, 1854-January 20, 1855) and the 84-day passage of the *Eagle Wing*, which left Woosung November 23, 1855, and reached New York February 15, 1856.

On the next voyage of the *Swordfish*, under Captain Crandall, she arrived at New York March 18, 1861, after a run of 102 days from Shanghai. In the winter, she made a splendid run of 36½ days from Hong Kong to San Francisco, and on July 9, 1862, she stranded in the Yangtze River and became a total loss.

Comparison of the Size of American and British Clippers

The following table gives a comparison of the dimensions of the early American clippers built prior to the close of 1851 that participated to some degree in the British China tea trade and greatly influenced the design and construction of the early British clippers. The performance and experience gained from the operation in service of these ships in the trade later inspired and dictated the model lines, rig, and driving—but not the dimensions and proportions—of the famous yacht-like British China tea clippers, which have been rightly described as "speed machines."

| Name of Clipper, Year Built, and Tonnage | Builder | Owner | Dimensions in Feet | | | Ratio | | | Remarks |
|--|-------------------------------|-------------------------------------|-----------------------|------|-------|----------------------|-----------------------|---------------------|---|
| | | | Length | Beam | Depth | Length to Beam | Length to Depth | Beam to Depth | |
| HOUQUA (1844; 583 tons) | Brown & Bell, New York | A. A. Low & Bro., New York | 142.3 | 29.8 | 16.7 | 4.8 | 8.5 | 1.8 | Built as a China clipper. Lost late 1864. |
| RAINBOW (1844-1845; 752 or 757 tons) | Smith & Dimon, New York | Howland & Aspinwall, New York | 159 | 31.8 | 18.3 | 5.0 | 8.7 | 1.7 | Built as sharp China clipper. Lost 1848. |
| SEA WITCH (1846; 908 tons) | Smith & Dimon, New York | Howland & Aspinwall, New York | 170.3 | 33.9 | 19 | 5.0 | 9.0 | 1.8 | Built as China clipper—an improved RAINBOW. Wrecked 1856. |

(Continued on next page)

| Name of Clipper, Year Built, and Tonnage | Builder | Owner | Dimensions in Feet | | | Ratio | | | Remarks |
|--|--|---|-----------------------|------|-------|----------------------|-----------------------|---------------------|--|
| | | | Length | Beam | Depth | Length to Beam | Length to Depth | Beam to Depth | |
| | | | | | | | | | |
| MEMNON (1847; 1,068 tons) | Smith & Dimon, New York | F. A. Delano, New York | 170 | 36 | 22 | 4.7 | 7.7 | 1.6 | Built as China clipper. Wrecked in China Sea, 1851. |
| SAMUEL RUSSELL (1847; 957 tons) | Brown & Bell, New York | A. A. Low & Bro., New York | 173.5 | 34.5 | 19.9 | 5.0 | 8.7 | 1.7 | Built as China clipper. Wrecked in China Sea, 1870. |
| ORIENTAL (1849; 1,003 tons) | Jacob Bell, New York | A. A. Low & Bro., New York | 185 | 36 | 21 | 5.1 | 8.8 | 1.7 | Built as China clipper. Wrecked in River Min, China, 1854. |
| MANDARIN (1850; 776 tons) | Smith & Dimon, New York | Goodhue & Co., New York | 151.5 | 33.5 | 19.3 | 4.5 | 7.8 | 1.7 | A California and China clipper. Wrecked China Seas, 1864. |
| CELESTIAL (1850; 860 tons) | William H. Webb, New York | Bucklin & Crane, New York | 158 | 34.5 | 19 | 4.6 | 8.3 | 1.8 | A California and China clipper. Sold to Spaniards, 1858. |
| SURPRISE (1850; 1,261 tons) | Samuel Hall, East Boston | A. A. Low & Bro., New York | 183.3 | 38.7 | 22 | 4.7 | 8.3 | 1.7 | A general trading and China clipper. Wrecked Japan, 1876. |
| STAG HOUND (1850; 1,534 tons) | Donald McKay, East Boston | Upton and Sampson & Tappan, Boston | 215 | 39.7 | 21 | 5.4 | 10.2 | 1.9 | A California and China clipper. Burned off Pernambuco, 1861. |
| SEA SERPENT (1850; 1,402 or 1,337 tons) | George Raynes, Portsmouth, N. H. | Grinnell, Minturn & Co., New York | 194.5 | 39.3 | 20.7 | 4.9 | 9.4 | 1.9 | A California and general trading clipper. Sold in 1874 to Norwegians. |
| WHITE SQUALL (1850; 1,119 tons) | Jacob Bell, New York | William Platt & Sons, Philadelphia | 190 | 35.5 | 21 | 5.1 | 9.0 | 1.7 | A California and China clipper. Sold in 1856 to French. |
| N. B. PALMER (1851; 1,399½ tons) | Westervelt & Mackey, New York | A. A. Low & Bro., New York | 202.5 | 38.5 | 21.9 | 5.3 | 9.2 | 1.8 | A China and general trading clipper. Sold to Germans in 1873. |
| CHALLENGE (1851; 2,006½ tons) | William H. Webb, New York | N. L. & G. Griswold, New York | 230.5 | 43.2 | 26 | 5.3 | 8.9 | 1.7 | A California and general trading clipper. Sold to British, 1861. |
| COMET (1851; 1,836 tons) | William H. Webb, New York | Bucklin & Crane, New York | 228 | 41.3 | 22.2 | 5.5 | 10.3 | 1.9 | A California and China clipper. Sold to British in 1863. |
| NIGHTINGALE (1851; 1,060 tons) | Samuel Hans- comb, Jr., Portsmouth, N. H. | Sampson & Tappan, Boston | 185 | 36 | 19 | 5.1 | 9.7 | 1.9 | Built as a cruise clipper ship and put in general trade. Was a Norwegian bark when lost in 1893. |
| WITCH OF THE WAVE (1851; 1,498 tons) | George Raynes, Portsmouth, N. H. | Glidden & Williams and Hunt & Peabody, Boston, and Bertram, Salem | 220 | 40 | 21 | 5.5 | 10.5 | 1.9 | A California and general trading clipper. Sold to Dutch, 1857. |
| SWORDFISH (1851; 1,036 tons) | William H. Webb, New York | Barclay & Livingston, New York | 169.5 | 36.5 | 20 | 4.6 | 8.5 | 1.8 | A California and China clipper. Wrecked China, 1862. |
| SHOOTING STAR (1851; 903 tons) | James O. Curtis, Medford, Mass. | Reed, Wade & Co., Boston | 164 | 35 | 18.5 | 4.7 | 8.9 | 1.9 | A California and China clipper. Sold to Siamese in 1856. |
| FLYING FISH (1851; 1,505 tons) | Donald McKay, East Boston | Sampson & Tappan, Boston | 207 | 39.5 | 22 | 5.2 | 9.4 | 1.8 | A California and China clipper. Wrecked China, 1858. |

The following is a list of the so-called "modern" British clippers built prior to the 1860's to compete with the American-built clippers engaged in the British China tea trade. Their size and proportions can be compared with those of the early American clippers, but the tonnage is, of course, as per British measurements of the period; whereas the tonnage of American clippers tabulated is based on United States rules of measurement in effect before 1865 and since that date referred to as "old measurement."

| Name of Clipper | Built | Builder | Owner | Ton- nage | Dimensions in Feet | | | Ratio | | |
|--|-------|------------------------|-------------------------------|--------------|-----------------------|------|-------|----------------------|-----------------------|---------------------|
| | | | | | Length | Beam | Depth | Length to Beam | Length to Depth | Beam to Depth |
| STORNOWAY | 1850 | Hall, Aberdeen | Jardine, Matheson & Co. | 506 | 157.7 | 28.7 | 17.7 | 5.5 | 8.9 | 1.6 |
| CHRYSOLITE | 1851 | Hall, Aberdeen | Taylor & Potter | 471 | 149.3 | 26.1 | 17 | 5.7 | 8.8 | 1.5 |
| CHALLENGER | 1852 | Green, London | Lindsay | 699 | 174 | 32 | 20 | 5.4 | 8.7 | 1.6 |
| CAIRNGORM | 1853 | Hall, Aberdeen | Jardine, Matheson & Co. | 938 | 185 | 36.5 | 20 | 5.1 | 9.2 | 1.8 |
| NORTHFLEET | 1853 | Northfleet, London | Duncan Dunbar | 896 | 180 | 32.3 | 20.7 | 5.6 | 8.7 | 1.6 |
| LORD OF THE ISLES | 1853 | Scott, Greenock | Martin | 770 | 190.7 | 27.7 | 18.4 | 6.9 | 10.4 | 1.5 |
| CREST OF THE WAVE | 1853 | Pile, Sunderland | Brice | 924 | 184.3 | 32.3 | 20.1 | 5.7 | 9.2 | 1.6 |
| SPIRIT OF THE AGE | 1854 | Pile, Sunderland | T. Gibb & Co. | 878 | 173 | 32 | 18.4 | 5.4 | 9.4 | 1.7 |
| VISION | 1854 | Hall, Aberdeen | James Beazley | 563 | 165 | 29 | 18 | 5.7 | 9.2 | 1.6 |
| First home of British ships in tea race of 1856. Round voyage claimed of 6 months 16 days at sea. | | | | | | | | | | |
| FIERY CROSS (I) | 1855 | Chaloner, Liverpool | J. Campbell | 788 | 154.4 | 31 | 19.1 | 5.0 | 8.1 | 1.6 |
| KATE CARNIE | 1855 | Steele, Greenock | Rodger | 576 | 148.3 | 26 | 19 | 5.7 | 7.8 | 1.4 |
| LAMMERMUIR | 1856 | Pile, Sunderland | John Willis | 952 | 178 | 34 | 22 | 5.2 | 8.1 | 1.5 |
| ROBIN HOOD | 1856 | Hall, Aberdeen | Beazley & Co. | 852 | 204 | 35.1 | 21 | 5.8 | 9.7 | 1.7 |
| FRIAR TUCK | 1857 | Hall, Aberdeen | Beazley & Co. | 662 | 193.2 | 31 | 17 | 6.2 | 11.4 | 1.8 |
| ELLEN RODGER | 1858 | Steele, Greenock | Rodger | 585 | 155.7 | 29.3 | 19.4 | 5.3 | 8.0 | 1.5 |
| ZIBA | 1858 | Hall, Aberdeen | J. Wade | 497 | 169 | 28.4 | 17 | 5.9 | 9.9 | 1.7 |
| FALCON | 1859 | Steele, Greenock | Shaw & Co. | 794 | 191.3 | 32.2 | 20 | 5.9 | 9.6 | 1.6 |

The following is a list with comparative particulars (regarding builders, owners, size, and ratios of prime dimensions) of what may be termed the sixteen leading, fastest, and most outstanding British China tea clippers built during the years 1860-1870 inclusive. This period follows the construction of the *Falcon* of 794 tons in 1859 and carries to the end of 1870, which year saw the building of the iron clipper *Hallowe'en* (920 tons) and her sister, the unlucky *Black Adder*, by Maudsley & Company on the Thames for Capt. John Willis (owner of the famous *Cutty Sark*) and the launching of the *Lothair* of 794 tons, which was the last out-and-out composite tea clipper to be built. The *Lothair* made a good passage carrying tea from Whampoa to London in the winter of 1873-1874 under unusually favorable sailing conditions in the China Sea and Indian Ocean. However, appearing so late on the scene, she was not generally used in the British China tea trade, but was kept mostly in the Japan and Manila trade and took her cargoes to New York oftener than to London.

| Name of Clipper | Built | Builder | Owner | Ton- nage | Dimensions in Feet | | | Ratio | | |
|---------------------|-------|------------------------------|-------------------------------|--------------|-----------------------|------|-------|----------------------|-----------------------|---------------------|
| | | | | | Length | Beam | Depth | Length to Beam | Length to Depth | Beam to Depth |
| FIERY CROSS (II) | 1860 | Chaloner, Liverpool | J. Campbell | 695 | 185 | 31.6 | 19.2 | 5.9 | 9.6 | 1.6 |
| FLYING SPUR | 1860 | Hall, Aberdeen | Jardine, Matheson & Co. | 735 | 184 | 31.3 | 19.4 | 5.9 | 9.5 | 1.6 |
| TAEPING | 1863 | Steele, Greenock | Rodger | 767 | 183.6 | 31.1 | 19.8 | 5.9 | 9.3 | 1.6 |
| SERICA | 1863 | Steele, Greenock | Findlay | 708 | 185.7 | 31.1 | 19.5 | 6.0 | 9.5 | 1.6 |
| ARIEL | 1865 | Steele, Greenock | Shaw, Maxton & Co. | 852 | 197.3 | 33.8 | 21 | 5.9 | 9.4 | 1.6 |
| SIR LANCELOT | 1865 | Steele, Greenock | James MacCunn | 886 | 197.5 | 33.6 | 21 | 5.9 | 9.4 | 1.6 |
| TAITSING | 1865 | Connell, Glasgow | Findlay | 815 | 192 | 31.4 | 20.1 | 6.1 | 9.5 | 1.6 |
| TITANIA | 1866 | Steele, Greenock | Shaw, Maxton & Co. | 879 | 200 | 36 | 21 | 5.5 | 9.5 | 1.7 |
| LAHLOO | 1867 | Steele, Greenock | Rodger | 799 | 191.5 | 32.8 | 19.8 | 5.8 | 9.7 | 1.7 |
| LEANDER | 1867 | Lawrie, Glasgow | Joseph Somes | 883 | 210 | 35.2 | 20.7 | 6.0 | 10.1 | 1.7 |
| SPINDRIFT | 1867 | Connell, Glasgow | Findlay | 899 | 219.3 | 35.5 | 20.2 | 6.2 | 10.8 | 1.7 |
| THERMOPYLAE | 1868 | Hood, Aberdeen | George Thompson | 948 | 212 | 36 | 20.8 | 5.9 | 10.2 | 1.7 |
| WINDHOVER | 1868 | Connell, Glasgow | Findlay | 847 | 201.1 | 34 | 19.7 | 5.9 | 10.2 | 1.7 |
| CUTTY SARK | 1869 | Scott & Linton, Dumbarton | John Willis | 921 | 212.4 | 36 | 21 | 5.9 | 10.1 | 1.7 |
| NORMAN COURT | 1869 | Inglis, Glasgow | Thomas Baring | 834 | 197.3 | 33 | 20 | 6.0 | 9.8 | 1.6 |
| HALLOWE'EN | 1870 | Maudsley, London | John Willis | 920 | 216.5 | 35.2 | 20.4 | 6.1 | 10.6 | 1.7 |

The following is a table showing the tonnage of high-class, speedy British tea clippers built for the China trade during each of the years 1850-1870 inclusive and for certain periods. The average tonnage and the maximum and minimum size of the tea clippers built for each year and for each stated period are set forth herewith:

| Year | Number Built | Total Tonnage | Average Tonnage | Maximum Tonnage of One Ship | Minimum Tonnage of One Ship |
|--|-----------------|------------------|--------------------|-----------------------------------|-----------------------------------|
| 1850 | 1 | 506 | 506 | 506 | 506 |
| 1851 | 1 | 471 | 471 | 471 | 471 |
| 1852 | 1 | 699 | 699 | 699 | 699 |
| 1853 | 4 | 3,528 | 882 | 938 | 770 |
| 1854 | 2 | 1,441 | 878 | 720 | 563 |
| 1855 | 2 | 1,364 | 682 | 788 | 576 |
| Total and averages for 6-year period..... | 11 | 8,009 | 728 | 938 | 471 |
| 1856 | 2 | 1,804 | 902 | 952 | 852 |
| 1857 | 1 | 662 | 662 | 662 | 662 |
| 1858 | 2 | 1,082 | 541 | 585 | 497 |
| 1859 | 1 | 794 | 794 | 794 | 794 |
| 1860 | 3 | 2,276 | 759 | 846 | 695 |
| Total and averages for 5-year period..... | 9 | 6,618 | 735.3 | 952 | 497 |
| Total and averages—1850-1860 inclusive.... | 20 | 14,627 | 731 | 952 | 471 |
| 1861 | 5 | 3,934 | 787 | 1,012 | 556 |
| 1862 | 7 | 5,057 | 722 | 915 | 550 |
| 1863 | 13 | 10,074 | 775 | 1,126 | 644 |
| 1864 | 6 | 4,149 | 691 | 816 | 624 |
| 1865 | 9 | 6,800 | 755 | 886 | 556 |
| Total and averages for 5-year period..... | 40 | 30,014 | 750.3 | 1,126 | 550 |

(Continued on next page)

| Year | Number Built | Total Tonnage | Average Tonnage | Maximum Tonnage of One Ship | Minimum Tonnage of One Ship |
|--|--------------|---------------|-----------------|-----------------------------|-----------------------------|
| 1866 | 4 | 3,169 | 792 | 967 | 623 |
| 1867 | 6 | 5,119 | 853 | 943 | 796 |
| 1868 | 5 | 4,305 | 861 | 948 | 795 |
| 1869 | 8 | 6,348 | 793 | 921 | 527 |
| 1870 | 3 | 2,632 | 877 | 920 | 794 |
| Total and averages for 5-year period..... | 26 | 21,573 | 829.7 | 967 | 527 |
| Total and averages—1861-1870 inclusive.... | 66 | 51,587 | 781.6 | 1,126 | 527 |
| Total and averages—1850-1870 inclusive.... | 86 | 66,214 | 770.0 | 1,126 | 471 |

The British tea clippers built for the China trade were always relatively small ships as compared with American-built clippers. Britain fought a losing fight for a few years in this trade, with its slow, heavier wooden sailing craft being driven from the trade by larger, much faster, and "snappier" American wood ships that were harder driven and more earnestly and adventurously operated to make time. British-built composite ships, later strongly constructed of iron and imperishable teakwood, whose models were copied from the speedy American clippers and whose command followed the initiative of the hard-driving Yankee skippers, gave good satisfaction in this China tea trade. After the American clippers became disinterested in the service, British designers and builders fought for supremacy among themselves, and the competition between Aberdeen and the Clyde grew to be just as keen as that of earlier years between Britain and America. The names of the builders that stand forth prominently in this East Coast versus West Coast fight waged by Scottish shipbuilders are Hall and Hood, of Aberdeen, and Steele and Connell, of the Clyde (Greenock and Glasgow), with Pile, of Sunderland on the English Northeast Coast, combating the Scotch designers and builders and experiencing a measure of success. Walter Hood, of Aberdeen, built the *Thermopylae* (948 tons), the acknowledged Queen of the Fleet and the speed rival for long years of the Clyde-built *Cutty Sark* (921 tons), constructed by Scott & Linton at Dumbarton in 1869. Alexander Hall, of Aberdeen, was the famous pioneer builder of clipper ships in Britain, and he not only constructed the pioneer British-built China tea packets *Stornoway* of 506 tons for Jardine, Matheson & Company in 1850, the *Chrysolite* of 471 tons for Taylor & Potter in 1851, and the *Cairngorm* of 938 tons, also for Jardine, Matheson in 1853, but also, in 1854-1855, built Britain's only large wood clipper, the 2,284-ton *Schomberg*, copied after American clippers and designed to be superior in all respects to the McKay-built clippers *Lightning*, *Champion of the Seas*, *James Baines*, and *Donald McKay*, ordered by James Baines & Company, of Liverpool, for its Black Ball (Australian) Line of fast colonial passenger and freight packets. The *Schomberg*, heralded by the British as "the world's strongest and fastest merchantman," was lost on her maiden passage out to Australia, but not before Capt. "Bully" Forbes, who had commanded the *Lightning*, had become thoroughly disgusted with her sailing ability and decided that she was a colossal failure. Hall's small clippers, however, were fast ships, and it was Hall who made the designation "Aberdeen clipper" in Britain synonymous with that of "Baltimore clipper" in the United States. In 1856, Hall built the China tea clipper *Robin Hood* of 852 tons and in 1857 the *Friar Tuck* of 662 tons, both for Beazley & Company. During the balance of the fifties and the sixties, he launched the following nine clippers designed solely for the tea trade:

| Name of Clipper | Year Built | Tonnage | Name of Clipper | Year Built | Tonnage | Name of Clipper | Year Built | Tonnage |
|-----------------|------------|---------|-----------------|------------|---------|-----------------|------------|---------|
| ZIBA | 1858 | 497 | STAR OF CHINA | 1862 | 794 | YANGTZE | 1863 | 688 |
| FLYING SPUR | 1860 | 735 | BLACK PRINCE | 1863 | 750 | ADA | 1865 | 687 |
| COULNAKYLE | 1862 | 579 | FYCHOW | 1863 | 710 | CALIPH | 1869 | 914 |

Pile, of Sunderland, built the China tea clipper *Crest of the Wave* (924 tons) in 1853 for Brice and the next year launched the *Spirit of the Age* (878 tons) for T. Gibb & Com-

pany. In 1856 he built the *Lammermuir* (952 tons) for J. Willis and in 1861 the little *Kelso* (556 tons) for J. Kelso; for the same owner, he launched the *Maitland* (799 tons) in 1865 and the *Undine* (796 tons) in 1867. Pile also built the *Osaka* of 527 tons for Killick in 1869, and Peverill constructed the *Pakwan* at Sunderland for Patton in 1863.

The relative uniformity in size of the British tea clippers is remarkable, and of the eighty-six ships of this type built during the twenty-one-year period 1850-1870 inclusive (an average of about four per year), only two registered over 1,000 tons, these being the *Highflyer* of 1,012 tons, built by R. & H. Green, London, in 1861 for their own account, and the *Wild Deer* of 1,126 tons, built by Connell, of Glasgow, for Albion Company in 1863. After the first three ships of this class were built in 1850-1852, there was no steady increase in the size of British tea clippers as the years advanced. The four ships of this type constructed in 1853 averaged 882 tons; whereas the five launched in 1861 averaged only 787 tons, and the three built in 1870 averaged 877 tons. The smallest British tea clipper was the *Chrysolite* of 471 tons, built in 1851 and the second of this class of vessel to be launched. The only other tea clipper to register under 500 tons was the *Ziba* of 497 tons, built by Hall, of Aberdeen, in 1858. The next smallest China tea clippers were:

| Name | Ton-nage | Year Built | Name | Ton-nage | Year Built | Name | Ton-nage | Year Built | Name | Ton-nage | Year Built |
|------------|----------|------------|-------|----------|------------|-------------|----------|------------|--------------|----------|------------|
| STORNO-WAY | 506 | 1850 | VIGIL | 550 | 1862 | FUSI-YAMA | 556 | 1865 | COUL-NAKYLE | 579 | 1862 |
| OSAKA | 527 | 1869 | KELSO | 556 | 1861 | KATE CARNIE | 576 | 1855 | ELLEN RODGER | 585 | 1858 |

Of the eighty-six first-class and distinctive British China tea clippers, two had a registered tonnage under 500 tons, nine had a tonnage of over 500 and under 600 tons, eighteen of from 600 to 700 tons, twenty-two between 700 and 800 tons, twenty of from 800 to 900 tons, thirteen between 900 and 1,000 tons, and two of over 1,000 tons.

The difference in the size of British and American clippers is astounding. Britain first felt the need of clippers in its China tea trade, and its extensive experience in that trade suggested the use of relatively small ships in that service via the Cape of Good Hope and with two crossings of the equator each way. Britain's next big call for speedy clippers was for its Australian trade, and in this service, which started in as another Cape of Good Hope run both ways with a return via China, the East Indies, or India, a China tea clipper type of vessel was built in Britain, although somewhat larger than the ships intended for the tea trade. These Australian clippers, to make time, had to travel in the Roaring Forties (with the prevailing heavy winds and seas) from the South Atlantic to Melbourne, and both the route and the demands of the trade required far bigger ships than the China tea clippers. To obtain ships of the type needed for the Australian colonial business, Britain bought American clippers of relatively large size and ordered several built for its account in the United States. The only attempt to build a big clipper in Britain for its Australian trade (the *Schomberg*) was a dismal failure. Lieutenant Maury, U.S.N., "the Pathfinder of the Seas," laid out the economic track from North Atlantic ports (British or American) to Australia and return as eastward via the Cape of Good Hope when outward bound and via Cape Horn on the homeward passage, and this was an ideal route for big ships running before westerly gales in the southern latitudes, as they traveled around the world to complete each voyage.

Prior to the discovery of gold in California and the arrival in the East of news of the find, the United States built many early clippers for the China trade. The latest and best vessels of this type were the *Rainbow* of 752 tons, built in 1845; the *Sea Witch* of 908 tons, built in 1846; the *Samuel Russell* of 957 tons and the *Memnon* of 1,068 tons, built in 1847; and the *Oriental* of 1,003 tons, built in 1849. These vessels were all fully twice as large as British ships in the China trade and double the size of Britain's first tea clippers built

at Aberdeen in 1850-1851. No real or true clipper of the extreme type constructed in the fifties was ever built in the United States solely for the Chinese tea trade to take tea cargo to either British or American ports. The early American tea clippers sailed to China with a general cargo and brought back tea. The California Gold Rush and the around-the-Horn trade demanded large and powerful as well as speedy vessels, and this trade for a few years was very profitable (as was the trade to Australia following its gold find; also to a lesser degree the Indian trade); so unless the China tea cargo could be handled on a homeward passage of a complete around-the-world voyage sailing west, the China tea trade quickly lost its interest to American shipowners. A few clippers were built in the early fifties in the United States of a type and size that, it was felt, would make them well suited to the China trade and for runs in tropical waters. Chief among these were the *Ino* of 895 tons and the *Gazelle* of 1,244 tons, built in 1851 (the latter being rather large, but, nevertheless, with her large deadrise, modeled decidedly for "ghosting along" in the doldrums or tropics). Other American clippers believed to be of a size well suited to the China trade were the *Mandarin* (776 tons) and *Celestial* (860 tons), built in 1850, and the *Shooting Star* (903 tons), *Wild Pigeon* (996 tons), *Northern Light* (1,021 tons), *Swordfish* (1,036 tons), and *Nightingale* (1,066 tons), built in 1851.

Outside of ships of the Baltimore clipper type and size and small, fast vessels constructed for trade to South American ports, etc., all United States clippers laid down after mid-1850 were built for general deep-sea service, with the Cape Horn trade to California specifically and emphatically in mind. By 1851 the Australian trade requirements, with a call for big ships to sail over the route of the Roaring Forties in the southern latitudes, were given consideration, and the demand was not only for faster but also for bigger ships. The following list of outstanding American-built clippers constructed during the years 1850-1853 inclusive is of interest when compared with the size of the clipper ships built in Britain during the same period, whose tonnage varied from 471 to 938 tons; no clipper of 700 tons or over was built in Britain before 1853, in which year the *Great Republic* of 4,555 tons was built by Donald McKay, of East Boston, with his eye on the British-Australian trade.

| 1850 | | 1851 | | 1852 | | 1853 | |
|-----------------|----------|-------------------|----------|-----------------------|----------|---------------------|---------------|
| Name of Clipper | Ton-nage | Name of Clipper | Ton-nage | Name of Clipper | Ton-nage | Name of Clipper | Ton-nage |
| STAG HOUND | 1,534 | TRADE WIND | 2,050 | SOVEREIGN OF THE SEAS | 2,421 | GREAT REPUBLIC* | 4,555 (3,357) |
| SEA SERPENT | 1,402 | CHALLENGE | 2,007 | TORNADO | 1,802 | QUEEN OF CLIPPERS | 2,361 |
| GAME COCK | 1,392 | COMET | 1,836 | WINGED RACER | 1,767 | RED JACKET | 2,305 |
| WITCHCRAFT | 1,310 | STAFFORDSHIRE | 1,817 | BALD EAGLE | 1,704 | EMPRESS OF THE SEAS | 2,197 |
| UNIVERSE | 1,297 | FLYING CLOUD | 1,782 | DEFIANCE | 1,691 | CHARIOT OF FAME | 2,050 |
| SURPRISE | 1,261 | INVINCIBLE | 1,769 | WESTWARD HO | 1,650 | STAR OF EMPIRE | 2,050 |
| ECLIPSE | 1,223 | RACER | 1,669 | AUSTRALIA | 1,447 | LIGHTFOOT | 1,996 |
| WHITE SQUALL | 1,119 | JOHN STUART | 1,654 | GOLDEN WEST | 1,441 | YOUNG AMERICA | 1,961 |
| JOHN BERTRAM | 1,080 | TYPHOON | 1,611 | SIMOON | 1,436 | FLORA TEMPLE | 1,916 |
| CELESTIAL | 860 | HURRICANE | 1,608 | WESTERN EMPIRE | 1,398 | GAUNTLET | 1,854 |
| MANDARIN | 776 | FLYING FISH | 1,505 | JACOB BELL | 1,381 | PRIDE OF AMERICA | 1,826 |
| ROMAN | 775 | WITCH OF THE WAVE | 1,498 | QUEEN OF THE PACIFIC | 1,357 | ROMANCE OF THE SEAS | 1,782** |

*Tonnage of the GREAT REPUBLIC as built by Donald McKay at East Boston and when loading for her maiden voyage was 4,555 tons; as rebuilt before sailing, 3,357 tons.

**Other prominent large clippers built in 1853 included SWEEPSTAKES (1,735 tons), DAVID BROWN (1,715 tons), FLYING SCUD (1,713 tons), DAVID CROCKETT (1,679 tons), NEPTUNE'S CAR (1,616 tons), WIZARD (1,601 tons), etc.

A British historian has said that the British felt that small, sharp, light-weight ships carrying a great wealth of canvas were required for the peculiar sailing conditions generally encountered in the China trade; so they designed and built small ships "able to cross the belts of doldrum calms and shifting puffs of light air in which heavier ships could lose days on end while the lighter and handier British craft could 'ghost' along in airs so faint that a lighted candle could be carried round the deck." And we read:

The big Americans could stand up to the tremendous gales and seas of "The Roaring Forties" and round the Horn, and gain miles a day in such weather; but the little British clippers could gain not miles but whole days on them in the slow creep through the Doldrums.

I can quote one actual instance of this. In 1855 the American-built *Lightning* (2,084 tons) passed into the Doldrum belt of calms between the tropics of Cancer and Capricorn, two days ahead of the little British *Ariel*, and the latter passed out of the tropical belt five days ahead of the *Lightning*. On the average the little clippers beat the big over this

belt of calms by about five days—a tremendous advantage in a long ocean race in which over and over again one day or less divided winner from loser at the winning post.

So firmly convinced, indeed, were the British that their small, handy craft were best suited to the China trade that right up to the end of it, despite the slowly growing tendency to increase size, they built only two China clippers of 1,000 tons, R. & H. Green's *Highflyer* (1,012 tons), built 1861, and the Albion Co.'s *Wild Deer*, of 1,126 tons, in 1863; and neither ever figured prominently in the tea races.

Whereas the British historian here quoted is generally correct in the difference that he seeks to emphasize between the sailing, under certain existing conditions, of a big, heavy clipper and a small, light one in the doldrums, nevertheless, he errs in his reference to a race through the tropics in 1855 between the American-built clipper *Lightning* (2,083 tons) and the British China tea clipper *Ariel*. The British contestant in this mythical race, which was a fine and fast ship of 852 tons and very speedy in light airs, was not launched until 1865, or ten years after the claimed race took place. On September 20, 1855, the *Lightning*, in the Black Ball Line (Australian) service, outward bound from Liverpool, crossed the Tropic of Cancer and on October 15 was at Capricorn after taking 25 days to cross the tropics. Records show that the *Ariel* crossed the Cancer line on September 22, 1865 (ten years and two days after the September 1855 crossing of the *Lightning*), and was at the Capricorn line on October 10 after traversing the tropics in 18 days, or seven days less than the time required for the bigger and heavier ship ten years before. Apparently, the best time ever made by the *Ariel* between the tropics was 13 days in November 1866, and the *Thermopylae*, in November 1866, is credited with a corresponding run of 12 days; whereas the best performance of the *Lightning* between the same points was said to have been 16 days in February 1855. Basil Lubbock, the British historian, in *THE CHINA CLIPPERS* (1914), has written:

The Black Baller [large American-built clipper in the British-Australian packet service], owing to her size and height out of the water, . . . could run before the westerlies with dry decks and sky-sails set, when a [British] tea clipper, with her narrow beam and low freeboard, would only be burying herself if pressed or half-becalmed under the lee of each roller if snugged down to the lower canvas. But in the light weather of the tropics and more especially in the baffling airs of the doldrums, the little tea clippers could sail 2 feet to a Black Baller's one. I have taken out the times be-

tween the two tropics from the logs of various ships and find that the tea clippers were usually five or six days faster than either the Black Ballers [British-owned, American-built Liverpool-Australia packets], Yankee clippers, or the [later British-built] iron clippers. . . . In doldrum weather such vessels as *Ariel*, *Thermopylae*, *Sir Lancelot*, and *Titania* possessed the power of ghosting along 4 or 5 knots when there was scarce a ripple on the water and when a Black Baller [American-built Australian clipper packet] or California flyer would barely have had steerage way.

The best day's run for any British-built sailing ship is 363 miles, claimed for the *Cutty Sark* (921 tons), a composite vessel built as a China tea clipper in 1869, but more successful in the seventies and eighties in the Australian trade as a wool clipper. The *Thermopylae* is credited with 358 miles, the *Ariel* with 340 miles, and the *Sir Lancelot* with 336 miles as their all-time record high day's runs (although a claim of 354 miles covered in a day has been made for the *Sir Lancelot*). It would seem that the best all-time day's run of

any relatively small vessel in the China trade was made by the little American bark *Maury* of some 600 tons in 1856, when, under command of Capt. Charles Fletcher, she decisively defeated the crack British tea clippers *Lord of the Isles* and *Chrysolite*. The time, even of the winner, from Foochow to Deal in 124 days was relatively slow, but when crossing the Indian Ocean the *Maury* did some fast sailing, covering 370 nautical miles in one day and averaging over 272 miles per day during the twelve consecutive days ending August 8. The American clipper *N. B. Palmer* (1,400 tons), famous in the China trade, averaged 335 nautical miles per day for four days and 288 miles for twelve consecutive days on one of her passages from New York to Hong Kong, and while traversing the same waters in the North Atlantic on May 26, 1852, when three days out of New York and traveling to the southeast (but headed for Cape Horn), she covered 396 miles, noon to noon (less than twenty-four hours). The bigger *Flying Cloud* (1,782 tons), on December 21, 1852, in the Indian Ocean during a passage from Whampoa to New York, had a day's run of 382 miles. The *Golden Gate* (1,341 tons), in late November 1854, made three day's runs of 380, 360, and 350 miles, by observation, in her fast run down the China Sea from Shanghai to Batavia, and the *Comet*, when sailing from Liverpool to Hong Kong in 1854, made 350 miles in one day. However, when engaged in other trades, the big American clippers made many day's runs in excess of 400 nautical miles, and many of them were reported when the ships were in the Australian service running their easting down. The *Red Jacket*, in July 1854, made 400 miles in one day during an Australian passage and, in January 1854, reported a day's run of 417 miles in the North Atlantic. The *Lightning* made 412 and 430 miles as day's runs in the Australian service and claimed 436 miles during an eastward passage of the North Atlantic in March 1854. The big Black Ball Australian packet *James Baines* recorded day's runs of 404, 407, 420, and 423 nautical miles, and the *Donald McKay* claimed 421 miles; while the *Great Republic* made 413 miles in one day and the *Flying Cloud* 402 miles in the California trade. The highest day's run reported by any sailing vessel was 449 miles claimed by the American clipper *Flying Scud* of 1,713 tons on November 6, 1854, when that ship, under the command of Capt. Warren Barse, was running under charter from New York to Melbourne.

*American Sailing Ships in the China-to-England
Tea Trade, 1850-1860 Inclusive*

The number of American-built ships participating in the China-to-England tea trade during the years 1850-1860 was as follows:

| Leaving a China Port during | First-Class Clippers | | Reputed Fast Sailers | Full-bodied Ordinary Sailers | Total |
|-----------------------------------|----------------------------|-----------------------------|----------------------------|------------------------------------|-------|
| | Large (over 1,000 tons) | Small (under 1,000 tons) | | | |
| 1850 | 1 | — | 4 | 3 | 8 |
| 1851 | 3 | — | 5 | 9 | 17 |
| 1852 | 8 | 3 | 6 | 2 | 19 |
| 1853 | 8 | 3 | 5 | 4 | 20 |
| 1854 | 8 | 4 | — | 2 | 14 |
| 1855 | 17 | 4 | — | 3 | 24 |
| 1856 | 7 | 1 | 1 | 3 | 12 |
| 1857 | 4 | 3 | 1 | — | 8 |
| 1858 | 1 | 1 | — | — | 2 |
| 1859 | 7 | 2 | 2 | 1 | 12 |
| 1860 | 1 | 1 | — | 2 | 4 |

After 1856, Americans became disinterested in the China-Britain tea trade, and in only one year (1855) did the American clippers participate in any numbers (twenty-one) in this run. In 1858 it was felt that Americans had deserted the trade for good, for only two United States-built and owned ships—and neither of them sizable extreme clipper ships—took part therein. There was, however, a temporary revival of interest in 1859, when twelve American ships went over the course, although it was evident that "American clippers of the first flight were conspicuous by their absence," and British marine historians tell us: "The year 1859 is celebrated in the annals of the tea races as being the last year in which the Americans competed in the English trade."

The original American clipper ship passage in the British tea trade was that of the *Oriental* (1,003 tons; built in 1849), which, under the command of Capt. Theodore D. Palmer, left Whampoa August 28, 1850, against the monsoon. She was at Anjer September 18, passed the Lizard 91 days out, and was at the West India dock at London on December 3, 1850, after a then record passage of 97 days from Hong Kong. This, it has been said, was "the only real clipper ship passage in the British China tea trade in 1850," which statement, whereas true, needs to be qualified somewhat because of the excellent sailing performance of the fast American China trader *Argonaut* of 575 tons, built at Medford, Mass., of pre-clipper model. She proved fast enough to beat the best of the British "Aberdeen clippers" in the tea trade and gave the early American clipper *Oriental* some real competition. Much was expected of the *Oriental* by the British merchants in China, for on her maiden voyage she had run from New York to Hong Kong, by the eastern passage, in 109 days, had returned to New York in 81 days from Whampoa (70 days from Anjer), and on her second voyage had made a passage out to Hong Kong in the record time of 81 days. Her arrival in port on August 8, 1850, was her second entry to that harbor in 1850, following her first arrival by seven months and one week. The fast sailing performance of the *Oriental* between China and New York caused the British merchants of Hong Kong to bid high to charter her for the London tea trade, and whereas the owner had intended to send her back to New York, the unprecedented offer of £6 sterling per ton of 40 cubic feet to take a cargo of tea to London, when the prevailing freight rate was only £3-10-0 per ton of 50 cubic feet, proved a sufficient inducement to cause Russell & Company, the resident agent of the owner, A. A. Low & Bro., New York, to divert the ship from her planned route and send her to London with 1,618 tons of tea, on which the freight paid amounted to some \$48,000.

The little *Argonaut*, leaving Whampoa at about the same time as the *Oriental* (a ship of 75 per cent greater registered tonnage), was at Anjer September 28 after a slow run down the China Sea of 32 days, during which she was beaten eleven days by the *Oriental*; whereas usually it was the smaller, lighter-draft vessels that held the advantage over the heavier, bigger, and deeper-draft vessels in these waters. Leaving Anjer and the Straits of Sunda, the *Argonaut*, surprisingly, in the deep-sea run to England, beat the time made by the *Oriental* (which was then about ten days ahead of her) by one day. The *Argonaut* made a passage of 107 days, which, while ten days slower than the splendid record-making run of the *Oriental*, was a good deal faster than the time made by the British Aberdeen clippers *Countess of Seafield* and *Reindeer* and all other vessels that left China for England about the same time as the American ships.

The *Argonaut*, returning from England to China, turned the tables on the *Oriental* and beat all ships sailing from London during the end of 1850 and early 1851 on the run out to Whampoa. The Aberdeen clipper *Reindeer*, leaving London in late December 1850, was 130 days to Hong Kong. The *Oriental* sailed January 14, 1851, and was 116 days going out (89 days to Anjer). The *Argonaut* did not get away until February 27, 1851, and her passage to Hong Kong was made in the fast time of 107 days, thus beating the *Oriental* by nine days and the British *Reindeer* by twenty-three days.

Another American ship to make a fast passage carrying tea from China to England in 1850 was the *Wisconsin*, a full-bodied but fast sailer of 925 tons built in 1847. She left Hong Kong at 7:00 A.M. on December 4, 1850, and anchored in the Downs (London) at 10:30 P.M. on March 10, 1851, after a passage of 96 days, which was practically the same as that of the *Oriental* to this point, although the *Wisconsin* had the benefit of a more favorable monsoon. The *Roman* of 775 tons, like the *Wisconsin* (and, in fact, the *Argonaut* also), was of the class of "fast-sailing Canton traders" that preceded the real clippers and, as Cutler says, "derived their speed from the quarter-deck rather than from their lines." The *Roman* also made a splendid passage to England under conditions less favorable than those experienced by the *Wisconsin*. Leaving Macao September 13, 1850, she was 25 days beating down to the Straits against a southwest monsoon. Departing from Anjer at 1:00 P.M. on October 8, the *Roman* (Captain Putnam) ran 1,758 miles in the next seven days (averaging 251 miles per day and well over 10 knots per hour for a week). On December 26, the ship made the Scilly Isles in the English Channel when 78 days from Anjer and 103 days from Macao (also reported as "75 days from Anjer and 100 days from Canton"). According to British statistics, the *Roman* must have been unwarrantedly delayed in the English Channel or at the mouth of the Thames; for the date of her arrival at the unloading dock in London is stated as January 17, 1851, which is seemingly an error, as is the British-recorded length of passage of "125 days from Macao." As the arrival date at London for the ship *Argonaut* is also given by the British as January 17, 1851, it is possible that the British records of the two American ships are confused and that the *Roman* reached her discharging dock some two weeks before the date stated by them.

In 1851 three first-class American clippers participated in the British China tea trade. The *Oriental*, after her 116-day passage from London to Hong Kong, went up the coast some 900 miles to Shanghai to load, sailed from Woosung July 16, had a long run down the China Sea, and reached London after a passage, anchorage to dock, of 127 days, made under very unfavorable sailing conditions. On this passage, the *Oriental* beat the *Roman* of 775 tons, a "full-modeled semi-clipper" (built by George Raynes, Portsmouth, N. H., in 1850), and the British Aberdeen clipper *Reindeer*, each of which ships also sailed from Woosung (Shanghai) in July 1851 "against the monsoon." A comparison of these three passages is given herewith:

| Name of Ship | Flag | Sailed from Woosung | Arrival at London | Length of Passage in Days |
|--------------|----------|---------------------|---------------------------|---------------------------|
| | | <u>1851</u> | <u>1851</u> | |
| REINDEER | British | July 10 | Nov. 26 | 139 |
| ORIENTAL | U. S. A. | July 16 | Nov. 20 | 127 |
| ROMAN | U. S. A. | July 23 | Dec. 1 (Deal, Nov. 28) | 131 |

Returning to China, the *Oriental* arrived at Hong Kong on March 5, 1852, completing a passage of 116 days from London, following which she proceeded to Shanghai to load and sailed for New York on September 1. She was 28 days in the long beat down the China Sea, but ran from Anjer to New York in 78 days notwithstanding the fact that she was held up off the Cape of Good Hope with very unusual "light and variable winds" for ten days.

The two new American clippers, diverted to the China British tea trade in 1851, sailed from Hong Kong (Whampoa) and were luckier and fared better than the *Oriental*, and they made good passages (under more favorable conditions) as follows:

| Name of Clipper | Captain | Ton-nage | Year Built | Departure | | Arrival | | Length of Passage in Days |
|-----------------|----------|----------|------------|-----------------|------------------------------------|-------------------------------|--------------------|---------------------------------|
| | | | | Port | Date | Port | Date | |
| | | | | | <u>1851</u> | | <u>1851</u> | |
| SURPRISE | Dumaresq | 1,261 | 1850 | Whampoa (Macao) | July 28 | London (105 days to Brighton) | Nov. 12 | 106 days |
| WHITE SQUALL | Lockwood | 1,119 | 1850 | Whampoa | Sept. 8 (anchored at Anjer 2 days) | Downs (London) Isle of Wight | Dec. 18 Dec. 16 | 99 days net (97 days at sea) |

The *White Squall* encountered a severe typhoon in the China Sea and was required to stop two days at Anjer to make needed repairs to spars, rigging, and deck gear. Off Madagascar she lost her main-topmast and was handicapped thereby in sailing for several days, but made the fastest China-to-England passage not only of the season but also of the year. Captain Lockwood of the *White Squall* wrote from London to her owner: "Our teas were discharged in fine order, which fact and our general appearance 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."

The new British tea clippers *Stornoway* and *Chrysolite* made their maiden voyages to China in 1851, and each claimed a passage out to Hong Kong in 102 days and a return in 103 days. The *Stornoway* was commanded by Captain Robertson, a "crack racing skipper of the British tea fleet in the forties," who had come from the *John O'Gaunt*, knew the China Seas well, and, it is said, "was a great man to make time over every mile of the course." She was owned by Jardine, Matheson & Company, which operated out of London. The *Chrysolite* was under the command of Capt. Anthony Enright (later in command of the American-built, British-owned record-breaking big clipper *Lightning*), a notorious driver thoroughly schooled and experienced in the China trade. She was owned by Taylor & Potter, of Liverpool, and sailed from that port. There was much jealousy between the two pioneer British tea clippers, which had been built expressly to compete with American clipper ships (owners, hailing ports, and commanders), but both the *Stornoway* and *Chrysolite* had been designed and built by Alexander Hall, of Aberdeen, Scotland. The principal difference between the British and American clippers was the relatively narrow beam of the British ships, and Lubbock, the British marine historian, writes: "This lack of beam made them far less powerful in heavy weather, and they could not be driven in strong breezes like the Americans. Indeed they had so little bearing forward that they went through the seas rather than over them, and gained a bad reputation for washing men off the jibboom when the huge jib of that day had to be handled." The British clippers were much smaller and lighter than the Americans and made better time in light airs and in "ghosting along" in the tropics; moreover, their small size and light draft, under a specialized command, gave them an advantage in navigating the China Seas. But little is known of the details of the maiden voyage of the *Stornoway*, but she probably made a sea run out to Hong Kong in 102 days and returned in 103 days from pilot to pilot or to some landmark. More information is available of the maiden voyage of the *Chrysolite*, which claimed to have beaten her rival (the *Stornoway*) on both the outward run to China and the passage home. Extravagant claims were made in the British press of the speed and record-breaking passage to China of the *Chrysolite* on her maiden voyage, of which the following is typical:

The Quickest Voyage to China—Our Aberdeen correspondent says: The *Chrysolite*, a clipper ship, built at Aberdeen, by Messrs. Hall, for the Liverpool and China trade, has just made the voyage from Liverpool to Anjer in 80 days. This is the quickest voyage on record. The *Oriental* made the same passage out in 89 days, and that was without precedent; but for the present the *Chrysolite* has the palm. This ship, we understand, was built expressly to contest the voyage with the *Oriental*, and no expense was spared to make her worthy of the British name.

A run from dropping the pilot off the British coast to Anjer is not a "voyage to China"; neither was a passage from a North Atlantic port to Anjer in 80 days a record. On the

previous voyage, the American clipper *Oriental* had sailed from New York May 19, 1850, passed Anjer July 29, and arrived at Hong Kong August 8, making a run of 71 days to Anjer and completing a passage of only 81 days from a North Atlantic to a China port. The *Oriental* had traveled from New York to Hong Kong in the same time that the *Chrysolite* actually took to sail from Liverpool to Anjer and in twenty-one days less time than the British clipper claimed to have made the run from Liverpool to Hong Kong. Moreover, the *Oriental's* passage of 71 days to Anjer from New York was nine days less than the run of 80 days claimed by the *Chrysolite* over the more favorable course of from some point off Liverpool in the Irish Sea to Anjer or Java Head. The voyage to China from a North American port, such as New York, has always been considered many days longer than one originating at any British port, for under ordinary conditions a ship leaving England would meet with much more favorable winds (the northeast trades) than a vessel sailing from America on the run to the Atlantic equator and Cape St. Roque. (Lieutenant Maury, "the Pathfinder of the Seas," estimated that Liverpool was ten days nearer a Chinese, Indian, Australian, or Pacific port than was New York.) In 1844 the little American *Houqua* ran from New York to Anjer in 72 days and to Hong Kong in 84 days, and in 1846 her time over the same course was 72 days 14 hours to Anjer and 86 days 17 hours to Hong Kong. Carl C. Cutler, in *GREYHOUNDS OF THE SEA*, says:

Previous to 1851 a dozen American ships had sailed from New York to Anjer in passages averaging less than seventy-five and a half days. It could not, therefore, be seriously considered that the *Chrysolite* had broken any records, her time being longer, even, than former British voyages,

although her passage was good and she eventually did better. 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.

The maiden passage of the *Chrysolite* from Liverpool to Hong Kong, with the ship steadily driven hard to make time by Captain Enright, was not a comfortable one. Upon the ship's arrival at her destination, six of her crew of able seamen refused "to go back home in her" and succeeded in obtaining their discharges. Captain Enright writes of his experience on the outward passage as follows:

In the Indian Ocean we had a gale from the west and the tremendous seas that incessantly swept over the stern caused great injury to some of my men. . . . Six of the men were severely injured by the heavy sea [the chief officer received a fractured skull, and one seaman "had his thigh broken"]. We shortened sail and lay to for a

while. . . . At daylight we sighted St. Paul's Island and now saw that our misfortunes, by stopping the ship, had probably been the means of saving our lives. Had we not laid to at the time we did, we should have been thrown on to the island and in that dark night and furious sea not one of us could have escaped.

British historians generally credit both the *Stornoway* and *Chrysolite* with a 103-day passage home from China in 1851, but the dates of sailing and arrival do not check with the stated length of run. The *Chrysolite* reported sailing from Whampoa on August 18, 1851, and arriving at Liverpool on December 1; if these dates are correct, then the passage was 105 days and not 103 days, and the sailing and arrival dates do not necessarily mean the date of leaving anchorage at port of departure or the date of actual docking at Liverpool or even anchoring in the Mersey. The *Chrysolite* was reported to have run 29,837 miles during 206 full days of sailing on her maiden round voyage (whereas British historians say that she made the round trip in 205 days, dock to dock, an obvious impossibility). The average distance reported traveled per day is a scant 145 miles at a speed of about 6 knots per hour, which is not fast. British historians report that when the American clipper *Comet* made her record run from Liverpool to Hong Kong in 1854 of 83 days 21 hours from pilot to pilot, the average distance covered per day was 212 miles, which represents an average speed of $8\frac{3}{4}$ knots per hour and a total mileage of some 17,700 nautical miles, both of which appear to be excessive. However, the *Comet* did cover 350 miles in one day ($14\frac{2}{3}$ knots per hour) and log at times 16 knots; whereas throughout the *Chrysolite's* entire round maiden voyage, her best day's runs were 320, 289, and 268 miles in the trades. We read:

"Going free under all sail, she logged a steady $12\frac{1}{2}$ to $13\frac{1}{2}$ knots, and went up to 14 for limited periods; on the wind her best speed was at the rate of $10\frac{1}{2}$ knots."

The British records state that the best passage in 1852 in the British China trade was made "by the Salem clipper *Witch of the Wave*, Captain Millet." She left Canton (Whampoa) on January 5, 1852, ran to Java Head in the record time of 7 days 12 hours, was 29 days between Java Head and the Cape of Good Hope, and then had adverse winds to the Western Islands. She received her pilot on April 4 off Dungeness, 90 days from Whampoa, and arrived at London the following day. The American clipper *Challenge*, whose commander, Capt. John Land, had died in China, was taken from Whampoa on August 5, 1852, laden with tea for London by the former mate, Pitts, of the *Witchcraft*. The *Challenge*, with her commander inexperienced as to the waters and fluky winds of the China Seas, had difficulty making time working down the China coast and was 39 days reaching the Straits of Sunda; but once she got into the Indian Ocean, the big Webb-built clipper did some record sailing, running from Anjer to the Downs in only 65 days and making a run of 39 days from the Cape. Her passage of 105 days from Whampoa to Deal (London), where she arrived on November 18, 1852, we are told, "was the shortest made that season, eclipsing the runs of the *Surprise*, *Nightingale*, and *Race Horse*, American clippers, and the *Chrysolite*, *Stornoway*, and *Challenger*, British clippers." The magnificent sailing of the *Challenge*, when making an all-time record run of 65 days from Anjer to the Downs (or Deal), attracted a great deal of attention in Britain, and while the ship was in dock, her lines were taken off by the admiralty. We are told: "She was immediately taken up for a round voyage London to China and again on the outward passage led the fleet."

Much has been written by British historians of the new British clipper *Challenger*, built in 1852 by Richard ("Dicky") Green, Blackwall, London, and of her defeating the American clipper *Challenge* on this run. Lubbock writes: "The two vessels left Anjer on the same day, and when this was telegraphed home, tremendous stakes were wagered as to which should be the first arrival in London; it was even rumoured that the loser was to be forfeited to the winner." Continuing, he says: "After a very smart run, the little *Challenger* just succeeded in beating the big *Challenge* into dock by two days"; but he adds that the American clipper made the passage from Whampoa to London in 105 days and the British *Challenger* from Shanghai to London in 113 days. The statement that the American and British clippers left Anjer in company and that the *Challenger* beat the New York ship on the run to England is absolutely false. The British *Challenger* sailed from Shanghai and was clear of the river on July 27, 1852, which was nine full days before the American *Challenge* left Whampoa. The small new British clipper of 699 tons (copied in model and sail plan after the *Oriental* and other United States-built ships with the sole object of adapting American ingenuity and originality in design and construction to the limitations and peculiarities of the China trade, which Britain knew full well) made the longer run from Shanghai down the China coast to the Straits of Sunda in the same time as the big American clipper of 2,007 tons, with her greater draft as well as weight and a commander strange to both the ship and the course, took to cover the shorter distance from Whampoa (Hong Kong) to the Straits. The British *Challenger* passed Anjer on September 4, 1852, and the American *Challenge* arrived there on September 13, or nine days later. After a magnificent ocean passage of 65 days, the American clipper was at Deal on November 18, following which she was detained at anchor by British pilots and authorities three days at Gravesend, it being affirmed that the ship's great draft would not permit her to go up the river to her dock earlier. While the *Challenge* was lying at anchor at Gravesend waiting for the pilot and tug to take her to an unloading dock, the British clipper *Challenger* arrived from China after a run of 75 days from Anjer to Deal, or a ten-day longer sea run than that made by the American clipper, and proceeded without delay to her London dock, where she arrived November 19; whereas the American *Challenge* was not permitted to reach her unloading dock until November 22. The total lengths of the passages from a China port to Deal were

Challenge, 105 days; *Challenger*, 115 days, and the times from departure from China to arrival at the London dock were *Challenge*, 109 days; *Challenger*, 116 days.

Another American clipper to make a good China-to-England tea run in 1852 was the *Surprise*, which, on the return leg of a round voyage in the British China trade (she ran out from London to Anjer in 81 days), practically duplicated her performance of the preceding year, each passage being made in July-November and each in 107 days from Whampoa to the London dock and 106 days to the Downs (in 1851, 105 days to Brighton). The Boston-built clipper *John Bertram* (1,080 tons) sailed from Shanghai August 12, 1852, and after experiencing a terrific typhoon in the China Seas, with damage to spars and rigging, loss of sails, two men swept overboard, and eleven of the crew injured, she put into Singapore for repairs and hospitalization. Resuming her voyage, she was at the Straits of Sunda on October 18 and from there made a run to the Cape of Good Hope in 31 days (the fastest run made by any ship up to that time), but following this she encountered "atrocious sailing weather in the Atlantic and the Channel" and required 53 days to run from the Cape to the London dock. The Webb-built New York clipper *Invincible* (1,769 tons), a big, fast packet designed for the turbulent transatlantic service (which is credited with a day's run of 400 miles on her maiden trip from New York to San Francisco), ran from Whampoa to London in 1852 during the unfavorable monsoon season and made the passage in 109 days to Gravesend.

We are told that in 1852, during a more favorable period, the British clippers *Stornoway* and *Chrysolite* had a tea race between themselves from Whampoa (July 9) home and that they sailed in company for twenty-one days down the China Seas. The *Chrysolite* was reported at Liverpool on October 23, 106 days out, and the *Stornoway* at Deal (London) on October 26 after a passage of 109 days, the ships having been in company during forty-five days of the journey. These fast passages, heralded by the British as records, were real races with picked crews and every incentive given to drive. Captain Enright of the *Chrysolite*, probably the best of all British masters of his day (who later made a great record with big American-built clippers in the British-Australian Black Ball packet service), wrote in his personal log during the run to Anjer: "I remained on deck night and day in a bamboo chair, made fast to the skylight. I nodded occasionally, but only when I dared allow myself a few moments rest from my ceaseless watching of the wind and course." Capt. Charles A. Ranlett, sailing his first round voyage on the American clipper *Surprise* bound for London (as was the *Stornoway*), had a very ordinary crew, and leaving Hong Kong ten days after the British clipper, he sailed an average passage in anything but favorable weather and beat the British clipper by from two to three days on the run to Deal or the Downs.

Upon arrival of the American clipper *Nightingale* in China from Australia in 1852, she was sent up the coast to load tea at Shanghai for London and there found the new British clipper *Challenger*, while the American clippers *Challenge* and *Surprise* and the British clippers *Stornoway* and *Chrysolite* loaded at Whampoa (Hong Kong). The season was bad for the long passage from Shanghai down the China Sea, especially for a ship of over 1,000 tons, and although the *Nightingale* sailed only a few days later than the other ships, she took the excessively long time of 61 days to get from Shanghai to clear of Sunda Straits—a distance which the *Swordfish*, under a favorable monsoon in December 1859, covered in 10 days (the *Golden Gate*, in November 1854, ran from Shanghai to Batavia in 9½ days). The *Challenger* (699 tons) sailed four days before the *Nightingale* (1,066 tons) and had a great advantage and all the luck (coupled with the greater experience of her commander in the China Sea) in the run down the coast to the Straits, but once the Indian Ocean was reached the *Nightingale* outsailed all the British clippers and made a passage of only 71 days from Anjer to London and a run of only 39 days from the Cape of Good Hope to Deal. This part of the China-to-London 1852 tea passage negotiated by the *Nightingale* was so impressive that the British historian Lubbock refers to it in THE CHINA CLIPPERS by saying: "The *Nightingale* came home from Shanghai in 110 days, this

being the best passage [1852] from that port”—a statement that would seem to be incorrect. Yet Carl C. Cutler, in *GREYHOUNDS OF THE SEA*, says: “The *Nightingale* left Shanghai four days after the *Challenger* and arrived at Deal on November 18th, the day before the *Challenger* entered in at London.” It is evident that the American clipper made a great deep-sea run from the Straits of Sunda to Deal, reported by the British as both 71 and 72 days, but it would seem that she could not possibly have overcome the tremendous lead, said to have been “of between two and three weeks,” which the British ship enjoyed leaving Anjer or Java Head. However, she beat every British and American ship in the ocean passage from the Straits of Sunda to England except the big American clipper *Challenge*. Following the arrival of the *Nightingale* at London, Sampson & Tappan, the Boston owners of the fast and yacht-like American clipper, publicly offered to match their ship for £10,000 a side against any sailing vessel in a race to China and back—but there were no takers.

The *Nightingale* was highly thought of by the British, who chartered her for a round voyage from London to China, and she went out to Shanghai in 112 days (80 days to Anjer) according to British records, beating all her competition on the passage except the big American clipper *Challenge*, which registered 2,006 tons, or almost twice the 1,066 tons of the *Nightingale*. The New York *HERALD* of July 10, 1853, quoting from the abstract log of Capt. Samuel W. Mather of the *Nightingale*, says that this ship actually sailed from Portsmouth, England, on February 10, 1853, and passed Anjer on April 23, in 72 days, which was reported as a record at that time.

In 1853 several American clippers did some good sailing in the China-to-Britain trade, but British historians tell us that the British clipper *Cairngorm*, on her first voyage, loaded tea in Shanghai and made a run home of 110 days, this being “the best homeward passage of the year from that port.” We are also told that the British *Challenger* arrived in London (presumably at Deal) on December 3, 1853, 110 days out from China, “having handsomely beaten the American clippers *Nightingale* and *John Bertram* and won £4,000 in stakes.” The *Challenger* could not possibly have bet with and raced the *John Bertram* on a passage to England in 1853, for that ship did not engage in the China-to-Britain tea trade that year, but ran from Canton to New York and made this passage in 91 days, or in nineteen days less time than the claimed passage of “the victorious *Challenger*” to London, Deal, or the Downs. The *Nightingale*, which did sail to Britain, ran from Shanghai to London and beat the *Challenger* by two days on the passage. Lubbock, after claiming, through error, victories for the British *Cairngorm* and *Challenger* to which they were not entitled, says:

The Americans, however, were revenged by the little Baltimore wonder *Architect*, which arrived at the Downs from Whampoa 107 days out, and had sold her cargo before the arrival of the first Britisher from that port, amongst the vanquished being the *Chrysolite* and *Stornoway* and such noted fast ships as the *Hero of the Nile*. This performance gained *Architect* £2 per ton extra freight on her next tea passage.

It is evident that not one or a few but all the sailing honors and speed records in the 1853 China-to-Britain trade went to the Americans, as the following record of six American passages made that year in that trade, all under 110 days, clearly shows; all the dates of departure and arrival have been checked with British records as well as ship’s logs, etc.

| Name of Clipper | Captain | Ton-nage | Year Built | Departure | | Arrival | | Length of Passage in Days |
|-----------------|------------------|----------|------------|-----------|---------|----------------|---------------|-------------------------------|
| | | | | Port | Date | Point | Date | |
| | | | | | 1853 | | | |
| ARCHITECT | George A. Potter | 520 | 1848 | Whampoa | June 25 | Downs (London) | Oct. 10, 1853 | 107 days (80 days from Anjer) |
| CELESTIAL | B. G. Palmer | 860 | 1850 | Foochow | Oct. 27 | London | Jan. 31, 1854 | Reported as 96 days |

(Reported at Foochow Nov. 4; if correct, passage must have been made in 88 days or less.)

(Continued on next page)

| Name of Clipper | Captain | Ton-nage | Year Built | Departure | | Arrival | | Length of Passage in Days |
|-----------------|-------------------|----------|------------|--|---|------------------|------------------|---|
| | | | | Port | Date | Point | Date | |
| GOLDEN STATE | L. F. Doty | 1,363 | 1852 | Woosung (Reported at Shanghai Oct. 24.) | 1853 Nov. 7 | Deal (London) | Feb. 9, 1854 | Reported 94 days from Woosung and 82 days from Anjer |
| | | | | | (Arrived London dock Feb. 13, being held up by pilots.) | | | |
| TYPHOON | Charles H. Salter | 1,611 | 1851 | Shanghai (Was at Anjer Nov. 24 and at London dock Feb. 21.) | Nov. 4 | Deal (London) | Feb. 16, 1854 | 104 days (also reported at Downs Feb. 18 after a passage of 106 days) |
| | | | | | (At dock, London, Feb. 23.) | | | |
| FLYING CHILDERS | Jeremiah D. White | 1,125 | 1852 | Whampoa (Passed Anjer Dec. 1 and 81 days from Anjer to Deal.) | Nov. 10 | Deal (London) | Feb. 20, 1854 | 102 days from Whampoa |
| | | | | | | | | |
| JENNETTE (bark) | Thomas Mix | 247½ | 1847 | Shanghai Hong Kong | Dec. 15 | London | Apr. 3, 1854 | 109 days from Shanghai; 103 days from Hong Kong |
| | | | | | Dec. 21 | | | |

In addition to the above 1853 China-to-England tea passages and that of the *Nightingale* in 112 days from Shanghai (August 8) and Anjer (September 11) to London (November 28), with a deep-sea run of 78 days from Anjer, the American clipper *Mystery* (1,155 tons), on her maiden voyage, made a passage in the British China tea trade. She loaded at Shanghai and left Woosung November 18, 1853, for London, arriving at Deal March 14, 1854, after a run of 116 days. Upon arrival at London, the *Mystery* was sold to the British for their Indian trade. Two small American ships sailed from China ports for London in December and beat all competitors except the fast little American bark *Jennette*. The *Argonaut* of 575 tons (built in 1849), under Capt. Nathaniel Hale, left Shanghai December 1, 1853, was at Hong Kong December 8, and reached London April 3, 1854, 116 days from Hong Kong. The *Resolute* of 786 tons (launched in New York on January 15, 1853), on her maiden voyage, left Whampoa on December 8, 1853, and was at London April 3, 1854, after a passage of 116 days and a dead-heat race with the *Argonaut* over the course. Early in the year, the American ship *Samuel Appleton* of 780 tons (Captain Doane), built at Medford, Mass., in 1849 (and not a clipper), ran from Shanghai (February 9) to London (May 31) in 111 days and called at St. Helena (April 22) en route. Two other fine American clippers that sailed from Chinese ports to Britain in 1853 had bad luck. The peerless *Challenge* of 2,007 tons, the fastest vessel in the trade and still under the command of a temporary captain (Mate Pitts), met bad weather in the Atlantic and put into the Azores leaking badly. The *Racer* of 1,669 tons sailed from Shanghai June 11 against a strong monsoon, did not reach Anjer until August 31, 50 days out, and then experienced most unfavorable weather in the Indian Ocean and the Atlantic Ocean; she was off Scilly on December 2, 1853, 93 days from Anjer, and then was further delayed by adverse winds, taking six days to reach Deal and four more to get to the dock in London. However, notwithstanding her slow time on this passage due to encountering "unprecedented adverse sailing conditions," the *Racer* had established a reputation as a fast sailer and good sea boat, and upon her belated arrival in England, her agents negotiated one of the most profitable charters ever recorded in Europe.

After the sailing performances of American and British ships in the 1853 China-to-England trade had been studied and digested, British publicists for a while ceased to write about races between British and American ships, and what races, imaginative or real, they did comment upon were generally between competitive British vessels. Lubbock says, however: "The chief international race of 1854 was that between the *Chrysolite* and *Celestial*. The former sailed from Foochow and the latter from Whampoa on 14th July and *Chrysolite*

arrived at Deal 108 days out, one day ahead of her rival." This is evidently another of the many claimed British clipper ship victories over American vessels that is imaginative and untrue. There is no authenticated record that the *Celestial* engaged in the British tea trade in 1854. She was reported as being at both London and Liverpool in February of that year; but while the *Celestial* was not reported at Whampoa in July, there is a record showing that the American clipper *David Brown* of 1,717 tons (Capt. George S. Brewster) left Shanghai July 11, 1854, passed Anjer August 18, and made a passage of 109 days from Shanghai to Deal (London), where she arrived October 28 after a splendid fast passage of 69 days from Anjer to Deal. This beat the performance of all other vessels—American and British—in this trade during the year by many days (and when the *David Brown* did this fast sailing, her copper was torn and cutwater twisted from being aground). If the *Chrysolite*, as stated by the British, left Foochow (a port several hundred miles nearer Anjer and England than Shanghai) on July 14, or three days after the *David Brown* cleared the China port farther up the coast, then the *Chrysolite*, taking full advantage of her smaller size and draft, got to Anjer well ahead of the bigger American ship (with a less experienced China Sea navigator aboard); but once clear of the Sunda Straits, the American clipper rapidly gained on the little British ship, which, unlike the *David Brown* and practically all other American clippers of the fifties, had been planned and dimensioned solely for the China trade. The best passages made in the China-to-England trade in 1854 were as follows:

| Name of Clipper | Captain | Ton-nage | Year Built | Departure | | Arrival | | Length of Passage in Days |
|---------------------|--------------------|----------|------------|---------------------|--------------------|----------------------|---|--|
| | | | | Port | Date | Point | Date | |
| 1854 | | | | | | | | |
| FLYING DUTCH-MAN | Ashbel Hubbard | 1,257 | 1852 | Canton Macao | Feb. 12 | Gravesend London | May 24 | 101 days |
| | | | | | Feb. 15 | | May 25 (1854) | 102 days (98 days from Macao to Gravesend) |
| | | | | | (at Anjer Mar. 3) | | | |
| ROMANCE OF THE SEAS | Philip Dumaresq | 1,782 | 1853 | Whampoa (Hong Kong) | June 9 | London | Sept 21, 1854 | 104 days to London dock |
| | | | | | (at Anjer July 2) | | Reported as 102 days Hong Kong to London (Deal) and 79 days from Anjer. | |
| DAVID BROWN | George S. Brewster | 1,717 | 1853 | Shanghai | July 11 | Deal (London) | Oct. 28, 1854 | 109 days to Deal; 111 days to London dock |
| | | | | | (at Anjer Aug. 18) | | Reported 71 days Anjer to London; 69 days to Deal. | |
| GOLDEN GATE | Samuel F. Dewing | 1,349 | 1851 | Shanghai | Nov. 25 | Beachy Head (London) | Feb. 23, 1855 | 86 sailing days (Shanghai to England) |

On Dec. 4, run into by bark HOMER, and head gear carried away. Put into Batavia for repairs. An all-time sailing record.

The *Golden Gate* reported beating the American clipper *Surprise* when she raced her in the China Sea and, sailing with a favorable monsoon, reported making 380 miles from noon to noon on the day that the *Surprise* was overtaken and passed. It was also said that on this record-making passage of 86 sailing days from Shanghai to London, the American clipper beat the crack British tea clippers *Spirit of the Age* (878 tons; built in 1854) and *Northfleet* (896 tons; built in 1853) and the fast British sailing ship *Lady Hotchkiss*, which had also been built for the Chinese trade.

The Donald McKay-built *Romance of the Seas*, which had been racing the *David Brown* (built in New York) from New York to San Francisco and thence across the Pacific to Hong Kong, where they arrived only an hour apart, made 4,172 nautical miles in sixteen consecutive days, on seven of which she averaged 307 miles per day, on the final leg of her voyage from Whampoa to London. The *David Brown*, failing to secure a full profitable cargo with quick dispatch at Hong Kong, sailed up the China coast to Shanghai, where she

loaded and made a splendid passage of 111 days over the longer course to England, with a deep-sea run from Anjer to the dock in London of only 72 days; whereas the *Romance of the Seas* (her rival) took 79 days, or one week longer, over this part of the course. The Maine-built clipper *Snow Squall* of 742 tons was reported by the British as arriving in London May 5, 1854, after a passage of 119 days from Shanghai, but the little ship's log (Captain Bursley) recorded the run as "110 days from Shanghai to London." She also made a passage from Shanghai to New York of 97 days in 1852-1853. The little Baltimore clipper *Architect* of 520 tons (built in 1847-1848), more highly considered in Britain than in the United States, was sold at Hong Kong in June 1854 to the British for \$23,000 and sailed from that port on July 9 for London under the British flag; her passage of 113 days and her sea run of 78 days from Anjer, whereas several days slower than that of the *David Brown*, which sailed over the course at the same time, was said by her British owners to be faster than the run of any British ship and any vessel of her size and type. The *Onward* of 874 tons, a medium clipper built at Medford, Mass., in 1852 (Captain Wade), on her second voyage, reached London in August 1854 from Shanghai, making a run of 89 days from Anjer. The *Lightfoot*, a big East Boston-built clipper of 1,996 tons, on a passage from Whampoa to London in 1854, experienced all kinds of weather, some most unfavorable and some to her liking. Leaving Whampoa August 7 against an adverse monsoon, she was 40 days beating down the China Sea to the Straits of Sunda; but clearing Java Head on September 15, she did some splendid sailing on the deep-sea Indian Ocean run to the Cape of Good Hope, covering this part of the course in only 26½ days. She took her pilot December 2, 1854, 78 days from Java Head, and was at London December 5, 120 days from Whampoa.

The American clipper *Panama* of 1,139 tons (built at New York in 1853), which has to her credit a passage of 85½ days from Shanghai and 67 days from Anjer to New York and another of 87 days from Foochow to New York, left Liverpool May 27, 1854, and had a passage of 107 days to Shanghai. The *Flying Childers* of 1,125 tons, built in 1852 by Samuel Hall, East Boston, left London October 24, 1854, and arrived at Hong Kong after a passage out of 117 days; returning, she ran from Shanghai to New York in 107 days. The Webb-built *Comet* of 1,836 tons, one of the fastest sailing vessels ever constructed, made the record passage from Liverpool to China in 1854. Leaving the Lancashire port deep laden on June 17, she was at Hong Kong on September 9 and made a passage of 83 days 21 hours, pilot to pilot, and 84 days 16 hours, anchor to anchor. Her best day's run was 350 miles, and it was reported that she actually took her pilot aboard on September 7, which was 82 days out from Liverpool. Returning, the *Comet* sailed from Hong Kong to Batavia in only 7 days and thence ran to Bremen in 91 days.

In the year 1855, American ships dominated the China-to-England trade and, because of competitive conditions and the antagonistic attitude of the British, decided thereafter that the trade was undesirable and unprofitable, even though ships were in great need of cargoes and floating tonnage was plentiful (with a volume in excess of the product to be shipped) and freight rates low. The outstanding passage in the British China tea trade in 1855 was a brilliant run of the American clipper *Nightingale*, which, under the command of Capt. Samuel W. Mather, left Shanghai on the afternoon of February 16 and received a pilot off Beachy Head, England, at 11:00 A.M. on May 18, 1855, or the 91st day. Basil Lubbock, the British historian, writes:

Nightingale was the last of the American clipper ships to distinguish herself in the English tea trade. In 1855 she ran to London from Shanghai in 91 days, her best run being 336 miles. From this date the Americans, who two or three years back were

a common sight in the London docks, gradually fell out of the English trade, and America Square near the Minories, which had been the headquarters of their skippers, slowly grew deserted.

The time given of 91 days checks with an American record which says that Captain Mather, after taking the *Nightingale* from New York to Melbourne in 75 days (best day,

365 miles), proceeded in ballast to Whampoa, took a cargo (mostly sugar) and passengers up the coast to Shanghai, whence she loaded tea for London and made a passage of 91 days and a run of only 70 days from Batavia Roads. The following year, the *Nightingale* ran from Shanghai to New York in 88 days. The *Nightingale*, like most other high-class and sizable American clippers (particularly those experienced in the trade), was not attracted to the British China tea trade or the carrying of any other kind of cargo between China and British ports after 1855.

In addition to the fast 91-day run of the *Nightingale* from Shanghai to London in 1855 before mentioned, several American clippers made relatively fast runs from China to England during the year, considering the generally prevailing unfavorable sailing conditions. The *Flying Dutchman* (1,257 tons), built in 1852 by Webb, New York, which in 1854 ran from Canton to London in 101 days, was reported to have made a brilliant passage of 93 days from Shanghai to London in 1855. She was reported leaving Shanghai October 8, passing Anjer October 31, and arriving at Deal (London) January 9, 1856, with a fast deep-sea run of 70 days from Anjer. The owners received a report: "Arrived at London January 9 after a good passage of 93 days"; but other British records report an arrival on January 24, which would make the passage 108 days—fast enough to beat decisively all contestants sailing anywhere near her with the exception of the American clipper *Kingfisher*.

The medium clipper *Don Quixote* of 1,429 tons, built in 1853 (Capt. William Nott), left Foochow July 24 and arrived at London November 7, 1855, after a passage of 106 days. In making this run, she led the fleet of both American and British ships from China to London in a poor season for sailing. The *Neptune's Favorite* of 1,347 tons, another American medium clipper (built at Chelsea, Mass., in 1854), sailed from Woosung (Shanghai) July 5 and reached Deal (London) on October 25, 1855, after a passage of 112 days, during which she outsailed all her competitors including the *Sovereign of the Seas*, the *Sweepstakes*, and the boastful British tea clipper *Chrysolite*, which she beat by over two weeks over the same course. The *Nabob*, a medium clipper of 1,246 tons built at Chelsea, Mass., and launched in January 1854, on the return lap of a British-Australian voyage, reported making the run from Shanghai to London in 114 days (but a British record says that she took much longer). The *Spitfire* of 1,549 tons, built at Frankfort, Maine, in 1853, sailed from Foochow July 24, 1855, in the poorest season of the year and, notwithstanding a long run down the China Sea, reported her "whole passage to London in 120 days." This must have been "days on course at sea," for she was reported at St. Helena October 8, Plymouth November 28, and at London dock December 4. In the spring of 1857, the *Spitfire* ran from London to Hong Kong in 110 days, arriving at the Chinese port May 3.

Two good China-to-England passages were made by the American clippers *Neptune's Car* and *Kingfisher*, which left Chinese ports, deep laden, in the fall of 1855 and were reported at London in January 1856. The record of these runs is as follows:

| Name of Clipper | Captain | Ton-nage | Year Built | Departure | | Arrival at London | Length of Passage in Days |
|-----------------|------------------|----------|------------|-----------|-----------------------------|-------------------|--|
| | | | | Port | Date | | |
| NEPTUNE'S CAR | Joshua A. Patten | 1,616 | 1853 | Foochow | 1855 | 1856 | 115 days (81 days from Anjer) |
| | | | | | Sept. 29 (Anjer, Nov. 2) | Jan. 22 | |
| KINGFISHER | Zenas Crosby | 1,286 | 1853 | Macao | Oct. 20 (Anjer, Nov. 7) | Jan. 24 (Deal) | 96 days (78 days from Anjer; reported to dock at London, 100 days) |

Earlier in the year, the American clipper *Rapid* of 1,115 tons (launched in New York on December 20, 1852), under command of Captain Corning, made a good run of 108 days from Shanghai (March 15) to London (Deal), where she was reported as arriving July 1, 1855. The *Rapid* cleared Java Head April 3 and ran to the Cape of Good Hope in 27 days.

The McKay Boston-built *Stag Hound* of 1,534 tons (launched December 1850), which ran from Whampoa in 94 days in 1851, 95 days in 1852, and 89 days in 1853-1854, all to New York, on her fourth voyage loaded at Shanghai in April 1855 and sailed for London. She cleared Java Head on May 29 after encountering very unfavorable sailing conditions in the China Seas (50 days to Anjer); she then did some good sailing in the Indian Ocean, going to the Cape in 30½ days, and arrived at Deal (London) August 27, 1855, 141 days from Shanghai and 91 days from Anjer. (The *Stag Hound* was reported at the London dock on August 28—91 days from Java Head.) The big and fast New York-built clipper *Sweepstakes* of 1,735 tons (launched June 1853), on her first voyage, ran from Hong Kong to New York in 110 days and 76 days from Anjer. On her second voyage, she loaded at Shanghai for London, sailing June 2, 1855; she was 38 days beating down the China Sea to Anjer and 85 days thence to London, completing a passage from Shanghai of 123 days. The last sailing of an American clipper from China in 1855 destined for a British port was that of the *Swallow*, a Boston-built ship of 1,435 tons, with Capt. Benjamin W. Tucker in command. After a fast run of 74¾ days from Deal to Melbourne, on which she beat all competition, she went from Australia to Shanghai via Bombay and loaded for London. Leaving Shanghai November 9, 1855, she met with unfavorable sailing conditions; she was at the Scilly Islands 126 days out and at Deal (London) on March 21, 1856, 133 days out from Shanghai. The big Donald McKay clipper *Romance of the Seas* of 1,782 tons (Captain Henry) left Shanghai eight days before the *Swallow*, went to Anjer in 28 days, was 40 days from there to the Cape of Good Hope, and reached Deal (London) March 7, 1856, 127 days out, after a passage reported by Capt. William W. Henry as "126 days with light winds all the way." Running out from London to Hong Kong on the first part of her England-China round voyage, the "*Romance*" made a good run of 99 days from Deal (London) to Hong Kong and outsailed all the vessels making the passage about that time to a China or East Indian port.

A record run between an English and a Chinese port and a round voyage record run between North Atlantic and Chinese ports were made by the American clipper *Eagle Wing* of 1,174 tons (built at Medford, Mass., in 1853). Under command of Capt. Eben H. Linnell, the *Eagle Wing* left the Downs (London) at 8:00 A.M., dropped her pilot at 9:30 A.M. on April 17, 1855, and arrived at Hong Kong on July 10 after being anchored inside the Ladrões, becalmed, the night of July 9. The length of the passage, as per log, from pilot to pilot was 83 days 12 hours and from anchor to anchor at destination, or port to port, 84 days 22 hours. The *Eagle Wing*, after discharging, went up the China coast to load at Shanghai for New York and made a passage home over the longer course of only 86 days. The round voyage, London to Hong Kong out and the longer distance of Shanghai to New York home, was made in only 169½ days.

Lubbock, who in his writings persistently and erroneously refers to American ships as "softwood" vessels and British ships as durable "hardwood" vessels, in *THE CHINA CLIPPERS* says that when after the 1855 China-Britain tea passages American ships pulled out of the trade (and had entirely abandoned it at the end of the fifties), the careers of the early British clippers *Stornoway* and *Chrysolite* (built in 1850 and 1851) "were about over" because of "water-soaked hulls" and hard driving. He adds: "Meanwhile new [British] clippers kept coming out, which stayed in the front of the battle for a few seasons and then dropped into the ranks of the has-beens." Lubbock's criticism of the durability of American ships and his comments on "softwood" construction are positively not based on fact, but would more aptly apply to the longevity and short deep-sea service of British-built wood ships, but not to British composite ships, which, with iron framing and teak planking, lasted well. However, no British wood, composite, or iron ship ever withstood the severe driving service of the Cape Horn route or of the North Atlantic packet lines for over thirty years as did United States-built wood ships—referred to slightly as "softwood ships," but, nevertheless, constructed of American hardwoods.

It is generally said that "the British China tea races commenced in 1856," and the Americans were never interested in these "races" as such; for the China trade was a mere incident or leg on an around-the-world Cape Horn California voyage. American clippers could not economically plan to be on hand at a China port waiting for early teas to be delivered to them to rush to England for the market. The year 1856 is notable as being the first year in which a premium on the freight (£1 per ton) was offered for "the first tea ship to arrive at the London docks." There were no outstandingly fast American clippers sailing for England from China in the spring or early summer and racing against British tea clippers for the market, and it appears that of the British contestants, the little British ship *Vision* (563 tons), from Whampoa to Liverpool, was the first ship home and that the tea clipper *Cairngorm* (938 tons) was second.

The British boasted of a record for a round voyage when the *Vision* (built by Hall, of Aberdeen, in 1854 for James Beazley & Company), on her maiden voyage from Liverpool to Hong Kong and return, reported having been only 6 months and 16 days under canvas at sea and on her course. However, this is far from a record for a round voyage from a North Atlantic port to China and back, for on October 1, 1845, the American early clipper *Rainbow* of 752 tons sailed from New York for Canton (Hong Kong), made a passage out in 99 days, was 14 days in Chinese waters discharging and taking cargo aboard, etc., and made a run back to New York in 84 days, arriving home April 18, 1846. This round voyage of the *Rainbow* (which was her second) between New York and Hong Kong occupied 197 days (6 months and 15 days) all told, but the total time spent under canvas on the outbound and homeward passages was only 183 days, or one-half month less than the "record time" of the British tea clipper *Vision*, which, incidentally, took less time to discharge and take on cargo than the *Rainbow*, as she carried much less cargo than the American ship. The *Rainbow's* record time for a round voyage between a North Atlantic and Chinese port was due in a large measure to the quick dispatch and short detention period at Hong Kong. Her total sailing time of 183 days is not the record for the period under canvas required for the combined outward and homeward passages; for the American ship *Houqua* of 583 tons, on her first voyage in 1844, went from New York to Hong Kong in 84 days and returned in 90 days—a total of 174 days at sea. On her second voyage between the same ports, the *Houqua* went out in 91 days and returned in 87 days—a total of 178 days at sea. The *Sea Witch* (908 tons; built in 1846), on her second voyage, traversed the same course out and back in 182 days, but the *Oriental* of 1,003 tons (built in 1849) went from Hong Kong to New York and return in 1850 in only 162 days, making a passage from Whampoa to New York (January 20-April 21) in 81 days and returning from New York to Whampoa (Hong Kong) in the same time of 81 days (May 18-August 8). In making this run, she established an all-time world's sailing record between any North Atlantic and China ports. There were many American pre-clipper and early clipper round voyages between the United States and China which beat most decisively the so-called record sailing performance of the British tea clipper *Vision* in the China trade.

The only real race of the 1856 British China tea season was between the British tea clippers *Lord of the Isles* (770 tons) and *Chrysolite* (471 tons) and the 600-ton American bark *Maury* of fuller model, built at New York in 1855 as "a small fast sailer that could be operated economically." In 1856 the barkentine *Fairy* of 629 tons was built by Roosevelt & Joyce, New York, for the China trade. The *Fairy* made two spectacular passages in the British China tea trade. Her owner was Gordon, Talbot & Company, New York, and she is rated as having a clipper model by Carl C. Cutler in GREYHOUNDS OF THE SEA, but neither Cutler nor Howe and Matthews (in their AMERICAN CLIPPER SHIPS, 1833-1858) consider the fast American bark *Maury* as eligible for that designation. Arthur H. Clark, in THE CLIPPER SHIP ERA (written in 1910), does not include the *Maury* in a list of United States clippers built in 1850-1857, but he does refer to her as "an exceedingly pretty barque of about 600 tons built by Roosevelt & Joyce and owned by A. A. Low & Bro." and adds,

"She was a very similar vessel to the barques *Fairy*, *Penguin*, and *Benefactor*, by the same builders, all engaged in the China trade." Clark, however, when he refers to the *Maury's* sailing victory over Britain's fastest tea clippers of that day, speaks of her as an "American clipper barque," and the record of the little *Maury* (named after "the Pathfinder of the Seas") shows that if she did not technically qualify in sharpness of model and spread of canvas for the designation "clipper," she certainly was speedier than many American clippers and a better sea boat and faster sailer than Britain's best modern clippers.

On June 13, 1856, the *Maury*, under the command of Capt. Charles Fletcher, sailed from Foochow. She cleared that Chinese tea port four days after the British crack clipper *Lord of the Isles* had sailed, and both ships arrived at the Downs the same day, October 15, the *Maury* 124 days out and the *Lord of the Isles* 128 days. British historians admit that off Gravesend, where they waited for tugs to take them to the city, the *Maury* "was leading by 10 minutes but coming up the river Captain Maxton [of the *Lord of the Isles*] had the smartest tug, and thus managed to dock first and win the premium" for the tea shipment from Foochow—even though she had been admittedly beaten on the run home by four days. This premium of £1 per ton on the tea carried had been offered for the first ship home during the season. The reward was offered without regard to the length of the passage and was intended to expedite unloading and loading and reduce detention at the Chinese port. It would seem that, assuming that the stevedores at Foochow did not earn part of the premium by discrimination, the bonus, if not given the *Maury*, should have been paid to the captain of the tug that caused the *Lord of the Isles* to beat the *Maury* at the end of a topline when she could not do it under canvas. But the bark *Maury* won more honors on this same homeward passage in the British China tea trade. The British tea clipper *Chrysolite* (Captain McLeland) left Whampoa (a much closer port to Britain) on June 9, 1856, four days before the *Maury* left Foochow, but required 144 days to get home, or twenty days more than the *Maury* took on the much longer course. The American clipper ship *John Wade* of 638 tons (built at Medford, Mass., in 1851) raced with the *Maury* on this same exciting and highly competitive tea passage to London. The records show that the "*Wade*," under the command of Captain Harding, left Foochow June 10, 1856, and was at Deal on November 20 and London on November 22 after a long passage of 163 days, on which she was severely trounced by an American bark not deemed sharp enough by many authorities to be rated as a clipper. It appears that Captain Harding drove the mainmast out of the *John Wade* in heavy weather off the Cape of Good Hope, and she "limped into London under jury rig." The poor showing made on this passage of the *John Wade* was due to bad luck, and the little medium clipper, in a measure, retrieved herself by a good return passage of only 99 days from London to Hong Kong, made under fair sailing conditions.

The British record of the 1856 race between the American bark *Maury* and two of the best British full ship-rigged China tea clippers is set forth comparatively herewith:

| Name of Vessel | Rig | Flag | Ton-nage | Departure | | Arrival | | Passage in Days |
|-------------------|------|----------|----------|-----------|----------------|----------------|-----------------|-----------------|
| | | | | Port | Date | Point | Date | |
| LORD OF THE ISLES | Ship | British | 770 | Foochow | 1856 June 9 | Downs (London) | 1856 Oct. 15 | 128 |
| CHRYSOLITE | Ship | British | 471 | Whampoa | June 9 | Downs (London) | Nov. 1 | 144 |
| MAURY | Bark | U. S. A. | 600 | Foochow | June 13 | Downs (London) | Oct. 15 | 124 |

The American bark *Maury* beat Britain's crack tea clipper by four days in sailing between the same ports and defeated the *Chrysolite* by twenty days notwithstanding that this Aberdeen clipper, very boastful of her speed and of claimed records in sailing, had the advantage

of a much shorter course, as she cleared from Whampoa (Hong Kong) and not from Foochow, which was well up the China coast and several days of extra sailing. In the China trade, some very fast passages were made by ships that at no time showed any high spurt speed or a day's run even approaching 300 miles. On this 1856 passage of the *Maury*, the total time occupied making the run was not fast because of both head winds and calms, but the little bark on one passage proved that she had not only a clipper but also an "out-and-out" clipper model by reeling off 370 miles in one day (about a record for that course). Crossing the Indian Ocean, for twelve consecutive days, she averaged a strong 272 nautical miles per day. The American clipper *Ringleader* of 1,154 tons (Capt. Richard Matthews), built at Medford, Mass., in 1853, loaded at Foochow and sailed on June 17, 1856, four days after the American bark *Maury* left port. She had a tedious run beating against an adverse monsoon down the China Sea and was 53 days to the Straits of Sunda, clearing them August 9. The *Ringleader* reached Gravesend on October 31, 136 days out and 83 days from Java Head, and was at London the next day, although one British report said that she was at Deal October 30, but did not reach the London discharging dock until November 4, 1856.

The British tea clipper *Challenger* (699 tons), which boasted of an average of 110 days for eight passages from Shanghai to England (shortest run, 105 days), left Shanghai, according to British records, on September 8, 1856, and was reported at a Channel point on January 15, 1857, 129 days out. The nearest American sailings were those of the full-modeled ship *Lorenzo*, which sailed from Canton August 10, 1856, and was at the Downs (London) on November 28 after a passage of 110 days, and of the clipper *Kingfisher* (1,286 tons), which cleared Foochow on October 4, 1856, was at Anjer November 1, and docked at London on January 21, 1857, completing a passage of 109 days and 81 days from Anjer (107 and 79 days, respectively, to Deal). The American full-modeled bark *Arctic* left Canton for Liverpool in October 1856, and the only clipper sailing from a Chinese port to England following that of the *Kingfisher* from Foochow was that of the medium clipper *Bonita* (1,127 tons), which, notwithstanding her rather full model, cleared Shanghai on November 30 and was at London March 15, 1857, after a passage of 105 days. Early in 1856, the United States medium clipper *Galatea* (1,041 tons), built in 1854, is credited in British records with leaving Canton February 5, arriving at Deal on May 17 after a passage of 102 days and 86 days from Anjer, and beating the British clipper *Challenger*, which sailed before her, by seven days. Other British records say that the *Galatea* discharged at Liverpool in May 1856 and that her passage from Whampoa occupied 104 days.

It has been claimed that the British tea clipper *Spirit of the Age* (878 tons) left Whampoa August 20, that the *Fiery Cross* (788 tons) sailed from Foochow September 4, 1856, and that both ships experienced excellent sailing conditions and reached some point in the English Channel after passages of 100 days each; details are not available, but no American clipper ship sailed anywhere near them over the course.

In the fall of 1855, the New Jersey-built clipper *Hurricane* of 1,608 tons had established a record between Britain and India with a passage of 82 days from the Needles to the mouth of the Hooghly River (Calcutta), and the following year—still under British charter—she again sailed from London and arrived at Hong Kong October 5, 1856, after a passage of 103 days, during which she outsailed all competition. The *Swallow* of 1,435 tons, one of the best known and most popular of the American clipper fleet in England, sailed from London to Shanghai, deep laden, with what was reported as "a very heavy cargo," arriving out in September 1856 after an excellent passage of 111 days considering weather and all influencing conditions.

In January and February 1857, three American clippers sailed from Shanghai to London, making good passages considering the unfavorable sailing conditions encountered (particularly in the Atlantic and Indian Oceans) and outsailing all competitive ships. Following the sailing of the *Neptune's Favorite* on February 13, no large American clipper took a

cargo from China to Britain until the fall of the year. The three early American sailings of 1857 in the British China trade were:

| Name of Clipper | Tonnage | Year Built | Captain | Departure from Shanghai | At Anjer | Arrival at London | Passage in Days |
|--------------------|---------|------------|--------------------|-------------------------|----------|---|--|
| COMPETITOR | 871 | 1853 | Otis White | 1857 Jan. 9 | Feb. 5 | 1857 May 21 | 131 (105 days from Anjer) |
| SWALLOW | 1,435 | 1854 | Benjamin W. Tucker | Jan. 19 | Feb. 7 | Gravesend, May 4 Land's End, Apr. 29 | 105 (100 days to Land's End; 86 days Anjer to London) |
| NEPTUNE'S FAVORITE | 1,347 | 1854 | Oliver G. Lane | Feb. 13 | Mar. 6 | June 8 | 115 (94 days from Anjer) |

Returning in 1857 from London to the China coast in 130 days, the *Swallow* took coolies from Macao to Havana in 97 days.

In the British China "tea races" of 1857, the only American clippers that English records show as contestants were the little clipper bark *Maury* (which neither Cutler nor Howe and Matthews rate as a clipper) and the *Celestial* of 860 tons, built by W. H. Webb, New York, in 1850. (The American barkentine *Fairy* also participated in the run.) The British record of the "tea race" from Foochow and Hong Kong to London, with departures from China during the three-month period May, June, and July, is as follows:

| Name of Vessel | Rig | Flag | Departure | | Arrival at London | Passage in Days |
|-------------------------|------------|----------|-----------|----------------|--|-----------------|
| | | | From | Date | | |
| CREST OF THE WAVE MAURY | Ship | British | Foochow | 1857 May 25 | 1857 Sept. 28 | 126 |
| | Bark | U. S. A. | Foochow | July 3 | Off Dartmouth, Oct. 14 London, Oct. 17 | 103 106 |
| FAIRY | Barkentine | U. S. A. | Foochow | July 4 | Deal, Oct. 17 London, Oct. 19 | 105 107 |
| CAIRNGORM | Ship | British | Hong Kong | July 10 | Deal, Oct. 30 London, Nov. 1 | 112 114 |

The *Crest of the Wave* (924 tons) and *Cairngorm* (938 tons) were large British tea clippers, and for once the American so-called contestants were relatively small, being only about two-thirds the size of the British ships. Moreover, the little *Maury* was a bark of some 600 tons, and the *Fairy* (629 tons) had a surprising barkentine economy rig designed to operate with a small crew; both the British vessels were full-rigged ships. Lubbock says that the fastest run of the year from a China to an English port was made by the British tea clipper *Northfleet* (896 tons), which, he says, sailed from Hong Kong August 8, 1857, and was at Plymouth on October 29 after a passage to that point of 82 days; if correct, this would be a world's record. Lubbock evidently doubts the accuracy of the claim made and admits that the *Northfleet* did not pass Anjer until September 7, which would "give her 52 days from Sunda Strait home, which is manifestly impossible." The *Northfleet* actually reached London on December 8, 1857, after a passage of 122 days and 92 days (not 52 days) from Anjer; this was ten days longer than the passage of the British clipper *Cairngorm*, which originated from the same port of Hong Kong, and sixteen days longer than the run of the little American bark *Maury*, which was from Foochow, a port well up the China coast and about midway between Hong Kong and Shanghai. The British also include the American clipper *Celestial* as a contestant in a Shanghai-to-London tea race of 1857, and Lubbock says that the ships made a similar passage of 141 days, had poor winds, and sailed a close

but slow race. This record is false as far as the performance of the American clipper is concerned, and the passages made by three U.S.A. ships and five British tea clippers (eight ships all told) in the China British tea trade, with departures during August-December 1857 (excluding the 122-day passage of the *Northfleet*, sailing August 8 from Hong Kong, before mentioned) are set forth herewith based on British records:

| Name of Clipper | Ton-nage | Year Built | Flag | Departure | | Arrival | | Passage in Days |
|-------------------|----------|------------|---------|--------------|---------|-----------|------------------|----------------------|
| | | | | From | Date | Port | Date | |
| | | | | | 1857 | | | |
| CHALLENGER | 699 | 1852 | British | Shanghai | Aug. 5 | London | Dec. 1, 1857 | 118 |
| ROBIN HOOD | 852 | 1856 | British | Foochow | Aug. 6 | London | Nov. 30, 1857 | 116 |
| SPIRIT OF THE AGE | 878 | 1854 | British | Foochow | Aug. 8 | Liverpool | Dec. 1, 1857 | 115 |
| FIERY CROSS | 788 | 1855 | British | Foochow | Aug. 1 | Dartmouth | Nov. 11, 1857 | 112 (London, 116) |
| LORD OF THE ISLES | 770 | 1853 | British | Shanghai | Aug. 25 | London | Jan. 13, 1858 | 141 |
| CELESTIAL | 860 | 1850 | U.S.A. | Foochow | Oct. 5 | London | Jan. 11, 1858 | 98 |
| SPITFIRE | 1,549 | 1853 | U.S.A. | Foochow | Oct. 25 | Plymouth | Feb. 15, 1858 | 113 |
| NORTH WIND | 1,041 | 1853 | U.S.A. | Hong Kong | Dec. 19 | London | Mar. 25, 1858 | 96 |

The American clipper ship *Eagle* of 1,296 tons (built in 1851 at Williamsburg, N. Y.), following her arrival in England from the West Coast of South America in 1856, took a heavy cargo from London out to Shanghai, where she arrived November 15, 1856. In April 1857, the *Eagle* put into Manila to bury her captain and ran from there to London in 116 days, following which she made a passage out to Hong Kong in 115 days. All of these runs were reported as "good passages considering the sailing conditions" encountered.

The two American ships that participated in the British China trade in 1858 were not first-flight clippers; one was the New York bark *Snap Dragon* of 619 tons. Sailing from Whampoa in May, she ran to her unloading dock in London in 104 days, and the British tea clippers sailing nearest to her were the *Fiery Cross* from Foochow in June, with a passage reported as 115 days, and the *Chrysolite*, which left Foochow July 8 and reached London on November 26 after a run of 141 days. The second and last American sailing from China in the English tea trade during 1858 was that of the *Florence*, a rather full ship described as "a medium clipper and a big carrier that, with a registered tonnage of 1,045 tons, loaded 1,650 measurement tons." With Capt. Philip Dumaresq of the Kennebec River in command, the *Florence* loaded principally at Nagasaki (being the first United States merchant ship to appear at that Japanese port). She then put into Shanghai to fill her holds with general cargo and carried the first Japanese cargo (largely vegetable wax) to Britain. The *Florence*, therefore, was not engaged in the British China tea trade when she left Shanghai December 26, 1858, bound for London, and no tea clipper had sailed from any China port during December 1858 or the first months of 1859 for Britain. Notwithstanding her fullness of model and deep lading and light winds throughout the passage (best day's run, only 280 miles), the *Florence* made a good run to England; she ran from Shanghai to Java Head in 16 days, was off the Cape of Good Hope on her 44th day (which was very fast sailing), crossed the equator on the 68th day, and arrived at the Mother Bank 92 days from Shanghai. She was entered at London, following several annoying delays, after a passage, clearance to dock, of 99 days. Although the *Florence* had no tea clippers to sail against during this run and was not a regular sharp-modeled clipper, she had a driving Yankee skipper aboard who was making his last sea voyage. When 17 days out, Captain Dumaresq exchanged signals with the British ship *John Masterman*, Shanghai for London, 30 days out, and on the

Florence's 43rd day out, when nearing the Cape, she overtook the ship *Akbar*, a reputedly fast sailer that had left Shanghai twelve days before her.

The American clippers, it has been said, bid goodby to the British China tea trade in "a blaze of glory," for in the 1859 "tea race" to England, which started from Foochow in June, the New Hampshire-built clipper *Sea Serpent* of 1,337 tons (built by George Raynes), under the command of Capt. Jacob D. Whitmore, outsailed all four British contestants and beat them on the run by from four to seventeen days. The following is the British report of this race:

| Name of Clipper | Ton-nage | Year Built | Master | Sailed from Foochow | Date of Arrival | Length of Passage in Days |
|---|----------|------------|-----------|---------------------|-----------------|---------------------------|
| | | | | 1859 | 1859 | |
| FIERY CROSS | 788 | 1855 | Duncan | June 9 | Oct. 26 | 139 |
| ELLEN RODGER | 585 | 1858 | Keay | June 10 | Oct. 24 | 136 |
| CREST OF THE WAVE | 924 | 1853 | Steele | June 16 | Nov. 10 | 147 |
| ZIBA | 497 | 1858 | Tomlinson | June 19 | Oct. 31 | 134 |
| SEA SERPENT | 1,337 | 1850 | Whitmore | June 19 | Oct. 27 | 130 |
| (49 days to Anjer during height of adverse monsoon) | | | | | | |

The *Fiery Cross* had been built by Chaloner at Liverpool, the *Ellen Rodger* by the famous Steele, of Greenock on the Clyde, Scotland, the *Crest of the Wave*, a popular, fast British tea clipper, by Pile, of Sunderland, and the *Ziba* by Hall, of Aberdeen, builder of the pioneer British tea clippers *Stornoway* and *Chrysolite*. All the British clippers competing in the race were of the size favored by the British for the course, and whereas the American clipper was nine years old, the British clippers beaten by four and six days, respectively, by the Yankee were only a year old, these ships finishing second and third in the race.

Notwithstanding the boastfulness of British owners, masters, and the press, the China tea merchants made the *Sea Serpent* the favorite in the race, and the ship was paid £100 bonus by the shippers, with the agreement that she should receive 30 shillings per ton extra freight if she beat the *Crest of the Wave*, the largest and most favored of the British contestants, which she did most decisively by seventeen days on the passage. The little *Ziba*, which finished second in the race and sailed from Foochow in company with the American clipper, had an advantage in the China Sea and led the *Sea Serpent* in passing Anjer by six days, but the Yankee ship outsailed the British clipper by ten days in the Indian and Atlantic Oceans and beat her home by four days. Captain Tomlinson of the *Ziba* was more experienced and fortunate in making time in the fluky sailing of the China Seas, and a combination of having a little ship and a much better knowledge of the intricacies of the course gave him a great advantage over Captain Whitmore until the ships got onto the deep-sea part of the course, when the combination of the American ship and Yankee seamanship proved vastly superior to that of the British. That the *Sea Serpent*, which so decisively beat all her British competition in the China-to-England June-November historic tea race of 1859, was fast was well demonstrated in 1856, when this Yankee clipper ran from Whampoa to New York in only 79 days (69 days from Java Head and 39 days from the Cape of Good Hope), a sailing performance that has not been equaled since the American clipper *Sea Witch* arrived in New York on March 25, 1849, establishing an all-time record between a China and a North Atlantic port.

Another Yankee ship, the medium clipper *Charmer* of 1,055 tons, built at Newburyport, Mass., in 1854 "to carry well," sailed from Foochow under Capt. I. S. Lucas on June 28, 1859, and on her passage to Liverpool, where she was reported at the unloading dock November 11, it was said, "ran even with the best of the British clippers, anchor to anchor, and beat the *Crest of the Wave* by twelve days and the *Fiery Cross* by four days." The only other American sailing from China to England in June 1859 was that of the full-bodied

Grace Darling of 1,197 tons, described as a "medium clipper built for carrying big cargoes at a fair speed." This ship sailed from the northern China port of Shanghai on June 7, 1859, and was at her discharging dock at London on October 24, beating both of the crack British clippers *Fiery Cross* and *Crest of the Wave*—which traveled a shorter distance—the latter by over eight days.

Four American ships, only three of them clippers, made passages from China to England during 1859 in what was popularly known as "the favorable season." These ships and their passages, set forth comparatively, were as follows:

| Name of Vessel | Ton-nage | Year Built | Captain | Departure | | Arrival | | Passage in Days |
|---------------------------|---|------------|-----------|-------------------------|---------|-------------|---------------|---|
| | | | | From | Date | Port | Date | |
| 1859 | | | | | | | | |
| RINGLEADER (clipper) | 1,154 | 1853 | Matthews | Foochow | Feb. 24 | Deal | June 11 | 107 |
| | | | | | | London | June 13, 1859 | 109 |
| SULTAN (full-bodied ship) | A reputedly fast transient of moderate size | | Berry | Shanghai | Oct. 22 | London | Feb. 2, 1860 | 103 |
| FLORENCE (medium clipper) | 1,045 | 1856 | Wadsworth | Whampoa | Dec. 12 | London | Mar. 23, 1860 | 102 |
| | | | | (St. of Sunda, Dec. 24) | | | | (reported as 101½ days and 89½ days from Anjer) |
| ALBONI (medium clipper) | 917 | 1852 | Barnaby | Foochow | Dec. 24 | Start Point | Apr. 12 | 110 |
| | | | | | | London | Apr. 16, 1860 | 114 |
| | | | | (Anjer, Jan. 8, 1860) | | | | (95 days from Anjer to Start Point) |

It has been said that the British tea clippers *Robin Hood* and *Kate Carnie* "gave the American clipper *Sultan* a good race," but the *Sultan* was positively not a clipper ship. Neither was she rated in the United States as even a "medium" or "half" clipper nor considered particularly fast, although she is credited in early 1856—under favorable sailing conditions—with a Cape Horn westward passage from New York to San Francisco of 122 days. (At this time, mid-January to May, the *Phantom* went over the course in 101 days and the *David Brown* in 103 days.) There is given herewith a comparison of the China-to-England tea passages of the American full-modeled *Sultan* and the yacht-like British clippers *Robin Hood* of 852 tons (built in 1856 by Hall, of Aberdeen) and *Kate Carnie* of 576 tons (built in 1855 by Steele at Greenock solely for the China tea trade and primarily for speed, with but little regard for carrying capacity). It will be noticed that whereas the *Sultan* loaded at Shanghai, the two British clippers sailed from Whampoa (Hong Kong) and had an advantage of some 850 miles of sailing in the China Sea, which generally occupied about a week's time and sometimes far more, depending on the monsoons.

| Name of Ship | Flag | Departure | | Arrival | | Passage in Days |
|--------------|---------|-----------|---------|-----------------|---------|-----------------|
| | | From | Date | Port | Date | |
| 1859 | | | | | | |
| ROBIN HOOD | British | Whampoa | Oct. 1 | Off Start Point | Jan. 11 | 102 |
| | | | | London | Jan. 15 | 106 |
| SULTAN | U.S.A. | Shanghai | Oct. 22 | London | Feb. 2 | 103 |
| KATE CARNIE | British | Whampoa | Oct. 25 | Deal (London) | Feb. 8 | 106 |

The American clipper ship *Bald Eagle* of 1,705 tons, built in 1852 by Donald McKay, East Boston, left Boston September 21, 1857, was 109 days to Hong Kong, and remained trading in the China Seas until she loaded at Shanghai and sailed for England on August 6, 1859. The ship reached Anjer September 13 after a 38-day run down the China coast and was at Portsmouth, England, December 4, 1859, after a passage of 120 days and 82 days from Anjer. The British sharp-lined tea clippers *Challenger*, *Falcon*, and *Stormoway*, engaged

in a tea race from Woosung to London, all beat the *Bald Eagle* on her run, port to port, but the big Yankee clipper, with a foul bottom and a poor crew, beat the *Stornoway* on the deep-sea run from Java Head to the Downs; also the *Cairngorm* (which sailed from Hong Kong) over the entire course that was traversed by both ships.

In 1859, notwithstanding the less favorable sailing conditions in evidence than prevailed in the China trade in the late forties and the fact that "good passages were becoming increasingly rare," the all-time record from Shanghai to New York was made by the eight-year-old (Webb) New York-built clipper ship *Swordfish* (1,036 tons). Under the command of Capt. Joseph W. Crocker, she sailed from Shanghai December 12 and reached New York March 2, 1860, establishing an all-time record of 81 days between the northern Chinese and any North Atlantic port and beating by one day the record 1858-1859 passage of 82 days made by the *N. B. Palmer* and the 1857 passage of a few hours over 82 days reported by the *Surprise*.

Although four American vessels participated in the British China tea trade in 1860 (a barkentine, a bark, and two ships), the year 1859 is generally considered and referred to by British authorities as "the last year in which the Americans competed in the English trade." In 1859 twelve American vessels (eleven ships and one brig) took tea from China to British ports, mostly to London as usual, but only two vessels flying the Stars and Stripes had engaged in this British tea trade in 1858, and in 1857, with only eight sailings as against twelve in 1856 and twenty-four in 1855, it was evident that the trade had lost its attractiveness to Americans. The poor profits of the year 1859 definitely proved that notwithstanding the large amount of floating tonnage looking for business, it would be better to try other trades or even lay up their ships than continue United States ships in the China-Britain trade, where they were discriminated against and could make no profit.

During 1860 not a single first-class American clipper ship engaged in the British China tea trade. The *Flying Cloud* (1,782 tons; built in 1851), one-time "Queen of the Cape Horn Greyhounds," after being laid up in New York for two years and eight months, had changed owners, and she was being operated cheaply with cut-down spars and sail spread, a small "economy" crew, and but little money being spent on her for maintenance and repairs. Sailing from London in February 1860 under Captain Winsor, she, nevertheless, made a fast run out to China and arrived at Hong Kong May 21 after a passage of 97 days. Loading tea at Foochow, the *Flying Cloud* sailed August 6 and was at London December 7, 1860, after a passage of 123 days. The little American barkentine *Fairy* of 629 tons (built in 1856), we are told, "raced with the worn-out and once proud *Flying Cloud* and beat her by eight days on the run to England." The *Fairy* left Hong Kong August 10, 1860 (four days after the "*Cloud*"), and reached London December 3 (four days before the "*Cloud*"), making the passage in 115 days; but Foochow, the port of departure of the *Flying Cloud*, is some four hundred miles up the China Sea from Hong Kong, and it is said that "the two vessels did not sight each other on the race to London." The *Flying Cloud* was offered for sale in London, and following a passage to Australia and thence to China, she was chartered to carry troops and stores from Hong Kong to London, sailing December 29, 1861. The famous old ship made a great run of 9 days down the China Sea, passed Anjer January 7, 1862, put into St. Helena February 26, where she remained 11 days, and reached Deal April 18 after a passage of 110 days gross and 99 days at sea. (The ship anchored at Gravesend April 20, 1862.) After this good run, the *Flying Cloud* was sold to the British for trading with Australia and New Zealand, and there is a record of her doing 16 knots per hour on a passage from England to Moreton Bay, even with spars that had been cut down twice.

The *Fairy*, with what was referred to by the British as "a queer economy Yankee rig hardly suitable for the China or any deep-sea trade but of promise for coastal work," made better time on her run from China to London than all but one of the British tea clippers that participated in the British China tea race of 1860. Her 115-day passage was beaten by only the fast extreme clipper *Falcon* of 794 tons, built in 1859 by Steele, of Greenock, which

is credited with a run from Foochow to Deal (London) in 110 days. The next best passages of Britain's crack tea clipper ships in 1860, which can be compared with the 115-day run of the American barkentine *Fairy*, were:

| Name of Clipper | Ton-nage | Year Built | Left Foochow | Arrived Deal (London) | | Passage in Days | Name of Clipper | Ton-nage | Year Built | Left Foochow | Arrived Deal (London) | | Passage in Days |
|-----------------|----------|------------|--------------|-----------------------|------|-----------------|-----------------|----------|------------|--------------|-----------------------|------|-----------------|
| | | | | 1860 | 1860 | | | | | | 1860 | 1860 | |
| ZIBA | 497 | 1858 | June 7 | Oct. 11 | 126 | CHRYSO-LITE | 471 | 1851 | June 27 | Oct. 30 | 125 | | |
| ELLEN RODGER | 585 | 1858 | June 7 | Oct. 4 | 119 | ROBIN HOOD | 852 | 1856 | July 19 | Nov. 20 | 124 | | |

The next best run to that of the *Falcon* of all the British fleet of tea clippers in 1860 was that of the *Northfleet*, a sharp fast ship of 896 tons built in 1853. This ship left Whampoa on July 25 and was reported at Deal November 16 and at London November 18, completing a passage of 116 days (114 days to Deal). This was no faster than, if as fast as, the run over the identical course traversed by the American barkentine *Fairy*, which left Whampoa (Hong Kong) sixteen days after the British "flyer."

After 1859 American sailing ships left the British China tea trade "severely alone." A very occasional passage was made, but such were very few in number and far apart, and the sailings of American ships from China to the North Atlantic were generally to United States ports. It is interesting to note that following the fine work of the American bark *Maury* in the China-to-England tea runs of 1856 and 1857 and of the clipper ship *Sea Serpent* in 1859, the little *Maury* proved in 1861 that she could still beat recognized clipper ships in the China run. The medium clipper *Hotspur* of 862 tons, built by Roosevelt & Joyce, New York, in 1857 for the New York-China trade, had a reputation for making faster passages than extreme clippers that were accredited "flyers." On April 25, 1861, the *Hotspur* left New York for China, and the *Maury* sailed two days after her for the same destination. The *Hotspur* was flushed with a nine-day sailing victory over the fast and larger *Sea Serpent* in a run from the Straits of Sunda to New York, but the *Hotspur* and *Maury* sailed into Hong Kong together, the little bark having made the passage in 92 days, which beat by two days the excellent 94-day run of the *Hotspur*. That the *Hotspur* was fast was further emphasized by the fact that on her return passage to New York, where she arrived May 13, 1862, after a run of 100 sailing days from Hong Kong, she made port three days before the speedy clipper *Surprise*, which had left Batavia two days before her.

Variable Seasonal Sailing Conditions over the China-North Atlantic Port Course

Sailing conditions are variable over every ocean course, but adverse conditions of a more severe seasonal nature were more generally met with by the ships in the China trade than in any other run. It was common knowledge that favorable monsoons were more generally experienced by ships leaving China ports between the months of November and March, and the feeling developed that ships leaving China during the more unfavorable monsoon season (i.e., April to October inclusive) would usually require twenty to thirty days longer than a winter sailing to make the passage to a North Atlantic port in Europe or America. The length of a passage from China to a British or United States port was generally rated as fast, slow,

or medium by the marine fraternity according to whether the first part of it (i.e., the journey south in the China Sea) was made with a northeast monsoon or against a southwest monsoon. In 1875, British authorities asserted that runs of the tea clippers *Thermopylae*, *Cutty Sark*, and *Sir Lancelot* made in 1875 against southwest monsoons, in from 115 to 125 days, were fully as creditable as passages of from 92 to 101 days made that year by the *Hallowe'en*, *Titania*, and *Jerusalem*, which were benefited by favorable northeast monsoons.

Other conditions, however, materially affected the length of a passage from a Chinese to a North Atlantic port besides the very important direction and force of monsoon in the China Sea; the wind and sea in the Indian Ocean and the strength of the westerlies as the zone of the Roaring Forties was approached and the Cape of Good Hope rounded varied and greatly influenced the time required for the run. In the Atlantic, particularly north of the equator, the strength of the trades, with the possibility of head gales, did much to determine the length of the passage. Many a run that enjoyed most favorable sailing conditions in the China Sea or even east of the Cape met with pronounced adverse winds and rough seas in the Atlantic and ended as a long or worse than average passage. The American clipper *Surprise* made ten passages from Chinese ports to New York between 1851 and 1866, which have been graded according to the seasonal monsoons in the China Sea as follows:

| To New York from | Length of Passage in Days | | |
|---------------------|------------------------------------|-------------|---------------------------------|
| | Good Season (favorable monsoon) | Fair Season | Bad Season (adverse monsoon) |
| Shanghai | 82 | 96 | 99 |
| Shanghai | 93 | 104 | — |
| Shanghai | 95 | — | — |
| Foochow | — | 96 | — |
| Amoy | 91 | — | — |
| Hong Kong | 86 | — | — |
| Hong Kong | 108 | — | — |

Two passages were made from Whampoa (Hong Kong) to London with July sailings (i.e., in the bad or unfavorable season) in 106 and 107 days, respectively. These twelve passages from four Chinese ports to two North Atlantic ports varied from a very fast 82 days from Shanghai, the most northerly Chinese port of departure, to 108 days from Hong Kong, the most southerly Chinese port and the nearest to the ship's destination. The difference between the maximum and minimum length of passage from any Chinese port to either New York or London was twenty-six days; but when the *Surprise* finished her runs in the China Sea, got to the Indian Ocean, and commenced her deep-sea part of the passages, a pronounced variation in the length of the run continued and the ship's passages from Anjer (Straits of Sunda) to North Atlantic ports of destination varied from 70 days to 93 days—a difference of twenty-three days—thus convincingly proving that all the variation in length of passage was not caused by a favorable or unfavorable monsoon in the China Sea. In 1858 the *Surprise* was up with the Cape when 46 days out from Woosung (Shanghai) and was 15 days getting around it in heavy westerly gales, but reached New York, making a 93-day passage. In 1863 she was 45 days from Amoy to the Cape, 69 days to the equator, and 91 days to New York. We are told that the *Surprise*, on one of her passages, was at the Atlantic equator 68 days out, but her chance for a record "was spoiled by twenty days of continuous head gales after passing Bermuda."

The journey south through the China Sea was made by the American clipper *Swordfish* in December 1859 from Shanghai to Anjer in 10 days. The *Golden Gate* made the run from Shanghai south in November 1854 in faster time, but was in a collision with the bark *Homer*, had her head gear carried away, and put into Batavia for repairs when only 9½ days out from Shanghai. Both of these runs were made with a strong northeast monsoon, and the *Golden Gate* was benefited by a favorable gale of such force that she made 350 miles or over on three days and reached on one day 380 miles by observation, which is an all-time

record for sailing on the China Seas. (At this time, the *Golden Gate* was racing with the *Surprise*.) In 1852 the *Celestial* was reported as running from Shanghai (May 8) to Anjer (May 17) in 9 days; this seems incredibly fast for that part of the year, which the British generally designated as unfavorable for sailing south. The *Witch of the Wave* sailed from Hong Kong to Anjer "in the full strength of the northeast monsoon" in January (5-12) 1852 and made the run in 7 days and 12 hours. (Continuing, she passed the Cape of Good Hope when 37 days out from Whampoa and then had "adverse winds to the Western Islands," but took pilot off Dungeness for London on the 90th day.) Other fast runs made with favorable monsoons down the China Sea were:

Houqua (581 tons; built in 1844). Left Hong Kong Nov. 29, 1848, and made a run of 8 days to Anjer (Dec. 7).

Sea Serpent (1,337 tons; built in 1850). Left Whampoa Jan. 3, 1856, was at Anjer Jan. 11 and off Java Head Jan. 13, being 8 days from Whampoa to Anjer and 10 days to being in Indian Ocean and clear of Straits of Sunda.

Panama (1,139 tons; built in 1853). Sailed from Foochow Dec. 6, 1859, and passed Anjer Dec. 15, when 9 days out.

Atalanta (1,289 tons; built in 1852). Left Hong Kong Dec. 16, 1852, cleared Java Head and was in the Indian Ocean Dec. 25, when 9 days out.

Raduga (587 tons; built in 1848). Left Whampoa Jan. 2, 1849, and was at Anjer Jan. 11, when 9 days out.

Hotspur (862 tons; built in 1857). Left Hong Kong Jan. 25, 1862, and was at Batavia (Java) Feb. 3, when 9 days out.

On several other occasions, American clippers made some very fast time sailing down the China Sea with a strong, favorable northeast monsoon. In late 1851, the clipper ship *N. B. Palmer* (1,399 tons) is credited with running from Woosung to Hong Kong in only 70 hours (also stated as 75 hours from Shanghai to anchorage in Hong Kong), and on two other occasions (1868 and 1872) this same ship delivered letters to Hong Kong pilots at Pedro Blanco 72 hours from Woosung (Shanghai). In early March 1860, the medium clipper *Intrepid* of 1,173 tons (on her last voyage before being wrecked) left Shanghai in company with the fast mail steamer *Yang Tszé*, each bound for Hong Kong, and the American ship beat the steamer on the run by two hours. The marine fraternity expected long drawn-out passages in the China Sea against the monsoon and comparatively good runs when made with the monsoon. The steadiness and strength of these winds as well as their direction materially affected the length of passages, and many of the long runs were made in fitful light airs and calms. It was possible, however, to encounter fair to good sailing conditions in a passage of the China Seas at any time of the year, and occasionally a long passage was made because of bad sailing conditions encountered in the favorable season. A Yankee skipper once said: "A passage of the China Seas is a great big gamble. You never know whether it will take you two or six weeks to or from the Straits, but the odds against you are much better on a run home if you have a winter departure from a China port, and they lengthen greatly if you have to leave in the summer."

Whereas the passage down the China Sea usually occupied some 15 to 25 days, depending on the port of departure and season of the year, some extremely long runs have been recorded, such as the following made during the years 1852-1863 inclusive by American clipper ships of from 668 to 1,769 registered tons, built during the period 1847-1858:

| Name of Clipper | Tonnage | Built (launched) | Departure | | Run to Anjer Days |
|-----------------|---------|------------------|-----------|---------------|--|
| | | | From | Date | |
| RACER | 1,669 | 1851 | Shanghai | June 11, 1853 | 81 |
| UNION | 1,012 | 1851 | Shanghai | Aug. 7, 1861 | 78 to Indian Ocean (Straits of Allass) |
| EUREKA | 1,041 | 1851 | Macao | Oct. 30, 1862 | 73 to departure for New York |
| PRIMA DONNA | 1,529 | 1858 | Hong Kong | Oct. 18, 1882 | 69 to Java Head |

(Continued on next page)

| Name of Clipper | Tonnage | Built (launched) | Departure | | Run to Anjer Days |
|--------------------|---------|---------------------|-----------|----------------|-------------------------|
| | | | From | Date | |
| NIGHTINGALE | 1,060 | 1851 | Shanghai | July 31, 1852 | 61 |
| RED GAUNTLET | 1,038 | 1853 | Shanghai | July 19, 1862 | 55 |
| RED GAUNTLET | 1,038 | 1853 | Whampoa | Aug. 9, 1856 | 53 |
| CELESTIAL | 860 | 1850 | Shanghai | Apr. 5, 1855 | 51 |
| GOLDEN STATE | 1,363 | 1852 | Amoy | Aug. 10, 1862 | 49 |
| SAMUEL RUSSELL | 957 | 1847 | Foochow | Aug. 1857 | 49 |
| INVINCIBLE | 1,769 | 1851 | Whampoa | June 1859 | 48 |
| ECLIPSE | 1,225 | 1850 | Shanghai | Aug. 23, 1852 | 47 |
| SEA SERPENT | 1,337 | 1850 | Foochow | June 19, 1859 | 47 |
| PANAMA | 1,139 | 1853 | Hong Kong | Aug. 1, 1863 | 44 |
| CELESTIAL | 860 | 1850 | Shanghai | Apr. 26, 1856 | 44 |
| NORTH WIND | 1,041 | 1853 | Amoy | Sept. 18, 1860 | 43 |
| | | | | | (47 clear of Strait) |
| SAMUEL RUSSELL | 957 | 1847 | Foochow | Aug. 1855 | 43 |
| WINGED RACER | 1,767 | 1852 | Foochow | Sept. 2, 1860 | 43 |
| COEUR DE LION | 1,098 | 1854 | Shanghai | Sept. 24, 1854 | 42 |
| TINQUA | 668 | 1852 | Whampoa | Aug. 15, 1853 | 42 |
| NONPAREIL | 1,431 | 1853 | Shanghai | Oct. 2, 1859 | 41 |
| GAME COCK | 1,392 | 1850 | Shanghai | Oct. 1854 | 41 |

The medium clipper *Fleetwood* (663 tons; built in 1852) sailed from Shanghai November 3, 1853, on the last leg of her maiden voyage (around the world via San Francisco) bound for Boston, which she reached 135 days later. She reported a run of 81 days from Java Head. This ship, however, when in the China Sea, put back to Shanghai to obtain medical advice for Captain Dale and really commenced her passage on November 14 (the date of her second departure from Shanghai), which occupied 124 days to Boston; therefore, the ship was 43 days from Shanghai to getting clear of the Straits and Java Head.

When the *David Brown* in 1854 ran from Anjer to Deal (London) in 69 days, she required 38 days to beat down the China Sea against the southwest monsoon from Shanghai to Anjer. This very tedious part of the passage, made from July 11 to August 18, was in striking contrast to the brilliant deep-sea sailing of the big clipper once she was clear of the Straits of Sunda and in the Indian Ocean.

A rather slow passage from Whampoa to New York, according to departure and arrival dates, was that of the Yankee clipper *Tinqua* (668 tons). This little ship left Whampoa August 15, 1853, in the poorest season and was 42 days beating down the China Seas "against light and fitful airs." When she passed through the Straits of Sunda into the Indian Ocean, the *Tinqua* did some brilliant sailing and might have come close to the record between Anjer and New York had she not experienced bad sailing weather in the North Atlantic with severe gales for twelve days north of Bermuda. The total passage occupied 116 days, but the run from Anjer to New York was made in 74 days notwithstanding encountering two weeks of severe adverse weather in the Atlantic at the end of the passage.

The northeast monsoons, which helped to shorten the passages of homebound ships in the China trade, and the southwest monsoons, which operated to lengthen them, naturally had an opposite effect on the passages of outbound ships. In 1851 the clipper *Surprise* ran from London to Anjer in 81 days, but it took her 42 days to beat up the China Sea to Hong Kong against the adverse monsoon, and her passage from London to the China port of destination occupied 123 days—over one-third of the total time being required to negotiate the relatively short distance from the Straits of Sunda to Hong Kong.

It is a well-known fact that the prevalence of more favorable winds in the North Atlantic made passages from the British Isles to the equator (off Cape St. Roque and the Brazilian bulge) average many days shorter than runs from United States ports to the

same point (Lieutenant Maury, after studying the logs and special reports of several hundred sailing ship passages, was of the opinion that Liverpool was ten days nearer Cape St. Roque than New York—a conclusion correct in principle but somewhat excessive in degree); yet this advantage to a ship making an outward passage to China from a British port operated to a great degree against her when negotiating a return, or homeward, passage. Many fast runs from China to the Atlantic equator, when completed to a British port of destination, became rather ordinary passages. An analysis of ninety-eight passages of American clipper ships and reputed fast sailers from China ports (Shanghai, Foochow, and Hong Kong) to Britain (generally the London docks) made during the period 1850-1860 inclusive has been made in an endeavor to obtain a comparison of the length of China-to-Britain passages commenced during each of the twelve months of the year. Only completed passages of ships have been considered that—whether short, medium, or long—contribute to the setting forth of the relative length of passage due to the season of the year.

| Month of Departure from China Port | Number of Voyages Considered | Average Length of Passages to Final Destination in England in Days | Number of Passages | | |
|------------------------------------|------------------------------|--|--------------------|----------------|---------------|
| | | | Under 100 Days | Under 110 Days | Over 130 Days |
| January | 8 | 113 | 1 | 2 | 1 |
| February | 6 | 105 | 1 | 4 | — |
| March | 3 | 120 | — | 1 | 1 |
| April | 3 | 131 | — | — | 2 |
| May | 2 | 112 | — | 1 | — |
| June | 11 | 134 | — | 2 | 6 |
| July | 20 | 123 | — | 5 | 7 |
| August | 13 | 117 | 1 | 3 | 2 |
| September | 5 | 114 | — | 1 | — |
| October | 9 | 109 | 2 | 6 | — |
| November | 8 | 107 | 2 | 6 | — |
| December | 10 | 109 | 3 | 5 | 1 |
| Total | 98 | 117 | 10 | 36 | 20 |

A grouping of these months into periods of generally good, fair, and relatively bad (or long) passages gives the following results, which very definitely confirm the general opinion of skippers, owners, and merchants interested in the trade. The relatively small number of passages recorded with sailings in such months as March to May inclusive, September, and February affects the degree of difference but not appreciably the general comparison.

| Departure from China Ports Period of Year—1850- 1860 Inclusive | No. of Voyages Considered | Average Length of Passages to Final Destination in England in Days | Number of Passages | | Percentage of Total Number of Passages | | |
|--|---------------------------|--|--------------------|---------------|--|--------------|-------------------|
| | | | Under 110 Days | Over 130 Days | Under 110 Days | 111-129 Days | 130 Days and Over |
| October to February inclusive (five months) | 41 | 109 | 23 | 2 | 56 | 39 | 5 |
| March to May inclusive and August to September (five months) | 26 | 118 | 6 | 5 | 23 | 58 | 19 |
| June and July (two months)... | 31 | 127 | 7 | 13 | 22 | 36 | 42 |
| Total | 98 | 117 | 36 | 20 | 37 | 43 | 20 |

It has been said that notwithstanding the favorable or unfavorable monsoons in the China Sea, fast homeward passages have been made in the trade with departures from China in every month of the year; yet the above analysis shows that only one very fast passage out of forty-four was made by any ship considered in this specific comparison that sailed from China during the seven consecutive months March-September inclusive, and seventy-five per cent of the long passages (over 130 days) were of ships leaving a China

port during the three-month period of June, July, and August. These summer months—because of the available supply of new teas—were also the period of the greatest number of sailings, and forty-five per cent of the ninety-eight passages considered originated in this summer quarter.

The original passage of an American clipper (the *Oriental*) in the British China tea trade had a late August sailing, and she made what was then a record passage of 97 days from Hong Kong anchorage to the West India dock at London. She sailed from Hong Kong to Anjer down the China Sea in 21 days against the monsoon, ran from the Straits of Sunda to the Lizard in 70 days, and was 6 days beating up the English Channel and traversing the distance from the Lizard to the London dock. The *Challenge* and *David Brown* did their fast homeward sailing in the China-to-England tea trade in passages that commenced on August 5, 1852, and July 11, 1854, respectively; but the *Challenge* required 39 days and the *David Brown* 38 days in beating down the China Sea from Hong Kong and Shanghai, respectively, to Anjer, following which they did some brilliant deep-sea sailing across the Indian Ocean, around the Cape, and up the Atlantic. The *Challenge* sailed from Anjer to Deal in 65 days (105 days from Hong Kong) and the *David Brown* from Anjer to Gravesend in 69 days (108 days from Shanghai). The 91-day passage of the *Nightingale* from Shanghai to pilot off Beachy Head (London) commenced in mid-February, and the ship was 21 days to Batavia and 70 days from that Java port to destination. The splendid passage of the *Golden Gate* in 86 sailing days from Shanghai to Beachy Head (London) was commenced in late November 1854, and the run down the China Sea was made in a favorable strong northeast monsoon. The ship, after being in collision, put into Batavia 9½ days out from Shanghai. The *Witch of the Wave*, with an early January 1852 sailing from Whampoa, ran with a favoring monsoon to Anjer in 7½ days and took her pilot off Dungeness (London) when 90 days out (82½ days from Anjer); she went from Hong Kong to the Cape of Good Hope in 37 days, but required 53 days in bucking unfavorable winds in the Atlantic to complete the passage, which was, nevertheless, a record run because of the splendid time made in the China Sea and Indian Ocean.

The famous fast tea race of 1866 was commenced during the last days of May. The first five British clippers to be loaded (of sixteen awaiting cargoes) at Foochow, China, competed in the run to London, and three ships (*Taeping*, *Ariel*, and *Serica*) arrived after runs of 99 days to the Downs. According to the logs, these ships experienced both north-east and southwest winds and jockeyed with fickle land and sea breezes in the run down the China coast. The runs of the five contestants to Anjer occupied from 21 to 26 days and of the three ultimate leaders over the entire course, 21 to 23 days.

The length of passages of American ships in the British China tea trade as here given generally agrees with British records, but there is usually quite a difference between British-recorded and published length of passages of American ships engaged in British trade and the official logs of the vessels and the reports of masters, owners, and shippers. Unfortunately, during this period, there was in Britain a very definite and somewhat organized—or, at least, generally prevailing—tendency in effect to minimize the speed achievements and sailing performances of Yankee sailing ships, which was evidenced by making all records of American clipper passages as long as could possibly be stretched while, concurrently, the runs of British craft were treated in a diametrically opposite fashion and shortened for press reports and the claiming of records. British ships were at all times favored over Yankee ships when entering British ports; the pilots not only gave British vessels priority of service but also generally operated to delay American arrivals and often held a fast United States-owned vessel for days outside the Thames, presumably because of her "great draft" and claimed existing low water. Whereas a British passage would be deemed to end at any port (or point of land) of the English Channel or when a pilot was taken aboard, the length of an American passage was always recorded as ending

MERCHANT SAIL

Most Outstanding Passages of American Clippers in the British China Trade, 1852-1855 Inclusive

| Name of Clipper | Captain | Tonnage | Year Built | Departure | | Arrival | | Length of Passage in Days | Remarks |
|-------------------|---------------------------|---------|------------|---------------------|---------------------|--------------------------------|---|--|---|
| | | | | Port | Date | Port | Date | | |
| WITCH OF THE WAVE | J. H. Millet | 1,498 | 1851 | Whampoa, China | Jan. 5, 1852 | Pilot off London | Apr. 4, 1852 | 90 | Whampoa to Anjer, 7½ days. Cape of Good Hope, 37 days from Whampoa. |
| CHALLENGE | Mate Pitts of WITCH-CRAFT | 2,006 | 1851 | Anjer, East Indies | Sept. 13, 1852 | Deal (London) | Apr. 5, Nov. 18, 1852 | 91 65 | From Whampoa Aug. 5. From Cape of Good Hope to Deal, 39 days. |
| DAVID BROWN | George S. Brewster | 1,717 | 1853 | Anjer, East Indies | Aug. 20, 1854 | Gravesend (London) | Oct. 28, 1854 | 69 | From Shanghai July 11, 1854, 109 days. Copper torn and stem twisted from grounding. |
| GOLDEN GATE | Samuel F. Dewing | 1,349 | 1851 | Shanghai, China | Nov. 22, 1854 | Pilot off Beachy Head (London) | Feb. 23, 1855 | 86 sailing days | Damaged by collision in China Sea and put into Batavia for repairs. Reported to have made 350, 360, and 380 nautical miles per day in China Seas. |
| NIGHTINGALE | Samuel W. Mather | 1,060 | 1851 | Shanghai, China | Feb. 16, 1855 | Pilot off Beachy Head (London) | May 18, 1855 (11:00 a.m.) | 91 (pilot to pilot) | Was 70 days from Batavia Roads. |
| NIGHTINGALE | Samuel W. Mather | 1,060 | 1851 | Portsmouth, England | Feb. 10, 1853 | Anjer, East Indies | Apr. 23, 1853 | 72 | Also stated as 80 days from London to Anjer and 112 days to Shanghai; with American clipper <i>Challenge</i> , 78 days from London to Anjer. |
| COMET | E. C. Gardner | 1,836 | 1851 | Liverpool, England | June 17, 1854 | Hong Kong, China | Pilot, Sept. 7; anchored in harbor, Sept. 9 | 83 days 21 hours, pilot to pilot 84 days 16 hours, anchor to anchor | Reported traveling 17,500 nautical miles; averaged 215 miles per day. Best day's run, 350 miles. |
| EAGLE WING | Eben H. Linnell | 1,174 | 1853 | London, England | Downs Apr. 17, 1855 | Hong Kong, China | July 10, 1855 | 83 days 12 hours (pilot to pilot) | Anchored becalmed inside the Ladronez night of July 9. |

when the ship was moored to her discharging dock. Moreover, British passages were generally figured as the number of days spent under canvas at sea, but an American ship's passage was computed in Britain as the time between the clearance date from the port of departure to the actual and recorded arrival date at the port of final destination and ignored the time spent at anchor, etc., or in ports en route. The fast passage from China to Britain of the *Golden Gate*, given by the British as 95 days, port to port, was, in fact, a record run of 86 days net deep-sea sailing time from Shanghai to pilot off Beachy Head (London) on February 23, 1855. The passage of the *Nightingale* recorded by the British as 105 days was actually a run for that clipper of 91 days from Shanghai (sailing February 16, 1855) to the taking of a pilot off Beachy Head on May 18, 1855, although the ship, under British control, instead of reaching her dock in London on May 19, is officially recorded as arriving May 21, and the sailing date from Shanghai is stated as February 8, 1855.

The table on page 2239 gives the most outstanding and fastest passages of American clippers in the British China trade during the four-year period 1852-1855 inclusive. Of the eight recorded passages, five were homeward- and three outward-bound runs, and five were complete passages between Chinese and English ports; three were runs over the deep-sea part of the course between Anjer (and the Straits of Sunda) and England (Deal, Gravesend, or Portsmouth).

*Particulars and Sailing Performances of Some of the Leading American Ships
in the U.S.A.-China Trade during the Fifties and Early Sixties*

A clipper ship that made some good runs, had a good record, and was conspicuously in the news at times with respect to the China trade was the *Golden State* of 1,363 tons, built by Jacob A. Westervelt, New York, and launched January 10, 1853. She was constructed for Chambers & Heiser, but was later owned by A. A. Low & Bro., and during much of her sea life under the American flag her operations were confined to trading between New York, China, and Japan. In this service, "she was always a favorite" and, it has been said, had "the longest career of any vessel ever so engaged." In the spring of 1867, the *Golden State* was reported to have brought the largest cargo of tea ever delivered at New York, and it was "sold prior to arrival for \$1,000,000." On her first two voyages, the "*State*" went out via the Horn and San Francisco and continued to China. Concluding her maiden voyage, she ran in the British China tea trade from Shanghai to London, sailing from Woosung to Deal (where she arrived February 9, 1854) in 94 days; thence home in ballast. The last leg of her second voyage was a passage of 88½ days from Shanghai to Sandy Hook made in the first three months of 1855. The next three voyages of the *Golden State* were direct in the New York-China trade and are briefly summarized as follows:

| | Length of Passage in Days | | |
|--|---------------------------|-----------------|-----------------|
| | Voyage No. 3 | Voyage No. 4 | Voyage No. 5 |
| <i>Outbound</i> | | | |
| New York to Hong Kong..... | 90 | 114 | 93 |
| <i>Homebound</i> | | | |
| Foochow to New York..... | 105 | 95 | 93 |
| Total round voyage loaded at sea..... | 195 | 209 | 186 |

The *Golden State* left Hong Kong December 2, 1859, and made a stop at Batavia; she passed the Cape of Good Hope January 21, 1860, and arrived at New York March 2 after a passage of 91 days gross, but reported as only 84 days actual sailing time. In 1855 the clipper ran from Java Head to anchorage in New York Harbor in 75½ days. In 1857 she arrived at New York 74 days from Anjer, which time was beaten probably by two days when she reached New York on March 2, 1859, in 84 sailing days from Hong Kong via Batavia, and on December 15, 1862, she arrived at New York 78 days from Anjer. On November 22, 1872, the *Golden State* arrived at San Francisco, completing a transpacific run of only 34 days from Shanghai. In March 1883, the "*State*" put into Rio de Janeiro leaking. Her cargo was discharged and the ship sold to the Maguires, of Quebec, who operated her under the Argentine flag in the North Atlantic trade until December 1886, at which time she was wrecked on the Maine coast near Cape Elizabeth when about thirty-four years old.

The American clipper *Comet* of 1,836 tons, launched by W. H. Webb, New York, July 10, 1851, was one of the fastest, handsomest, and most successful sailing ships ever built in the world. The *Comet* holds the all-time record for the fastest passage of a sailing ship from San Francisco to an East Coast United States port (76 days 7 hours from wharf to anchor) in the winter of 1853-1854. She holds the record for the fastest time made in the Northern Hemisphere from the Atlantic equator to New York and in the Pacific from the equator to San Francisco and from the Golden Gate to the line; also from San Francisco to Cape Horn. After making the all-time eastbound Cape Horn record passage, the *Comet*, finding New York freight rates low, crossed the Atlantic and loaded coal at Liverpool for Hong Kong. Coal is one of the very worst cargoes to put in a ship to develop speed, but the *Comet*, sailing from Liverpool June 17, 1854, made the run out to Hong Kong in five days less time than the previous record. She made a passage of 84 days 16 hours, anchor to anchor, and 83 days 21 hours, pilot to pilot. The ship's log says that she made the run in 84 days 4 hours sun time and 83 days 20 hours based on twenty-four-hour days. Her best day's run as generally reported was 350 nautical miles (an average of 14⅔ knots per hour), and we are told that "she logged 16 knots an hour at times." The Hong Kong REGISTER, announcing the *Comet's* arrival in port under the caption, "The Quickest Passage on Record," says: "She sailed in straight course from noon to noon 17,500 geographical miles, making an average of about 215 miles per day, or a little more." The distance traveled as recorded in the *Comet's* log by Capt. E. C. Gardner on the deep-sea run to Sunda Straits is 15,016 nautical miles; but no mileage is given for August 27, when the ship was near Anjer, although the log of that day reads, "Brisk trades and fine weather. At 3:30 A.M. made Java Head. Passed through Prince's Passage. Wind S.E." During the six preceding days (August 21-26 inclusive), she had covered, according to the log, 1,452 nautical miles—an average of 242 miles per day and 10.1 knots per hour (maximum day's run for the period, 283 miles, or 11.8 knots per hour, on August 25; minimum, 199 miles, or 8.3 knots per hour, on August 21). On August 28, the distance traversed is given on the log as 276 miles. If this mileage is intended to cover the two days that the *Comet* was in and around the Sunda Straits and Java Head, the total distance as given by the log of 15,016 miles would be correct, and the sailing speed for forty-eight hours is 5¾ knots per hour as against 8 knots per hour average for the two following days, August 29 and 30. The official log further states, "The whole distance sailed on straight course, noon to noon, 15,000 miles."

A good day's run of 322 miles (13.4 knots per hour) was recorded on August 14 and a poor one of only 56 miles (2.3 knots per hour) on September 1. The average mileage per day of twenty-four hours, pilot to pilot, was 179.1 miles and the average speed, 7.46 knots per hour for the 83 days and 20 hours of sailing—practically 2¾ months at sea. On July 14-19 inclusive, the *Comet* covered 1,439 miles in six consecu-

tive days, an average of 240 miles per day and a speed of 10 knots per hour. During the six days July 27-August 1 inclusive, she practically duplicated this performance, as she traversed 1,432 miles, an average of $238\frac{2}{3}$ miles per day. In four consecutive days, August 8-11 inclusive, she sailed 956 miles—an average of 239 miles per day and 10 knots per hour. In three consecutive days, July 28-30 inclusive, she covered 832 miles—an average of $277\frac{1}{3}$ miles per day and 11.55 knots per hour. Her best run for two consecutive days was 576 miles, an average of 288 miles per day and 12 knots per hour. Her slowest sailing was on the four days July 4-7 inclusive, when she covered only 338 miles—an average of $84\frac{1}{2}$ miles per day and 3.5 knots per hour for this period. On the whole, the voyage was one of unusually steady sailing for a vessel propelled by wind, and the captain reported, "Not a sail, spar or rope was lost on the passage." The winds were generally light, moderate, or brisk and only occasionally strong, approaching gale force on only two or three days of the entire passage. About half of the passage was spent with the vessel moving at speeds of from 6 to 10 knots per hour.

An analysis of the log of the *Comet* covering this fine passage between Liverpool and China gives the following statistics bearing on speed attained during the voyage:

| Speed in Knots per Hour | Mileage per Day Nautical Miles | Number of Day's Runs during the Passage Showing This Speed | Percentage of These Day's Runs to the Total Day's Runs Reported for Entire Voyage |
|-------------------------|-----------------------------------|---|---|
| Over 13 knots | Over 312 miles | 1 | 1.22 |
| Between 12 and 13 knots | Between 288 and 312 miles | 1 | 1.22 |
| " 11 " 12 " | " 264 " 287 " | 7 | 8.53 |
| " 10 " 11 " | " 240 " 263 " | 7 | 8.53 |
| " 9 " 10 " | " 216 " 239 " | 14 | 17.07 |
| " 8 " 9 " | " 192 " 215 " | 8 | 9.76 |
| " 7 " 8 " | " 168 " 191 " | 7 | 8.53 |
| " 6 " 7 " | " 144 " 167 " | 10 | 12.20 |
| " 5 " 6 " | " 120 " 143 " | 11 | 13.42 |
| " 4 " 5 " | " 96 " 119 " | 5 | 6.10 |
| " 3 " 4 " | " 72 " 95 " | 8 | 9.76 |
| " 2 " 3 " | " 48 " 71 " | 3 | 3.66 |
| Total | | 82 | 100.00 |
| <i>Recapitulation</i> | | | |
| Over 12 knots | Over 288 miles | 2 | 2.44 |
| Between 10 and 12 knots | Between 240 and 287 miles | 14 | 17.06 |
| " 8 " 10 " | " 192 " 239 " | 22 | 26.83 |
| " 6 " 8 " | " 144 " 191 " | 17 | 20.73 |
| " 4 " 6 " | " 96 " 143 " | 16 | 19.52 |
| Under 4 knots | Under 96 miles | 11 | 13.42 |
| Total | | 82 | 100.00 |

The *Comet* was unfortunate as to the timing of her passages and sailing conditions encountered in her runs from China to New York. In 1852 she made her run from Whampoa (May 6) to New York (August 11) in 97 days, which was a very fast passage considering the date of departure and the light winds experienced. In 1861 her passage from Hong Kong to New York was made in 101 days (47 days from the Cape of Good Hope and 28 days from St. Helena), which was deemed fast under the weather conditions prevailing. In 1856 the *Comet* left Whampoa in mid-June at the height of the most unfavorable season, and she was held back by an adverse monsoon in the China

Sea. When she got into the Indian and Atlantic Oceans, ill-luck continued with her, and she could not find any of the usual good sailing breezes. On her fourth and last passage over the course, the *Comet* left Macao August 6, 1862, and in the China Sea ran into a severe typhoon, which caused much damage; the rudderhead was sprung, and the ship had to be hove to for several days while repairs were made. After encountering unfavorable sailing weather throughout the entire course, the ship finally anchored in New York Harbor on December 19, 1862, after a passage of 135 days, port to port, during which "she never enjoyed the benefit of a single good sailing chance."

The *Eagle Wing* of 1,174 tons, built in 1853 by James O. Curtis at Medford, Mass., for Chase & Tappan, of Boston, made some fine passages in the China trade. Leaving the Downs April 17, 1855, on a passage from London to Hong Kong, she anchored inside the Ladrones, becalmed, the night of July 9 and was at Hong Kong July 10 after a passage of 83 days 12 hours, pilot to pilot. Completing this voyage, the *Eagle Wing* loaded at Shanghai, left Woosung November 23, 1855, and reached New York February 15, 1856, after a passage of 84 days. On June 3, 1859, the *Eagle Wing* arrived at New York and completed a fast passage of 82 days from Hong Kong, having sailed from that port on March 13, 1859.

The extreme clipper ship *Shooting Star* of 903 tons, launched February 8, 1851, was built by James O. Curtis, Medford, Mass., for Reed, Wade & Company, of Boston, from designs by Capt. John Wade. She was the first real clipper built at Medford and was planned for around-the-world China trade sailing west, but was admittedly "rather small for the Cape Horn route." The *Shooting Star*, during her career under the American flag, made two outbound runs to China via the Cape of Good Hope and two via Cape Horn and San Francisco; she also made two California voyages, returning by way of Honolulu and Cape Horn. On her maiden voyage, she ran home from Macao to Boston in 86 days. On her second voyage (1852), she circumnavigated the globe in 9 months 24 days, was 124 days from Boston to San Francisco, 41 days crossing the Pacific to Hong Kong, 12 days thence to Shanghai, and 106 days from Woosung to New York—a total of 264 days at sea. Her third and fifth voyages, commenced in 1853 and 1855, were to California and return via Honolulu. Voyage No. 4 (1854) consisted of an outward passage of 108 days from New York to Hong Kong and a return in 106 days, and her sixth voyage commenced with an outward run from New York (May 24, 1856) of 98 days to Hong Kong, following which she traded on the Asiatic coast until sold to Bangkok merchants, when she went under the Siamese flag. The ship was reported wrecked on the Formosa coast in 1867. The *Shooting Star* captured and burned by the Confederate raider *Chickamauga* on October 31, 1864, was a second ship bearing this name (a medium clipper of 947 tons), built by Reed, Wade & Company, and in 1867 the clipper *Ino* of 895 tons (built in New York in 1851), which had served as a cruiser during the war, was sold, renamed, and became *Shooting Star III*.

The clipper *Shooting Star I* sailed from New York April 25, 1854, for Hong Kong, where she arrived August 11 after a passage of 108 days (reported as 107 days). In thirty-nine days thereafter, she was ready for sea and on September 19 sailed from Whampoa for New York, accomplishing the return passage in 107 days (reported as 106 days).

On the voyage out, the official log shows that the passage from New York to Sunda Straits, a distance of 14,650 nautical miles, was accomplished in 94 days—an average of 156 miles per day. It was evidently an ordinary voyage of alternating good and poor sailing weather, the best day's runs being 285 miles (July 4), 280 miles (July 2), and 278 miles (July 3)—a total of 843 miles in three days and an average speed of 11.7 knots per hour. Two days later, on July 6, the log shows no distance made whatsoever, and this notation appears on the log, "Where are the brave west winds supposed to blow so

constant hereabouts?" On July 11, the vessel made 272 miles and on April 27 (the third day out) 270 miles; other relatively big day's runs were 265 miles on both May 22 and July 18, 253 miles on June 25, 252 miles on July 12, 246 miles on July 13 (covering 770 miles in three days—an average speed for the period of 10.7 knots per hour), and 241 miles on both May 8 and July 28. The poorest sailing days in the run to Sunda Straits following July 6, when no gain was made, were 21 miles on May 9, 27 miles on May 29, 32 miles on May 11, 36 miles on April 29, and 40 miles on May 12; other low day's runs were 46, 48, 60, 68 miles, respectively. In the passage of 94 days in the open sea were eighteen day's runs of less than 100 miles, or less than 4 knots per hour, and twelve day's runs of over 240 miles, or 10 knots per hour or over. Considered from the standpoint of day's runs and average speed per day, an analysis of this outbound deep-sea run of the *Shooting Star* from New York to Sunda Straits (negotiated in 94 days) is of interest, as it is indicative of the variableness of the distance covered each day by a vessel dependent on wind for propulsion. This was an average part of what was officially described at the time as a "most successful voyage, which has been accomplished in the brief space of eight months and ten days."

| Speed per Hour Knots | Nautical Miles Covered per Day | Number of Day's Runs in This Distance and Speed Range | Speed per Hour Knots | Nautical Miles Covered per Day | Number of Day's Runs in This Distance and Speed Range |
|-------------------------|-----------------------------------|--|---|-----------------------------------|--|
| Less than 1 | Less than 24 | 2 | Less than 2 | Less than 48 | 8 |
| Between 1 and 2 | 25 - 48 | 6 | Between 2 and 4 | 49 - 96 | 11 |
| " 2 " 3 | 49 - 72 | 2 | " 4 " 6 | 97 - 144 | 13 |
| " 3 " 4 | 73 - 96 | 9 | " 6 " 8 | 145 - 192 | 22 |
| " 4 " 5 | 97 - 120 | 6 | " 8 " 10 | 193 - 240 | 28 |
| " 5 " 6 | 121 - 144 | 7 | " 10 " 12 | 241 - 288 | 12 |
| " 6 " 7 | 145 - 168 | 9 | Total days 94 | | |
| " 7 " 8 | 169 - 192 | 13 | Less than 4 | Less than 96 | 19 |
| " 8 " 9 | 193 - 216 | 18 | Between 4 and 8 | 97 - 192 | 35 |
| " 9 " 10 | 217 - 240 | 10 | " 8 " 12 | 193 - 288 | 40 |
| " 10 " 11 | 241 - 264 | 5 | Total days 94 | | |
| " 11 " 12 | 265 - 285* | 7 | Percentage of days of the passage that showed a speed of 4 knots per hour or less, 20.2; over 6 knots, 66.0; over 8 knots, 42.5; over 10 knots, 12.7. | | |
| | | Total days 94 | | | |

*Maximum on passage, 285 miles.

The clipper ship *Sea Serpent* of 1,337 tons, built by George Raynes, Portsmouth, N.H., in 1850 (launched in December) for Grinnell, Minturn & Company, New York, has a splendid record for fast sailing and for handling her cargoes well in the China trade. Her model and rig were well suited for tropical runs, and we read that "in light winds she slipped through the water on her course, while other ships nearby would not have steege way." Unlike many other ships which had a reputation for "ghosting along in the doldrums," the *Sea Serpent* was a good sea boat and dry in heavy weather. It is said that "underwriters were never called upon to pay any claims for damage to her cargoes," which means that she not only had a good model but also had been well built and during her sea life benefited by a good command and good luck. The following is a digest of the passages of the *Sea Serpent* in the New York-China trade, which includes the period of her first six voyages around the world via San Francisco and China ports (she made no direct U.S.A.-China round voyage) and two subsequent fast passages from China to New York, one made in the winter of 1865-1866 and the other some eight years later (1873-1874), when the clipper was twenty-three years old.

| Departure | | Arrival | | Passage in Days | Remarks |
|-----------|-------------------|----------|------------------|--------------------|--|
| Port | Date | Port | Date | | |
| Whampoa | Oct. 16, 1851 | New York | Jan. 24, 1852 | 100 | Eighteen days to Anjer; 82 days from Anjer. Maiden voyage. Last lap around the world via San Francisco and China. |
| Whampoa | Oct. 4, 1852 | New York | Dec. 31, 1852 | 88 | Was within 50 miles of New York in 86 days. Fastest passage of the year. Last lap of second voyage around the world via San Francisco and Hong Kong. |
| Whampoa | Sept. 10, 1853 | New York | Dec. 20, 1853 | 101 | Twenty-nine days to Anjer by eastern passage; 72 days from Anjer. Last lap of third voyage around the world via San Francisco and Hong Kong. Crossed the Pacific in 38 days. |
| Shanghai | Nov. 5, 1854 | New York | Feb. 15, 1855 | 102 | Sixteen days to Anjer; 86 days from Anjer. Lost main-topmast in South Atlantic off the Plate. Last lap of fourth voyage around the world via California and China. |
| Whampoa | Jan. 3, 1856 | New York | Mar. 22, 1856 | 79 | Ten days to Java Head (8 days to Anjer); 69 days from Java Head; 39 days from Cape of Good Hope. Beaten only by the 74-day 14-hour passage of the SEA WITCH in 1849 and possibly by the 78-day 6-hour run of the NATCHEZ in 1845 from Macao to pilot off Barneгат. |
| Hong Kong | Nov. 1, 1860 | New York | Feb. 11, 1861 | 102 | Twenty-four days to Anjer; 79 days from Anjer. Return passage to New York after trading in Pacific and making a tea run to London from Foochow. Beat all British tea clippers that sailed near her. |
| Hong Kong | 1861 | New York | 1862 | 107 | Last lap of sixth voyage around the world via San Francisco and China ports. |
| Macao | Oct. 22, 1865 | New York | Jan. 24, 1866 | 94 | Left Whampoa Oct. 21; 95 days to New York; Macao to Anjer, 25 days; Anjer to New York, 69 days. Was 44 days from Cape and 22 days from equator. Was 5 days north of Hatteras in heavy westerly gales and 7 days in dense fogs. |
| Shanghai | Nov. 17, 1873 | New York | Feb. 19, 1874 | 95 | Return passage to New York after a period of general trading. |

The average length of all the seven passages made by the *Sea Serpent* from any China port home during the years 1851-1862 inclusive was 97 days. The outstanding passage was the 79-day run in early 1856 from Whampoa to New York, which was the fastest run by any ship from a Chinese to a North Atlantic port since the *Sea Witch* made her all-time record passage in 1849. In 1874 the *Sea Serpent* was sold to the Norwegians and renamed *Progress*, with hailing port Tonsberg. In 1879 this ship, heavily laden, ran from New York to Gravesend, London, in only 17 days, and she was listed in registers in 1890, when forty years old.

The little Yankee clipper *Snow Squall*, built in 1851 by Alfred Butler at Cape Elizabeth, Maine, was of suitable size for the China trade, having a registered tonnage of 742 tons, but was much too small for the Cape Horn trade. In 1853, on her only run to San Francisco, she was 25 days battling gales off the Horn, during which she was driven to a latitude of 60° S. On her maiden voyage, the *Snow Squall* was sent around the Horn to Honolulu, then across the Pacific to China, following which she made a very good run from Shanghai to New York in 97 days. After her passage to San Francisco in severe weather, the little Maine-built clipper went to Shanghai the following year and made a 110-day passage from that port to London in early 1854. Her next voyage was between New York and Australia. She went out to Sydney in 85 days and, returning, made "a nice run of 78 days from Anjer home." (In 1861-1862, the ship went from New York to Melbourne in 81 days, pilot to pilot, the fastest run made in that service for some three years.) In the years 1859-1861, the *Snow Squall* did some fast sailing in the Chinese-American trade, making three fine runs home as follows:

| Year | Port of Departure | Destination | Length of Passage in Days |
|------|-------------------|-------------|---------------------------|
| 1859 | Shanghai | New York | 91 |
| 1860 | Shanghai | New York | 92 |
| 1861 | Amoy | New York | 82 |

The average length of these three passages was only 88 days, and the lifetime average of homeward runs to a United States port in the China trade was 90½ days. In 1862 the *Snow Squall* ran from Penang to New York in 100 days, but was nine days off the Cape of Good Hope during violent westerly gales and high seas. Over this same course the following year, she made the passage in 94 days and narrowly escaped capture by the Confederate commerce raider *Tuscaloosa*, which, however, was not a steam vessel, and although she got alongside the *Snow Squall* before her identity was revealed and fired her guns, the fast and handy Yankee clipper, under a plucky commander (Captain Dillingham), eluded capture and soon ran her pursuer out of sight.

Another clipper built for the California and China trade that did some good sailing and has a fine lifetime record in her passages from China home was the 1,438-ton *Kathay*, built by Jacob A. Westervelt, New York, in 1853. The following is a record of her five homeward runs in the China trade before the Civil War and her sale to the British:

| Year | Port of Departure | Destination | Length of Passage in Days | |
|----------------------------|-------------------|-------------|---------------------------|------------|
| | | | From China | From Anjer |
| 1854 | Macao | New York | 104 | 78 |
| 1855 | Shanghai | New York | 98 | 73 |
| 1856 | Shanghai | New York | 92 | 75 |
| 1859-1860 | Amoy | New York | 93 | 74 |
| 1860-1861 | Amoy | New York | 89 | 77 |
| Average of 5 passages..... | | | 95 | 75 |

On her last passage over the course, the *Kathay* made her best record for a run from a Chinese port, but not her best deep-sea run from the Straits of Sunda. That she did some excellent sailing in early 1861 is proved by the fact that on January 20 she spoke the clipper *Competitor* near the Cape of Good Hope and, with a run of 39 days from the Cape to New York, where she arrived March 5, 1861, beat that fast vessel by nine days.

The big Cape Horner *Flying Cloud* (1,782 tons) was not as fast as many other smaller American clippers in the China trade, but the "Greyhound" of the California service made a highly creditable record in her four runs from Hong Kong to New York, which were the last laps of her voyages around the world sailing to the westward via San Francisco and China. These four China-U.S.A. passages are briefly summarized herewith:

| Voyage No. | Departure | | Arrival at New York | Length of Passage in Days | Remarks |
|------------|-----------|--------------|---------------------|---------------------------|---|
| | Port | Date | | | |
| 1 | Whampoa | Jan. 6, 1852 | Apr. 9, 1852 | 94 | Had a sprung mainmast, and upon arrival at New York her masts and spars on the fore and main and her rigging were replaced. |
| 2* | Whampoa | Dec. 1, 1852 | Mar. 8, 1853 | 96 | Eighty-three days from Java Head; 13 days to Java Head. Had gales for 14 days off the Cape. Made 382 miles on Dec. 21. Light weather and calms in Atlantic. |

*On Voyage No. 3, the FLYING CLOUD returned to New York via Cape Horn.

(Continued on next page)

| Voyage No. | Departure | | Arrival at New York | Length of Passage in Days | Remarks |
|------------|------------------|--------------------------|---------------------|---------------------------|--|
| | Port | Date | | | |
| 4 | Whampoa | July 20, 1854 | Nov. 24, 1854 | 115 | Shortly after leaving Hong Kong, ran on a coral reef and when worked clear was leaking badly. Accident greatly delayed ship, and pumps were kept going during entire run home. |
| 5 | Whampoa Macao | Sept. 5 Sept. 7, 1855 | Dec. 14, 1855 | 97 from Macao | Twenty-five days to Anjer; 72 days from Anjer. Unfavorable monsoon in China Sea. Fast deep-sea run. |

The average length of the three normal direct passages from Whampoa (not Macao) to New York was 96 days.

The Cape Horner *Messenger* (1,351 tons; built in 1852) was an extreme clipper that made two passages in the China-New York trade to complete her voyages, and both of them were creditable sailing performances, the last one being very fast as the following record shows:

| Departure | | Arrival at New York | Length of Passage in Days | | | Remarks |
|------------------------------|---------------|---------------------|---------------------------|-------------------|-------|---|
| Port | Date | | To Anjer | Anjer to New York | Total | |
| Hong Kong | Jan. 11, 1852 | Apr. 23, 1852 | 21 | 73 | 94 | Only 17 days from Atlantic equator to Sandy Hook. |
| Shanghai | Oct. 24, 1854 | Jan. 22, 1855 | 22 | 68 | 90 | Crossed the Atlantic equator 67 days out. |
| Average of two passages..... | | | 21½ | 70½ | 92 | Twenty days from line to New York. |

The *White Swallow* of 1,192 tons, built at Medford, Mass., in 1853 primarily for the California trade, made no round voyage in the American China trade. She had one passage from China home in 1855 to complete a voyage out to Australia (Boston to Melbourne in 90 days, 1854-1855). She ran from Shanghai to New York in early 1857 to complete a voyage and then returned to China (Hong Kong), proceeding to San Francisco and going home via Jarvis Island with guano. The following is a record of the three passages made by the *White Swallow* in the China trade—one outbound and two home:

| Departure | | Destination | | Length of Passage in Days | Remarks |
|-----------|---------------|-------------|----------------|---------------------------|---|
| Port | Date | Port | Date | | |
| Foochow | Aug. 25, 1855 | New York | Dec. 19, 1855 | 115 | Thirty-eight days to Anjer; 77 days from Anjer; 26½ days from Anjer to Cape. |
| Shanghai | Jan. 19, 1857 | New York | Apr. 30, 1857 | 101 | Twenty-one days to Java Head; 80 days from Java Head; 31 days from Java Head to Cape. |
| New York | June 28, 1857 | Hong Kong | Sept. 23, 1857 | 89 | A remarkably fast run made in the poor season at each end of the course. |

The medium clipper ship *Nabob* of 1,246 tons, built at Chelsea, Mass., and launched at the John Taylor yard on January 21, 1854, was designed for the East Indian trade. During her career, she made one complete voyage in the U.S.A.-China trade and, all told, made three passages from New York out to China (one of which was outstanding) and two home-bound runs (one of which, from Foochow, was very fast). The sailing performance of the *Nabob* on these five passages in the American China trade is set forth herewith:

| Departure | | Destination | | Length of Passage in Days | Remarks |
|-----------|------|-------------|---------------|---------------------------|---|
| Port | Date | Port | Date | | |
| New York | 1857 | Hong Kong | 1857 | 85 | Fifty-two days from Cape St. Roque—a record. Can be compared with the 54-day run by the <i>ORIENTAL</i> on her record 81-day passage between the ports in 1850. |
| New York | 1859 | Shanghai | 1859 | 105 | Returned home, after loading at Manila, in 102 days (76 of which were under jury masts). |
| New York | 1860 | Shanghai | 1860 | 102 | Returned home in 91 days. Was at Bermuda 82 days out and then delayed by northwesterly gales for 6 days. |
| Shanghai | 1858 | New York | 1858 | 120 | Return passage of round voyage when she went out to Hong Kong in only 85 days. |
| Foochow | 1860 | New York | Mar. 23, 1861 | 91 | Took pilot at Sandy Hook when 89 days out. Anchored in harbor on 91st day. |

The *Stag Hound* of 1,534 tons, reported as the "largest and longest American merchantman" afloat when launched by Donald McKay on December 7, 1850, obtained much publicity in her early days because of her sharp model and big sail spread. Built for George B. Upton and Sampson & Tappan, of Boston, she was reported in the press as her designer-builder's "beau ideal of swiftness" and suitable for high-speed work in the China, California, or any other trade. The *Stag Hound* was partially dismasted in the North Atlantic on her maiden voyage, which was around the world via San Francisco, Manila, and Hong Kong, and in the Pacific she had to put into Valparaiso for repairs and supplies; but her passage out was reported by Capt. Josiah Richardson as 107 net sailing days from New York to San Francisco and her best day's run as 358 miles. From Valparaiso Captain Richardson wrote the owners:

Your ship *Stagbound* is at anchor in this harbor after a passage of 66 days, which, I believe, is the shortest but one ever made and had it not been for the accident of losing some of our spars, I do

not doubt it would have been the shortest. . . . We lost at least 800 miles by the accident. The ship has yet to be built to beat the *Stagbound*.

Captain Richardson was overenthusiastic, for whereas the *Stag Hound*, with her "steamboat-like model," was very fast in wind and weather to her liking, she was frequently beaten by other American clippers. She arrived at San Francisco, completing her first passage, on May 25, 1851, in 113 days (also stated as 114 days) and 108 days net. The Pook-designed clipper *Surprise* of 1,261 tons, which was of 273 tons less registered tonnage than the *Stag Hound* and had been launched sixty-three days before her (also at East Boston), had reached San Francisco on March 19, 1851 (sixty-seven days before the arrival of the new McKay clipper), and had made her passage around the Horn and between the same ports in the record time of 96 days 15 hours, or some seventeen days less elapsed time and twelve days less net sailing time than was required by the *Stag Hound*. The sailing performance of the *Stag Hound* over the course from Hong Kong to New York on her first three voyages is an excellent one as is shown by the following record:

| Voyage No. | Departure from Whampoa | At Java Head | Arrival at New York | Length of Passage in Days | | | | |
|------------|------------------------|---------------|---------------------|---------------------------|-------------------|------------------|-----------------------|---------------------|
| | | | | To Java Head | Java Head to Cape | Cape to New York | Java Head to New York | Total |
| 1 | Oct. 9, 1851 | Oct. 31, 1851 | Jan. 11, 1852 | 22 | 26 | 46 | 72 | 94 |
| 2 | Sept. 25, 1852 | Oct. 19, 1852 | Dec. 30, 1852 | 24 | 33 | 39 | 72 | 96 (reported 95) |
| 3 | Oct. 24, 1853 | Nov. 12, 1853 | Jan. 21, 1854 | 19 | 29 | 41 | 70 | 89 |

The average length of passage of these three consecutive runs from Whampoa to New York is 93 days, with an average deep-sea run from Java Head home of 71 $\frac{1}{3}$ days. On the *Stag Hound's* second voyage, however, the New York Webb-built clipper *Swordfish* of

1,036 tons, which had just beaten McKay's much-vaunted new extreme clipper *Flying Fish* of 1,505 tons by ten days on the Cape Horn passage to San Francisco (November 1851-February 1852), beat the *Stag Hound* by a strong six days on the passage from Whampoa home (the vessels sailed on the same day—September 25, 1852). The *Swordfish* made an 89-day passage to New York and was 70 days from Anjer (69 days from Java Head), beating the *Stag Hound* by about four days on the run down the China Sea and by from two to three days on the deep-sea run home from Java Head. On her fourth voyage, the *Stag Hound* participated in the British China tea trade, and in the run from Shanghai with tea to London her passage was much longer than that of either of the two American clippers *Rapid* (1,115 tons) and *Nabob* (1,246 tons), which sailed the nearest to her. It was evident throughout the life of the *Stag Hound* that Captain Richardson's original eulogy of her speed in comparison with that of other American ships was decidedly far-fetched. The *Stag Hound* was lost by fire in 1861 when carrying a cargo of coal from Sunderland, England, to San Francisco. However, following her appearance in the British China tea trade and a lay-up at Hong Kong in 1858 (which preceded her entry into general trade with Britain), the ship made the following two passages from China to New York, which were slow compared with her sailing performance of 1851-1854:

| Voyage No. | Departure | | Destination | | Length of Passage in Days |
|------------|-----------|---------------|-------------|---------------|---------------------------|
| | Port | Date | Port | Date | |
| 5 | Whampoa | Apr. 21, 1856 | New York | Aug. 21, 1856 | 122 |
| 6 | Foochow | Aug. 13, 1857 | New York | Dec. 4, 1857 | 113 |

The clipper ship *Panama III*, built by Thomas Collyer, New York, in 1853 (launched October 11) for N. L. & G. Griswold, New York, and the California and China around-the-world trade, was a well-modeled vessel of 1,139 tons, with sharp lines below water and a good flare above, being designed for both speed and seaworthiness. Her owners and command claimed that she was "the fastest ship afloat," and her various officers for many long years boasted that she had never met a ship at sea that could sail with her. In the fifties, the *Panama* did some fast sailing in the China trade, but the ship is credited with record passages of 86 days 17 hours from San Francisco to Liverpool and 56 days from Tome, Chile, to Liverpool and near record fast runs such as 74 days 8 hours from New York to Melbourne. She also made a transpacific passage of 37 days from San Francisco to Shanghai and a run from New York to San Francisco in 101 days; her average length of six passages over this Cape Horn course sailing west was only $111\frac{2}{3}$ days, and her longest run was 120 days. In 1860 she rounded the Horn (from 50° S. Atlantic to 50° S. Pacific) in only 8 days and in 1864 ran from New York to Cape Horn in 47 days. The *Panama's* first appearance in China was not in the trade for which she was designed, as freight rates were low from New York to California in late 1853; so she was put in transatlantic trade temporarily and then sent out to China. Sailing from Liverpool May 27, 1854, she arrived at Shanghai September 11 after a good passage of 107 days—considering the "sailing chances." The clipper did not participate in the British China tea trade, but loaded at Shanghai for New York and sailed October 27, 1854. Between this date and her arrival in New York on March 2, 1860 (a period of 5 years 4 months 2 days), the ship made the following four passages in the China trade, all being homeward runs:

| Last Lap of Voyage No. | Departure | | Arrival at New York | Passage in Days | Remarks |
|------------------------|-----------|---------------|---------------------|-----------------|---|
| | Port | Date | | | |
| 2 | Shanghai | Oct. 27, 1854 | Jan. 21, 1855 | $85\frac{1}{2}$ | $18\frac{1}{2}$ days to Anjer. $44\frac{1}{2}$ days to Cape. 67 days from Anjer. 41 days from Cape. 26 days from Anjer to Cape. |

(Continued on next page)

MERCHANT SAIL

| Last Lap of Voyage No. | Departure | | Arrival at New York | Passage in Days | Remarks |
|--|-----------|---------------|------------------------|--------------------|--|
| | Port | Date | | | |
| 3 | Foochow | Oct. 25, 1855 | Feb. 15, 1856 | 113 | 32 days to Anjer. 81 days from Anjer. |
| 4 | Shanghai | Dec. 12, 1856 | Mar. 19, 1857 | 97 | 20 days to Anjer. 77 days from Anjer. |
| 5 | Foochow | Dec. 6, 1859 | Mar. 2, 1860 | 87 | 9 days to Anjer. 42 days to Cape. 78 days from Anjer. 45 days from Cape. 33 days from Anjer to Cape. |
| Average of four homeward passages..... | | | | 95½ | 20 days to Anjer. 75½ days from Anjer. |

Voyage No. 4 was to Australia and return via China, and Voyages 3 and 5 commenced with Cape Horn passages to San Francisco, followed by transpacific runs to China. Whereas on Voyage No. 3 the *Panama*, after a passage of 51 days from San Francisco to Hong Kong, went to Foochow and loaded for home, on Voyage No. 5 she went from San Francisco to Shanghai in 37 days; thence to Melbourne and traded between China and Australia for some twenty-one months until she loaded at Foochow and sailed for home on December 6, 1859, reaching New York after an absence of 2 years 6 months 25 days.

After participating in the Cape Horn triangular trade (New York, San Francisco, and Liverpool), the *Panama* sailed from Liverpool in May 1862 for Shanghai and traded on the China coast between Shanghai, Foochow, and Hong Kong for about a year. Prior to her sale to Argentine owners in 1867, the *Panama*, with rig cut down and a small crew aboard and under "economy management," made the following two passages in the U.S.A.-China trade:

| Port | Departure | | Arrival at New York | Passage in Days | Remarks |
|-----------|----------------|--|------------------------|--------------------|---|
| | Date | | | | |
| Hong Kong | Aug. 1, 1865 | | Nov. 30, 1865 | 121 | 44 days to Anjer. 77 days from Anjer. 27 days from Anjer to Cape. 50 days from Cape to New York. |
| Whampoa | Sept. 20, 1865 | | Jan. 21, 1866 | 123 | 65 days to Cape. 58 days from Cape. |

The medium clipper ship *Phantom* of 1,174 tons, built at Medford, Mass., in 1852 as a Cape Horner, made seven passages in the U.S.A.-China trade, five being homeward-bound and two outward runs, of which the following is a digest:

| Departure | | | Destination | | Passage in Days |
|-----------|-------|----------|-------------|---------------|--------------------|
| Port | Date | | Port | Date | |
| Foochow | July | 26, 1855 | New York | Nov. 27, 1855 | 124 |
| Whampoa | Oct. | 17, 1856 | New York | Feb. 1, 1857 | 106 |
| New York | Mar. | 17, 1857 | Hong Kong | June 22, 1857 | 97 |
| Shanghai | Sept. | 10, 1857 | New York | Jan. 2, 1858 | 114 |
| Foochow | Nov. | 8, 1859 | New York | Feb. 26, 1860 | 110 |
| New York | Apr. | 26, 1860 | Shanghai | Aug. 3, 1860 | 99 |
| Shanghai | Oct. | 17, 1860 | New York | Jan. 29, 1861 | 104 |

The average length of the seven passages was 107.7 days, the average of the two out-bound runs—one to Hong Kong and one to Shanghai—being only 98 days. The average of five homeward passages was 111.6 days, the two from Shanghai averaging 107 days. Of the two runs home from Foochow, the one made in a fairly favorable season took 110 days, and the one negotiated in a decidedly unfavorable season required 124 days.

Another Medford-built medium clipper ship, the *Sancho Panza* (876 tons), launched August 5, 1855, which had a reputation for encountering poor sailing weather, made six passages between American and China ports—two outward and four homeward-bound. The record of these passages is presented herewith:

| Departure | | Destination | | Passage in Days |
|-----------|---------------|-------------|----------------|--------------------|
| Port | Date | Port | Date | |
| Foochow | Dec. 10, 1856 | Boston | Mar. 30, 1857 | 110 |
| Woosung | Nov. 13, 1858 | New York | Feb. 22, 1859 | 101 |
| New York | Apr. 24, 1859 | Hong Kong | Aug. 1, 1859 | 100 |
| Woosung | Dec. 28, 1859 | New York | Apr. 8, 1860 | 102 |
| Boston | May 25, 1860 | Hong Kong | Sept. 21, 1860 | 119 |
| Foochow | Jan. 1, 1861 | New York | Apr. 13, 1861 | 102 |

On the 1858-1859 passage of 101 days from Woosung to New York, the *Sancho Panza* was 20 days to Anjer and would have made a fast run of about 72 days from Anjer to New York had she not experienced ten days of heavy gales between Hatteras and New York. The ship had her Sandy Hook pilot aboard for three days before he could take her into New York Harbor, and the passage was 98 days to pilot. On the last of her six passages in the American China trade, the *Sancho Panza* was 22 days from Foochow to Anjer and 24 days to Java Head, experiencing a terrific and damaging typhoon in the China Sea. The ship made a fast run from Java Head to 30° N. Atlantic, where she encountered ten days of northerly gales and heavy seas. The average length of the *Sancho Panza's* two outward China passages, both to Hong Kong, was 109½ days, and of the four homeward runs, 103¾ days, which is creditable sailing considering the weather, although all of these four passages originated in the favorable sailing season in the China Seas.

The clipper ship *Game Cock* of 1,392 tons, modeled by Pook and built by Hall, East Boston, in 1850, made six passages in the American China trade and made other runs between New York and East Indian and Indian ports. In 1859 she made a very fast mid-summer run of 19 days from New York to the Atlantic equator, 76 days to Java Head, and 78 days to Batavia, covering 337 miles in one day. Returning from Colombo to New York very deeply laden, the ship made 342 miles in one day by observation and is credited with covering 2,142 miles in seven consecutive days—an average of 306 miles per day. The following is a record of the six passages made by the *Game Cock* in the American China trade. Two were outbound runs from New York to Hong Kong and four homeward passages, three originating in Shanghai and one in Hong Kong.

| Departure | | Destination | | Passage in Days |
|-----------|---------------|-------------|----------------|--------------------|
| Port | Date | Port | Date | |
| Whampoa | May 20, 1852 | New York | Sept. 20, 1852 | 123 |
| Shanghai | Summer 1854 | New York | Fall 1854 | 111 |
| Shanghai | Dec. 30, 1855 | New York | Mar. 26, 1856 | 87 |
| New York | 1861 | Hong Kong | 1862 | 112 |
| Shanghai | Nov. 24, 1862 | New York | Mar. 15, 1863 | 111 |
| New York | 1869 | Hong Kong | 1869 | 92 |

The average length of the two outbound passages (New York to Hong Kong) was 102 days and of the three homeward runs from Shanghai, 103 days. One was in a very unfavorable season, but on this passage, which commenced in the summer of 1854, although the ship took 41 days beating down the China Sea, she ran home from Anjer in only 70 days. On her fast passage of 87 days from Shanghai, the *Game Cock* ran to Anjer in only 11 days and from Anjer to New York in 76 days. In the winter of 1862-1863, the ship lost the chance of a good run home from Shanghai by encountering very heavy westerly gales off the Cape of Good Hope and bad weather in the Atlantic. On her first run home from China,

the *Game Cock*, leaving Whampoa in the very unfavorable season, experienced poor sailing conditions throughout the passage.

The little medium clipper ship *Hotspur* (862 tons), built in New York in 1857 for New Bedford owners (later owned in New York), spent practically all of her life in the New York-China trade and has a good sailing record as the following brief account of her seven complete passages in that service clearly shows:

| Departure | | Destination | | Passage in Days | Remarks |
|-----------|---------------|-------------|---------------|--------------------|--|
| Port | Date | Port | Date | | |
| New York | Apr. 4, 1857 | Hong Kong | July 3, 1857 | 90 | Returned to New York in 107 days. |
| Hong Kong | Aug. 1857 | New York | Dec. 18, 1857 | 107 | Twenty-eight days to Anjer; 79 days from Anjer. |
| New York | Jan. 28, 1858 | Hong Kong | May 6, 1858 | 98 | Only fair sailing conditions. |
| Hong Kong | Oct. 31, 1860 | New York | Feb. 2, 1861 | 95 | Beat the SEA SERPENT by eight days on the run. |
| New York | Apr. 25, 1861 | Hong Kong | July 28, 1861 | 94 | Seventy-six days to Anjer; 18 days from Anjer. |
| Hong Kong | Jan. 25, 1862 | New York | May 13, 1862 | 100 (sailing) | Nine days to Batavia; 91 days from Batavia. Held four days off Sandy Hook. |
| New York | June 17, 1862 | Hong Kong | Oct. 24, 1862 | 129 | Bad sailing conditions throughout passage. |

The average length of these seven passages was 102 days. The four outward runs—all to Hong Kong—averaged a scant 103 days (average of the first three, only 94 days), and the three homeward passages from Hong Kong (one of which originated in the bad, one in the fair, and one in the good sailing season) averaged a scant 101 days. The best passage was a good run of 95 days, on which the *Hotspur* outsailed the *Sea Serpent* by nine days on the deep-sea passage and beat her by eight days on the complete run, port to port. The *Sea Serpent* had left Hong Kong one day after the *Hotspur* and caught up with her in the Straits of Sunda. On January 12, 1860, the *Hotspur* arrived at New York and reported a run of 85 days from Anjer and 45 days from the Cape. She was off the Cape November 28, at St. Helena December 6, 1859, and had experienced five days of northerly gales between the Bermudas and Hatteras. In 1861, when the *Hotspur* made a good 94-day passage from New York to Hong Kong, she ran even with the fast 600-ton bark *Maury* (which left New York two days behind her) over the deep-sea course to Anjer, both vessels covering this major part of the passage in 76 days. From Anjer to Hong Kong, however, the smaller *Maury* gained two days on the *Hotspur* covering the China Sea part of the course and made the run in 16 days as against 18 days for the *Hotspur*; the two vessels reached Hong Kong on the same day (July 28). The American bark *Maury*, in June-October 1856, beat the crack British tea clipper *Lord of the Isles* (770 tons) in a race from Foochow to London, during which passage, when crossing the Indian Ocean, the *Maury* covered 370 miles in one day and averaged over 272 miles per day for twelve consecutive days. In 1857 the *Maury* beat the fast American barkentine *Fairy* (629 tons; built in 1856) and all other competition in another passage from Foochow to London and had a reputation in both Britain and the United States for being "an exceedingly fast, sturdy and good-carrying China clipper"; therefore, the ability of the *Hotspur* to sail even with the *Maury* from New York to Anjer, following her defeat of the speedy big clipper *Sea Serpent* earlier in the year over the same course running home, proves that the *Hotspur* was a fast sailer.

The passage of the clipper ship *Mischief* (548 tons; built in 1853 at Somerset, Mass.) from Foochow, China, to Sandy Hook, New York, from September 14, 1854, to January 5, 1855, is illustrative of an interesting sort of passage made by a small full-rigged ship in the China trade during the height of the clipper ship days. After the first few days of the voyage, light baffling or variable winds with squalls of rain prevailed until October 20, when the

Mischief came to anchor in Anjer Road. Up to this time, the best day's run was 233 nautical miles and the poorest, 32 miles. She anchored several times, offered assistance to the Dutch bark *Henri Wersie* ashore on Pulo Leat, beat the British clipper *Aurora* and the American ship *Archer* in sailing, and had a serious mutiny aboard following her arrival in the Straits of Sunda. The *Mischief* was evidently at the northern entrance to the Straits on October 18 (34 days from Foochow), but she did not clear Java Head until October 22 and was 75 days from there to Sandy Hook, where she was detained, and it was January 7, 1855, before she anchored in New York Harbor, 115 days out from Foochow. A synopsis of the deep-sea run of the vessel from Anjer to New York is given herewith. The time stated by the log is 75 days; distance sailed, 13,913 miles; average distance per day, 185½ miles; best day's run, 291 miles.

| Speed per Hour Knots | Nautical Miles Covered per Day | Number of Day's Runs in This Dis- tance and Speed Range | Speed per Hour Knots | Nautical Miles Covered per Day | Number of Day's Runs in This Dis- tance and Speed Range |
|--------------------------------|--------------------------------------|---|--------------------------------|--------------------------------------|---|
| Less than 3 | Less than 72 | 3 | Less than 4 | Less than 96 | 5 |
| Between 3 and 4 | 73-96 | 2 | Between 4 and 6 | 97-144 | 13 |
| " 4 " 5 | 97-120 | 2 | " 6 " 8 | 145-192 | 24 |
| " 5 " 6 | 121-144 | 11 | " 8 " 10 | 193-240 | 18 |
| " 6 " 7 | 145-168 | 9 | " 10 " 12 | 241-288 | 10 |
| " 7 " 8 | 169-192 | 15 | Over 12 | Over 288 | 3 |
| " 8 " 9 | 193-216 | 9 | Total number of full days..... | | 73 |
| " 9 " 10 | 217-240 | 9 | Less than 4 | Less than 96 | 5 |
| " 10 " 11 | 241-264 | 7 | Between 4 and 8 | 97-192 | 37 |
| " 11 " 12 | 265-288 | 3 | " 8 " 12 | 193-288 | 28 |
| Over 12 | Over 288 | 3 | Over 12 | Over 288 | 3 |
| Total number of full days..... | | 73 | Total number of full days..... | | 73 |

Percentage of days of the passage that showed a speed of 4 knots per hour or less, 6.8; over 6 knots, 75.3; over 8 knots, 42.5; over 10 knots, 17.8; over 12 knots, 4.1.

| | Miles | Average Speed Knots per Hour | Date |
|--------------------------|-------|---------------------------------|-------------------|
| Best day's run | 291 | 12.1 | Nov. 19 |
| Best 2 consecutive days | 568 | 11.8 | Oct. 27-28 |
| " 3 " " | 846 | 11.7 | " 26-28 inclusive |
| " 4 " " | 1,115 | 11.6 | " 25-28 " |
| " 5 " " | 1,374 | 11.4 | " 25-29 " |
| " 6 " " | 1,637 | 11.3 | " 25-30 " |
| " 7 " " | 1,865 | 11.1 | " 25-31 " |
| Poorest day's run | 72 | 3.0 | Dec. 16 |
| Worst 2 consecutive days | 188 | 3.9 | " 17-18 |
| " 3 " " | 294 | 4.1 | " 16-18 inclusive |
| " 4 " " | 468 | 4.9 | " 16-19 " |

During the seven consecutive days Dec. 20-26 inclusive, the vessel sailed 1,639 miles, an average of 234 miles per day and 9.7 knots per hour, and for the four-day period Dec. 20-23 inclusive, she covered 993 miles, an average of 248 miles per day and 10.3 knots per hour.

This was the only passage made by the *Mischief* in the China trade. In 1853 the little clipper had done some good sailing in the North Pacific and on one transpacific passage ran from the Loo Choo Islands to San Francisco in the very fast time of 29 days. Following her arrival at New York from Foochow in January 1855, the *Mischief* crossed the Atlantic to Bremen, where she was sold to the Germans. In the late sixties and seventies, she appears in the registry records as the Danish-owned bark *Sleipner*, hailing from Copenhagen.

The American ship *Florence*, built for J. M. and R. B. Forbes by Samuel Hall, East Boston, and launched February 23, 1856, was designated as a "medium clipper," but Robert Bennet Forbes, one of her owners and one of the greatest authorities in respect to the China

trade, said of her: "She is full enough to carry big cargoes, is modelled to be a good sea boat, is built strong to carry her cargoes well and stand driving, and has spars and sails so she can give a good account of herself and make relatively fast passages in the China trade. She has been designed and built, however, to make money rather than win fleeting honors by making record passages." Carl C. Cutler, in *GREYHOUNDS OF THE SEA*, says of the ship, which was of 1,045 tons:

The *Florence* was so full that she stowed nearly double her registered tonnage, whereas an extreme clipper could barely carry the equivalent of her register and many could not do that. Her fine passages were due almost entirely to her commander's predilection for carrying sail, for the period has

produced few [if any] harder drivers than Dumaresq. Instance after instance is recorded in her log of passing close-reefed ships while she went tearing by with royals and occasionally main sky-sail set.

Capt. Philip Dumaresq of the Kennebec River, Maine, was an extremely competent shipmaster and had a reputation for being a skipper who would drive his command to the utmost without the loss of spars and canvas. He had an uncanny sense of getting every bit of possible speed out of his ship, but knew exactly when to reef or take in sail. Dumaresq had had much experience in the China trade in old packets and small opium clippers and later had commanded such outstanding clippers as the speedy *Surprise* (1,261 tons; built in 1850), the *Game Cock* (1,392 tons; built in 1850-1851), and the *Romance of the Seas* (1,782 tons; built in 1853). Prior to the building of the *Florence*, Captain Dumaresq had given up going to sea, but at the earnest solicitation of his friends and former employers, he came out of his retirement (when over fifty-one years old) to superintend the building of the *Florence* and later take her to sea. Dumaresq stayed in the *Florence* until May 1859 (over three years) and gave up his sea life permanently when fifty-five years old, although he fell overboard from the steamer *Empire State* on a trip as a passenger going from Boston to New York and was drowned in June 1861. Capt. E. D. Wadsworth, who succeeded Captain Dumaresq in command of the *Florence*, did some good work with that ship and proved that the fine sailing record of the full-bodied and heavily canvased ship was not all due to her original command.

The fullness of model of the *Florence* has been exaggerated by historians, for instead of the ship's stowing, as claimed, "nearly double her registered tonnage," her owners reported that she "could load 1,650 measurement tons," which was 1.58 times her registered tonnage, and, of course, this was much in excess of her deadweight capacity. Captain Dumaresq seemed to enjoy writing in the log of any ship that he commanded how his vessel carried sail and passed other ships carrying much less canvas and proceeding cautiously. In the early forties, he took pride in slamming the full-modeled transatlantic packet ship out to China and back—"full sail in double reef gales." The *Florence*, with her buoyant ends and good flare forward, could stand much hard driving, and the ship well suited her original commander. On her second voyage, when she made a fast passage from New York to Java Head and Hong Kong, Dumaresq wrote in his log when she did her best day's run (298 miles) in the Indian Ocean: "Took in and set royals occasionally." The next day, when his ship made 260 miles, the log tells us: "Passed two barks under reefed courses standing the same way, we having topgallant studding-sails and royals set." On the return passage from Shanghai, the ship was 49 days out before Dumaresq took in the royals for the first time during the passage, and reaching New York he wrote: "Topsail halyards started only once, and then only to single reef." On her third voyage (New York to Penang), we are told, the topsail halyards were started only once and then to take in a single reef for a few hours, and the ship made 310 miles in one day near the Cape of Good Hope. On the 17th day out from New York, the *Florence* made 259 miles, and the log reads: "Passed a ship under topsails bound in the same direction, we having royals set." On Dumaresq's last passage in the ship, which was a run from Shanghai to London with a cargo of Japanese vegetable wax aboard and not the usual China tea, the *Florence* outsailed

every ship that she encountered. When 17 days out, she passed a British ship which had left port thirteen days before her, and on the 43rd day from Shanghai she went by another ship that was 55 days out from the same port of departure. The *Florence*, during this run, had passed a bark under topsails and topgallants while she had royal studding sails set, and the next day she passed a ship under double reefs while she was "under topgallants and flying jib." The *Florence* was within nine days of her destination before she "took single reefs in her topsails for the first time from China." The following is a record of the passages of the *Florence* in the China and East Indian trade when under the command of Captain Dumaresq:

| Voyage No. | Departure | | Destination | | Passage in Days | Remarks |
|------------|--------------------|---------------|----------------|---------------|---------------------|---|
| | Port | Date | Port | Date | | |
| 1 (out) | Boston | Apr. 5, 1856 | Hong Kong | July 5, 1856 | 91 | To Java Head, 76 days; from Java Head, 15 days. Cape to Java Head, 22 days. Best day's run, 296 miles. |
| 1 (home) | Shanghai | Dec. 12, 1856 | New York | Mar. 22, 1857 | 100 | Favorable season in China Sea, but light winds. |
| 2 (out) | New York | Apr. 29, 1857 | Hong Kong | Aug. 1, 1857 | 93 days 8 hours | Seventy-six days to Anjer; 17 days from Anjer. Logged 12,474 miles to Java Head. Best day's run, 298 miles. |
| 2 (home) | Shanghai | Dec. 4, 1857 | New York | Mar. 18, 1858 | 104 | Pilot to pilot, 104 days. To Java Head, 20 days. To Cape, 57 days. To equator, 77 days. |
| 3 (out) | New York | Apr. 22, 1858 | Penang | July 12, 1858 | 81 days 10 hours | Logged 14,757 miles; averaged 179 miles per day. Best day's run, 310 miles. |
| 3 (return) | Shanghai (Woosung) | Dec. 26, 1858 | Deal London | Apr. 2, 1859 | 97 | Thirteen days to Anjer; Java Head, 16 days out; Cape, 44 days out; equator, 68 days out; at Mother Bank, 92 days out. |

All of these passages were extremely fast for a ship with as full a model as the *Florence* and with her sailing chances. The average time for the two runs out to Hong Kong was 92 days and of the two passages from Shanghai to New York, 102 days. A comparison of the two first complete voyages of the *Florence* in the U.S.A.-China trade, under Captain Dumaresq, is stated herewith:

| Passage | Voyage No. 1 | Voyage No. 2 |
|---------------------------|--------------|--------------|
| Boston to Hong Kong..... | 91 days | 93 days |
| Shanghai to New York..... | 100 days | 104 days |
| Total round voyage..... | 191 days | 197 days |

Captain Wadsworth took the *Florence* out from London (sailing May 24, 1859) to Hong Kong in 101½ days. Returning to England in the British tea trade, she left Whampoa December 12, 1859, and was 12 days to the Straits of Sunda and at her London discharging dock on March 23, 1860, after a passage of 102 days, port to port; no British ship anywhere near equaled her performance on this run, the only competition offered being that of the full-bodied American ship *Sultan*, which made a very fine run of 103 days from Shanghai (October 22) to London (February 2, 1860). The new crack British tea clipper *Falcon* (794 tons) is credited with the fastest British passage of the year from Shanghai (106 days)

and the *Kate Carnie* (576 tons) from Whampoa (106 days). On May 3, 1861, the *Florence* arrived at New York, 102 days from Foochow. She made a passage in the unfavorable season of 125 days from Whampoa to New York and because of the war was sold to the British and renamed *Hypatia*. She was later the Norwegian bark *Hypatia* (hailing port, Skien) and was in the North Atlantic timber trade until wrecked in 1887, when over thirty-one years old.

The Chinese Coolie Trade

The Chinese coolie trade, owing to the weak Chinese governments, with their grasping, unscrupulous officials on the one hand and avaricious, unprincipled representatives of believably highly civilized occidental races on the other, was in reality a more or less camouflaged continuation of the African slave trade. The Chinese coolie was enslaved by deception and fraud; presumably, he contracted to sell his labor for a stated period of years for a stipulated pay and was promised food and free transportation both to and from the foreign country in which he agreed to work. The coolie walked as a free man aboard a ship that was to transport him to the country where he had agreed to work for (1) his food, (2) an agreed-upon sum of money, and (3) his return passage home. However, he was soon disillusioned—often before he had been on the coolie ship more than a few days and sometimes before the ship sailed, but always before he had begun to work on the wonderful foreign job that had lured him away from his home. The Chinese coolies were treated far worse on the tropical plantations to which they were often transported than were Negro slaves, for the Negroes were legal property and represented a greater capital investment that had to be protected and maintained in good productive physical condition. The Chinese coolie was the only labor that could be obtained to work the filthy Peruvian guano (excrement of sea fowl) deposits, and it was here that the depravity, inhumanity, and fraudulent characteristics of the Chinese coolie system became conspicuously evident and were given publicity. Notwithstanding the tremendous number of Chinese coolies taken to the Chincha Islands to dig and handle guano, it appears that only about 600 had survived and were on the islands when their importation was prohibited by the great powers in 1858 because of the fiendish cruelties perpetrated on them by their Peruvian taskmasters. But few Chinese "emigrants" lived more than a few months at the guano deposits. They were required to dig five to eight tons a day and were driven in a polluted atmosphere of guano dust by the whips of cruel overseers until they died by suicide or through exhaustion, starvation (because of an insufficient food supply), or breathing the guano dust. An excellent description of the Peruvian Chincha Islands and the guano trade, written by an Englishman in November 1853 on a ship then loading and printed in Littel's *LIVING AGE*, says:

The guano is dug by Chinese coolies who are brought here by English ships from the free ports of their native coasts. The poor fellows are made to believe that they are going to do well by engaging to serve as laborers for five years at a "real" (York-shilling) a day, and a scanty allowance of rice. The Peruvian Government place them on these islands, avowedly under their original contract, to labor for five years. The truth is, the poor Chinamen are sold into absolute slavery—sold by Englishmen into slavery—the worst and most cruel perhaps in the world. Here are about eight hun-

dred of the unfortunate creatures at work on these islands at a time; as fast as death thins them out, the number is increased by new importations. The labor is severe. They are kept at hard work, in the hot sun, throughout the day, are "stinted," each one, strong and weak alike, to dig from the hill and wheel to the manqueras five tons of guano, each, per day (it has to be wheeled from a hundred yards to a quarter of a mile). Negro drivers—the most ugly looking blacks with heavy thongs are stationed among them. The poor coolies have no hope of reward—no day of rest. [The over-

seer, Kossuth, admitted that more than sixty Chinese coolies a year committed suicide.] These poor creatures are deceived and sold by Englishmen into a servitude from which they almost daily seek escape through death. The worst slavery that exists among the civilized nations of the earth is main-

tained by the British subjects who transport Chinese coolies to the Chincha Islands. The taking and selling of free men to such taskmasters as these Peruvians, is an outrage to humanity and a reproach to British rule.

As English cruisers were known to be patrolling the seas at the time to put a stop to Negro slavery, the visitor to the Chincha Islands wrote in 1853: "Let the next slaver the English cruisers capture be some one of their own ships with a cargo of Chinese coolies for this market."

United States-owned ships evidently betrayed little or no interest in the Chinese coolie trade as long as they could obtain freights of the usual nature, and a coolie ship was held by both American owners and shipmasters to be in a category but little above that of a slave ship, which was generally despised. When the clipper shipbuilding boom in the United States following the Gold Rush to California resulted in such a tremendous floating tonnage that return freights to some North Atlantic port from the Pacific ports of China, the Philippines, etc., became not only extremely difficult but also, at times, absolutely impossible to obtain, the high-class new American ships degenerated to the carrying of Peruvian guano—the filthiest and most despised cargo that could be placed in a vessel. Large numbers of vessels, running at times into the hundreds, would lie around the Chincha Islands off the coast of Peru and resort to trickery and graft in order to obtain a cargo with fair dispatch to carry at a profit eastward around Cape Horn to an American or European port, where the fertilizer was in demand. As early as the fall of 1853, a passenger on the British ship *Albus* wrote from the Chincha Islands: "We arrived here from Callao Oct. 3 and found a fleet of nearly 200 sail, all but three or four English and American." So many ships became dependent upon guano for a cargo on the return passage of a California voyage that ship-owners and masters became more interested in getting the filthy freight aboard than they were in the human phases associated with its digging and the wretched slavery of the Chinese coolies, and we find that in 1855 splendid American clippers of the "top-flight" were competing in the coolie trade with British coolie carriers and actually transporting coolies from China to work on the Peruvian deposits.

The firm of Sampson & Tappan, of Boston, which owned some of the finest American clipper ships, put two of its big, new vessels in this trade. The *Westward Ho* (1,650 tons) was chartered to carry 800 coolies from Swatow to Peru, and she reached Callao in early February 1856. The *Winged Racer* (1,767 tons), which arrived safely at Callao on March 19, 1856, was ready to sail with 700 coolies from Swatow in mid-December 1855, when the human cargo showed signs of mutiny, and Captain Gorham, of Barnstable, Mass., the clipper's skipper, is reported to have flogged 60 of them one morning. The news of this episode caused such adverse comment in Boston that Sampson & Tappan, the owners, issued a statement saying that in 1854 they had sent an agent to investigate the Chinese coolie trade and, based on his findings and report that the trade was perfectly legitimate, if properly conducted, they had written to Captain Hussey of the *Westward Ho* and Captain Gorham of the *Winged Racer* to fill up with coolies, stipulating, however, that the coolies should not be employed in the Peruvian guano islands trade. Later, they had written forbidding the carrying of coolies, but the vessels were under contract and loaded, so each clipper made one Chinese coolie passage—and each was in the Peruvian trade, which the owners asserted they had tabooed. Public opinion, however, was sufficiently strong and articulate in Massachusetts to cause Sampson & Tappan to make no more ventures in the Chinese coolie trade.

As early as 1856, the Peruvians (who were not a seagoing nation and preferred to have more experienced maritime powers do their foreign trade shipping for them) became the owners of an American clipper. This pioneer vessel of their American-built coolie fleet was

the clipper ship *Climax* (1,051 tons; built in 1853), which, when two years old, sank in Callao Harbor and was sold as she lay to Peruvians, who raised her, renamed her the *Antonio Terry*, and put her in the Chinese coolie trade. The attitude of the great powers caused the Peruvians in 1857 to seek to develop their own Chinese coolie fleet and be independent of American and British carriers. The clipper ship *Westward Ho*, one of the world's best and fastest vessels, which had already made a successful passage in the China-Peru coolie trade, sailed in May 1857 from San Francisco to Callao, where she was purchased and went under the Peruvian flag as a coolie clipper. On her first coolie passage under Peruvian colors, the *Westward Ho* took a cargo of Chinese coolies from Hong Kong to Havana so that Peruvian observers could note the conditions in the Chinese-Cuban coolie trade, but all her voyages thereafter were between China and Peru.

The beautiful clipper ship *Gazelle* (1,244 tons), after a dreadful experience in a China Seas typhoon in which, because of bad loading, she was almost overwhelmed, reached Hong Kong in late 1854 and, following a survey, was condemned as a total wreck. She was sold, rebuilt, renamed *Cora*, and in 1857 was under the Peruvian flag carrying Chinese coolies to the Chincha Islands. The Maine-built clipper ship *White Falcon* (1,372 tons) was sold at San Francisco in early 1864 to the Peruvians for carrying coolies from China to the Chincha Islands guano deposits and was renamed *Napoleon Canavero*. On a passage from China to Callao in early 1866, her cargo of coolies became rebellious and was secured below decks with battened-down hatches. Rather than be suffocated, the coolies set fire to the ship. The officers and crew left the doomed vessel in small boats and were picked up at sea, but 650 coolies perished horribly, as the ship was absolutely destroyed by fire. The medium clipper ship *Starlight* (1,153 tons), launched at South Boston in February 1854, was sold at San Francisco in late 1864 to the Peruvians to be used to transport coolies from China to the guano deposits of Peru; she was renamed *R. Protolongo*. The medium clipper ship *Twilight* (1,482 tons), launched at Mystic, Conn., in October 1857, was sold at San Francisco in early 1865 to the Peruvians for use in transporting Chinese coolies to the guano deposits; she was renamed *Compania Maritima del Peru No. 1*. The extreme clipper ship *Telegraph* (1,078 tons), soon after her arrival at San Francisco in August 1865, was bought by the Peruvians for the Chinese coolie trade and became *Compania Maritima del Peru No. 2*.

The entire Chinese coolie trade, which flourished as far as British shipping is concerned for many decades and in which American ships participated in the 1850's and 1860's, was but slightly removed from the slave trade, was morally reprehensible, and in more ways than one "smelt to heaven." A very few splendid American clippers, during the shipping depression (caused primarily by overbuilding in the Gold Rush boom years), actually degenerated into "out-and-out" African Negro slavers. The beautiful yacht-like clipper *Nightingale* (1,060 tons), which during her career was "in every known trade and served in every capacity," apparently was never actually a coolie ship, but she went even further and when under American colors was captured in April 1861 by the U.S.S. *Saratoga*, off the African coast, with 961 Negro slaves aboard. Another fine American extreme clipper, the *Sunny South* (776 tons), launched in October 1854, was sold in Havana in 1859, and she became a real slaver; for when she was captured by a British sloop of war in August 1860, it was reported that she had "over 800 slaves aboard."

No plantation, mining, or construction work for which Chinese coolies were transported could even approach, as far as the horrors and inhumanity of employment were concerned, the diabolical and deadly conditions existing in the digging and handling of the Peruvian Chincha Islands guano deposits; yet the obtaining of these coolies by fraudulent means (their "kidnapping") and their handling as human cargoes on ships that transported them from China across the seas to some contracted destination, were just as depraved in the West Indian and Australian trades as in the Peruvian. American ships whose owners, because of public opinion in the United States (and later concerted action by the great powers), tabooed the transport of coolies to Peru, nevertheless, handled Chinese coolies obtained, shipped,

and treated in the same way as those destined for the Peruvian guano deposits, provided they were transported to any part of the world other than Peru.

Edgar Holden, writing in *HARPER'S Magazine* (June 1864), says that "the term 'coolie' is merely a European title for the lowest type of laborers in most Eastern countries"; that although the Indian coolie trade was a large one and was dominated and handled selfishly by the British, "the coolie trade that has excited the greatest interest and developed the worst atrocities" was the Chinese. The lowest class of Chinamen was collected under every variety of pretext (there being no government superintendence or protection) and shipped to Peru and the adjacent Chinha Islands or to Cuba. They were transported to market and sold for a price, "sometimes as high as three hundred dollars, though I have rarely known them to cost more than eighty on board ship." The terms, it is said, upon which these coolies were induced to leave their country were: "Their transportation to be free; they were to be bound for seven years at a salary of eighteen dollars a year, and at the end of their term of service they were to be free: that time [if they were still alive], however, was sure to find them each deeply in debt to his master, and his chance of escape rendered each day more and more distant." We are also told:

Vessels were known, in 1856 and 1857, to kidnap full cargoes [of Chinese coolies] within sight of Macao [Portuguese China]. Owners of vessels from American ports would enter into contracts with parties in the West Indies or South America

to transport coolies at from fifty to eighty dollars a head, freighting the ships often for some other than a Chinese port, but eventually arriving at Macao or Hong Kong, fitted and ready for the trade.

In 1857 the large American ship *Norway*, a packet type of vessel of nearly 3,000 tons, took a cargo of coal from New York to the U. S. naval squadron in the China Seas and, after taking coolies from China to Australia to work in the mines, returned to Macao to transport a human cargo of 1,037 coolies from Macao to Cuba. The coolies rebelled at their treatment, and there were floggings and suicides. They mutinied and sought to set fire to the ship, and when she reached her destination, the mortality of the passage was found to be 130 coolies, with 70 of them killed by the ship's crew. In 1857 the Baltimore-built medium clipper ship *Kate Hooper* (1,488 tons), bound from China to Havana with a cargo of 600 coolies, had frequent mutinies aboard; four of the Chinamen were shot by the ship's officers, and a fifth was hanged. The clipper ship *Flora Temple* (1,915 tons) left Macao October 1859 for Havana with coolies who were mutinous. Just before the Chinese put a plan into effect to try to seize the ship, she struck an uncharted rock and foundered; 18 whites (out of 49) and 850 coolies were drowned. The clipper ship *Sea Witch* (908 tons) sailed from Amoy on December 1, 1855, with 500 Chinese coolies aboard bound for Havana and was wrecked March 28 on a reef, becoming a total loss when within twelve miles of her destination.

Joshua N. Rowe, of Rockland, Maine, second mate on the ship *Crystal Palace*, wrote in 1858:

The coolie trade is just as bad as the slave trade, only it has a different name. The coolie agents in China give them to understand that they [are] going to a country where they will get aplenty of gold, and they must work for a certain number of years (10) to pay for their passage. They consent and are taken on board and are carried to the West Indies, Chinha Islands, the Isle of France and other places and obliged to work hard in the rice swamps &c, and 9 cases out of 10 they do not live to work out their time, and the few that do their constitution is gone and they are glad to get home to die. Yet it is a good thing for the planters, for they only pay 150 or 200 dollars for them in the first place and they get all their work out of them and are not obliged to keep them in their old age. But if they bought negroes they would

pay 800 to 1000 dollars apiece for them and would have to keep them when they were old. So the chances are 5 to 1 in favor of the coolies. They sometimes find out the Captain of the ship's intention and raise a mutiny. Several ships have been taken by them, a short time ago a ship came into Batavia after a double crew. She was a large clipper ship with 700 on board. They attempted to take the ship. The Captain, officers and crew had a hard fight, they succeeded in putting them down. They shot one and hung another at the yard arm. Another ship the Captain was taken sick and the Chinese arose, and the mate put on the hatches. The next morning he hoisted out of the hold 260 dead Chinese and hove them overboard. They suffocated during the night.

As early as 1852, such high-class tonnage as the magnificent big new American clipper *Challenge* (2,006 tons) carried 553 Chinese coolies from Hong Kong to San Francisco. The run was a short one of only 34 days, and the Chinamen, although badly crowded, were at least treated like human beings and fully as well as or better than the emigrants that were carried out to Australia on British ships during the colonial Gold Rush. Later, in 1856-1857, during the shipping depression, the *Challenge* carried 800 Chinese coolies from Hong Kong to Melbourne and 900 from Swatow to Havana; on this latter passage, there was a mutiny aboard and at least one suicide, and 150 coolies were reported as "sick" as a result of the voyage, with its overcrowding and inhuman treatment. The clipper ship *Queen of the Seas* (1,356 tons), in January 1857, loaded Chinese coolies at Hong Kong for Melbourne, Australia, and apparently found the trade profitable, for in the fall of 1857 she carried another load of human freight to the British colony. The extreme clipper ship *Messenger* (1,351 tons), owned by William Platt & Company, Philadelphia, was admittedly engaged in what was called "kidnapping coolies" on the China coast during the late 1850's and early 1860's. In 1860 she landed her human freight at Havana after a passage of 105 days and on the following voyage carried 544 coolies from China to Havana in 102 days.

Chinese coolies were transported across the Pacific to work as laborers in the Northwest, but few records are in existence regarding these cargoes of human freight. The medium clipper ship *Starr King* (1,171 tons), which reached San Francisco in June 1856 after completing a 44-day passage from Hong Kong, apparently was in the coolie trade; for although she reported some rice, sugar, and merchandise in her holds, she had "375 Chinese passengers" aboard. This same ship arrived at San Francisco in May 1860 after a run of 40 days from Hong Kong, and while she reported some merchandise aboard, her prime cargo was evidently "380 Chinese passengers" (or coolies). The clipper ship *Norwester* (1,267 tons) arrived at Hong Kong February 25, 1861, in only 37 sailing days from San Francisco, and her cargo consisted of 500 Chinamen, who were apparently Chinese coolies being returned to their native country. The clipper ship *Ringleader* (1,154 tons) left Hong Kong for San Francisco May 3, 1863, with her cargo consisting only of Chinese coolies. This fact was given publicity because the ship was wrecked on the Formosa Banks and attacked by piratical Chinese fishing boats. The coolies were driven ashore and the helpless ship pillaged. The clipper ship *Don Quixote*, which reached San Francisco September 15, 1863, carried 200 of the *Ringleader's* coolies and an additional 400 picked up at Simoda that had been aboard the clipper *Viking*, which had left Hong Kong May 17, 1863, loaded with human freight for San Francisco. The *Viking* was wrecked on Princess Island, but all aboard were saved by the U.S.S. *Wyoming* and landed at Simoda.

U.S.A.-China Clipper Ship Passages, 1850-1865

Tables have been compiled giving comparative data of clipper ship passages in the China trade during the 1850's and up to and including the years of the Civil War and the virtual discontinuance of such passages. Only an insignificant percentage of these passages were made in U.S.A.-China round voyages, and most of the runs were home from China and formed a leg of a voyage, with the passage out generally via Cape Horn to San Francisco, although occasionally the outbound passage was from an East Coast U.S.A. port to Australia. The list of passages recorded herewith is not complete, but covers merely those runs of which reliable data have been found available. It is evident that whereas an overwhelming percentage of the fast passages made are recorded herewith, many medi-

ocre and slow runs are not mentioned, even though an attempt has been made to have the tables include all completed passages for which data could be readily found without regard to the time and relative quality of the runs—good, fair, or poor. The number of passages (homeward, outbound, and total) for each of the years 1850-1865 for which data are given in the following tables is set forth herewith:

| Number of Passages | | | | Number of Passages | | | | Number of Passages | | | | Number of Passages | | | |
|--------------------|------|-----|-------|--------------------|------|-----|-------|--------------------|------|-----|-------|--------------------|------|-----|-------|
| Year | Home | Out | Total | Year | Home | Out | Total | Year | Home | Out | Total | Year | Home | Out | Total |
| 1850 | 8 | 2 | 10 | 1854 | 28 | 4 | 32 | 1858 | 12 | 4 | 16 | 1862 | 14 | 4 | 18 |
| 1851 | 10 | 1 | 11 | 1855 | 30 | 1 | 31 | 1859 | 22 | 9 | 31 | 1863 | 7 | 1 | 8 |
| 1852 | 36 | 1 | 37 | 1856 | 20 | 5 | 25 | 1860 | 13 | 6 | 19 | 1864 | 1 | — | 1 |
| 1853 | 19 | 2 | 21 | 1857 | 16 | 11 | 27 | 1861 | 10 | 6 | 16 | 1865 | 7 | — | 7 |

The total number of U.S.A.-China passages enumerated is 310, of which 253, or 81½ per cent, are homeward and 57, or 18½ per cent, are outward runs. It is significant that, with the California Gold Rush and the demand for tonnage for the Cape Horn run to California to carry both freight and passengers, practically all the passages in the American China trade (92 per cent) during the period 1850-1855 inclusive were homeward runs that completed voyages made primarily to San Francisco, but included some made to Australia following the Victoria gold find and the colonization boom. During the period 1857-1861 inclusive (ending prior to the Civil War), 67 per cent of the recorded passages in the U.S.A.-China trade were homeward-bound runs and 33 per cent outward-bound.

The following is a record of a large percentage of the passages made by American clippers (or reputed clippers) in the United States-China trade—both homeward and outward—during each of the years as stated:

| Name of Clipper | Tonnage | Built (launched) | From | To | Passage in Days | Remarks |
|--------------------------------------|---------|------------------|------------------|------------------------|-----------------|---|
| <i>Homeward-bound Passages, 1850</i> | | | | | | |
| ORIENTAL | 1,003 | Summer 1849 | Whampoa Jan. 20 | New York Apr. 21 | 81 | Eleven days to Anjer; 70 days from Anjer; 42 days from Cape. |
| SEA WITCH | 908 | Dec. 8, 1846 | Whampoa Dec. 12 | New York Mar. 7, 1851 | 85 | Twelve days to Anjer; 73 days from Anjer. Last lap of fourth voyage. |
| SAMUEL RUSSELL | 957 | Summer 1847 | Whampoa Oct. 29 | New York Jan. 26, 1851 | 89 | Nineteen days to Anjer; 70 days from Anjer; reported as 88 days; 17 days from line. |
| HOUQUA | 583 | May 3, 1844 | Shanghai Oct. 24 | New York Jan. 20, 1851 | 88 | Was detained four days by heavy N.W. gales north of Hatteras. Beat ONEIDA by eighteen days. |
| RADUGA | 587 | 1848 | Hong Kong (fall) | New York (early 1851) | 101 | Return passage of a round voyage from New York to Hong Kong. |
| SAMUEL RUSSELL | 957 | Summer 1847 | Whampoa 1850 | New York Oct. 20 | 102 | A fine out-of-season passage. |
| ARCHITECT | 520 | 1848 | Hong Kong Aug. | New York Dec. | 108 | A good run made in a very unfavorable season. |
| HOUQUA | 583 | May 3, 1844 | Macao | New York | 109 | Sixty-seven days to Cape; 42 days from Cape. |
| <i>Outward-bound Passages, 1850</i> | | | | | | |
| ORIENTAL | 1,003 | Summer 1849 | New York May 18 | Hong Kong Aug. 8 | 81 | Seventy-one days to Prince's Straits and 10 thence to Hong Kong. Fastest passage ever made. |
| HOUQUA | 583 | May 3, 1844 | New York | Hong Kong | 90 | Returned to New York in 109 days from Macao. |

(Continued on next page)

MERCHANT SAIL

| Name of Clipper | Tonnage | Built (launched) | From | To | Passage in Days | Remarks |
|--------------------------------------|---------|------------------|----------------------|------------------------------|-----------------|---|
| <i>Homeward-bound Passages, 1851</i> | | | | | | |
| SHOOTING STAR | 903 | Feb. 8, 1851 | Macao Dec. 20 | Boston Feb. 15, 1852 | 86 | Last lap of maiden voyage around the world via San Francisco. |
| STAG HOUND | 1,534 | Dec. 7, 1850 | Whampoa Oct. 9 | New York Jan. 11, 1852 | 94 | Cleared Straits of Sunda in 22 days; thence 26 days to Cape; Java Head to New York, 72 days. |
| GAZELLE | 1,244 | Jan. 21, 1851 | Hong Kong Dec. 14 | New York Mar. 21, 1852 | 98 | Last lap of maiden voyage around the world via San Francisco. |
| SEA SERPENT | 1,337 | Dec. 1850 | Whampoa Oct. 16 | New York Jan. 24, 1852 | 100 | Eighteen days to Anjer; 82 days from Anjer. Last lap of maiden voyage around the world via San Francisco. |
| SEA WITCH | 908 | Dec. 8, 1846 | Whampoa Mar. 15 | New York June 25 | 102 | Last lap of Voyage No. 5; 19 days to Anjer; 83 days from Anjer. |
| ARGONAUT | 575 | Summer 1849 | Whampoa Sept. 4 | New York Dec. 18 | 105 | Beat everything sailing up to two weeks before to two weeks after her by from seven to twenty-five days. |
| SEA NYMPH (of Baltimore) | 537 | 1850 | Whampoa | New York | 110 | Last lap of maiden voyage around the world via San Francisco. |
| CELESTIAL | 860 | June 10, 1850 | Woosung Mar. 4 | New York June 29 | 117 | Last lap of maiden voyage around the world via San Francisco. |
| MANDARIN | 776 | June 1850 | Canton Apr. 4 | New York July 31 | 118 | Return passage of Voyage No. 2. |
| HOUQUA | 583 | May 3, 1844 | Shanghai Aug. 19 | New York Dec. 26 | 129 | Encountered very unfavorable sailing conditions. |

Outward-bound Passages, 1851

| | | | | | | |
|----------------|-----|-------------|----------|-----------|----|---|
| SAMUEL RUSSELL | 957 | Summer 1847 | New York | Hong Kong | 92 | Best day's run, 328 miles. Returned to New York in 95 days. |
|----------------|-----|-------------|----------|-----------|----|---|

The American pre-clipper or Chinese packet PANAMA I of 612 tons, built in 1844, left Shanghai (Woosung) Oct. 17, 1851, and made a run of 108 days to New York. The RADUGA (587 tons; built in 1848) made a passage from Batavia to Boston (1851-1852) in 97 days, being the last lap of her Voyage No. 4 from New York around the world via San Francisco, Honolulu, Shanghai, and Batavia.

Homeward-bound Passages, 1852

| | | | | | | |
|--------------|-------|----------------|----------------------|------------------------------|----|---|
| N. B. PALMER | 1,399 | Feb. 5, 1851 | Macao Jan. 10 | New York Apr. 3 | 84 | Left Canton Jan. 9. Passed Macao Jan. 10; 84 days to anchorage in New York Harbor. |
| ATALANTA | 1,289 | Spring 1852 | Hong Kong Dec. 16 | New York Mar. 10, 1853 | 84 | Nine days to Anjer; 75 days from Anjer to pilot off Sandy Hook. Crossed line 66 days out. |
| MERMAID | 533 | 1851 | Macao Mar. 13 | Boston June 8 | 87 | A fast clipper bark built by Samuel Hall, East Boston. |
| SEA SERPENT | 1,337 | Dec. 1850 | Whampoa Oct. 4 | New York Dec. 31 | 88 | Was within 50 miles of New York in 86 days. |
| SWORDFISH | 1,036 | Sept. 20, 1851 | Whampoa Sept. 25 | New York Dec. 23 | 89 | Nineteen days to Anjer; 70 days from Anjer. Beat STAG HOUND by six days. |

(Continued on next page)

| Name of Clipper | Tonnage | Built (launched) | From | To | Passage in Days | Remarks |
|--|----------------------------------|------------------|---------------------|---------------------------|-----------------|--|
| <i>Homeward-bound Passages, 1852—(Continued)</i> | | | | | | |
| MESSENGER | 1,351 | Apr. 22, 1852 | Whampoa Jan. 11 | New York Apr. 14 | 94 | Twenty-one days to Anjer; 73 days from Anjer; 17 days from equator to New York. |
| FLYING CLOUD | 1,782 | Apr. 15, 1851 | Whampoa Jan. 6 | New York Apr. 9 | 94 | Had a sprung mainmast. Upon arrival at New York, fore- and mainmasts and spars were replaced. |
| SAMUEL RUSSELL | 957 | Summer 1847 | Hong Kong Apr. 6 | New York July 10 | 95 | Twenty-five days to Anjer; 70 days from Anjer. |
| STAG HOUND | 1,534 | Dec. 7, 1850 | Whampoa Sept. 25 | New York Dec. 30 | 95 | To Anjer, 23 days; from Anjer, 72 days. Beaten by SWORDFISH four days in China Seas and two days from Anjer. |
| FLYING CLOUD | 1,782 | Apr. 15, 1851 | Whampoa Dec. 1 | New York Mar. 8, 1853 | 96 | To clearing Strait, 13 days. From Java Head, 83 days. Made 382 miles Dec. 21; two weeks in gales off Cape. |
| VANCOUVER | A small China pre-clipper trader | | Woosung Dec. 26 | New York Mar. 31, 1853 | 96 | Went from Foochow to London dock in 127 days in 1853. |
| COMET | 1,836 | July 10, 1851 | Whampoa May 6 | New York Aug. 11 | 97 | Fourteen days to Anjer; 83 days from Anjer. |
| SNOW SQUALL | 742 | 1851 | Shanghai | New York | 97 | A little Maine-built clipper that did some fast sailing as she grew older. |
| GAZELLE | 1,244 | Jan. 21, 1851 | Hong Kong | New York | 98 | Last lap of maiden voyage around the world via San Francisco. |
| PANAMA I | 612 | 1844 | Woosung Oct. 26 | New York Apr. 29, 1853 | 99 | An early Chinese packet built by Webb, New York. |
| EUREKA | 1,041 | Feb. 9, 1851 | Hong Kong Feb. 9 | New York May 20 | 101 | Last lap of maiden voyage around the world via San Francisco. |
| WHITE SQUALL | 1,119 | Summer 1850 | Whampoa Dec. 14 | New York Mar. 27, 1853 | 103 | Twenty-four days to Anjer; 79 days from Anjer. Lost spars near Gaspar Straits. |
| R. B. FORBES | 757 | July 31, 1851 | Whampoa Apr. 3 | New York July 16 | 104 | Last lap of maiden voyage of 224 days (Boston, Honolulu, Hong Kong, New York). |
| SEA NYMPH (of Baltimore) | 537 | 1850 | Shanghai Oct. 26 | New York Feb. 8, 1853 | 105 | Anchored New York 105 days out. Off Highland Light, 102 days out; 21 days to Anjer. |
| ORIENTAL | 1,003 | Summer 1849 | Shanghai Sept. 1 | New York Dec. 16 | 106 | Held 10 days off Cape in light airs; 28 days to Anjer. |
| SHOOTING STAR | 903 | Feb. 8, 1851 | Woosung Nov. 13 | New York Feb. 27, 1853 | 106 | Last lap of Voyage No. 2 around the world via San Francisco. |
| RAVEN | 711 | July 1, 1851 | Canton Mar. 22 | New York July 7 | 107 | Beat the SEA WITCH by three days. Unfavorable season. |
| ARIEL | 572 | 1846 | Woosung Sept. 2 | New York Dec. 18 | 107 | Made a close race with ORIENTAL. |
| MANDARIN | 776 | June 1850 | Woosung Feb. 19 | New York June 8 | 109 | Return passage of round voyage between New York and China. |
| SEA WITCH | 908 | Dec. 8, 1846 | Whampoa Mar. 21 | New York July 9 | 110 | Beaten by RAVEN by three days; sailing conditions unfavorable. |

(Continued on next page)

MERCHANT SAIL

| Name of Clipper | Tonnage | Built (launched) | From | To | Passage in Days | Remarks |
|--|---------|------------------|--------------------|------------------------------|-----------------|--|
| <i>Homeward-bound Passages, 1852—(Continued)</i> | | | | | | |
| HOUQUA | 583 | May 3, 1844 | Shanghai | New York | 111 | Return passage of round voyage between New York and China. |
| WITCHCRAFT | 1,310 | Dec. 21, 1850 | Shanghai | New York | 111 | Had been partially dismantled in North Pacific and new spars fitted made of teak-wood. |
| CELESTIAL | 860 | June 10, 1850 | Shanghai | New York | 115 | Passage made in most unfavorable season. |
| ARGONAUT | 575 | Summer 1849 | Shanghai Dec. 3 | New York Mar. 30, 1853 | 117 | Seventeen days to Anjer; 100 days from Anjer. |
| HORNET | 1,426 | June 20, 1851 | Whampoa | New York | 117 | Last lap of maiden voyage around the world via San Francisco, Panama, and Hong Kong. |
| SEAMAN'S BRIDE | 668 | June 25, 1851 | Shanghai Oct. 6 | New York Jan. 31, 1853 | 117 | Twenty-seven days to Java Head; 90 days from Java Head; 57 days from Cape. |
| ARAMINGO | 716 | 1851 | Shanghai Oct. 6 | New York Feb. 1, 1853 | 118 | Twenty-six days to Anjer; 92 days from Anjer. A close race with SEAMAN'S BRIDE. |
| ANTELOPE (of Boston) | 587 | 1851 | Shanghai | New York | 118 | Last lap of maiden voyage around the world via San Francisco. |
| JOHN WADE | 638 | Summer 1851 | Hong Kong | New York | 118 | Last lap of maiden voyage around the world via San Francisco. |
| COURSER | 1,024 | 1851 | Hong Kong Aug. | New York Dec. | 120 | Unfavorable season in East. Ran from Cape to New York in 38 days—a record then. |
| GAME COCK | 1,392 | Dec. 21, 1850 | Whampoa May 20 | New York Sept. 20 | 123 | Unfavorable conditions. Last lap of her maiden voyage. |

Outward-bound Passages, 1852

| | | | | | | |
|-------|-----|---------------|-------------------|-------------------------------|-----|--|
| LOTUS | 660 | Oct. 26, 1852 | Boston Nov. 30 | Hong Kong Mar. 24, 1853 | 115 | First passage of maiden voyage. Returned in 110 days from Macao. |
|-------|-----|---------------|-------------------|-------------------------------|-----|--|

The American clipper ship INO (895 tons; built 1851) made a run from Java Head to New York in 77 days in 1852; this was the last lap of a voyage around the world via San Francisco and part of a passage of 89 days from Singapore to New York.

Homeward-bound Passages, 1853

| | | | | | | |
|------------|-------|----------------|--------------------|------------------------------|----|--|
| MANDARIN | 776 | June 1850 | Woosung Feb. 19 | New York May 19 | 89 | To Anjer, 16 days; from Anjer, 73 days. |
| STAG HOUND | 1,534 | Dec. 7, 1850 | Whampoa Oct. 24 | New York Jan. 21, 1854 | 89 | Nineteen days to and 70 days from Java Head; 41 from Cape, 19 from line. |
| HIGHFLYER | 1,195 | Jan. 13, 1853 | Whampoa Dec. | New York Mar. 1854 | 90 | Last lap of maiden voyage around the world via San Francisco and Hong Kong. |
| GAZELLE | 1,244 | Jan. 21, 1851 | Hong Kong Dec. | New York Mar. 1854 | 91 | Last lap of Voyage No. 3 around the world via San Francisco and Hong Kong. |
| HURRICANE | 1,608 | Oct. 25, 1851 | Whampoa Feb. 12 | New York May 18 | 94 | To Java Head, 21 days; from Java Head, 73 days. Off Cape, 54 days and equator 72 days out. |
| SWORDFISH | 1,036 | Sept. 20, 1851 | Whampoa Oct. 15 | New York Jan. 20, 1854 | 97 | Typhoon in China Sea. Lost some spars and much canvas. |

(Continued on next page)

| Name of Clipper | Tonnage | Built (launched) | From | To | Passage in Days | Remarks |
|--|---------|------------------|-------------------|------------------------|-----------------|---|
| <i>Homeward-bound Passages, 1853—(Continued)</i> | | | | | | |
| BEVERLY | 676 | Apr. 19, 1852 | Shanghai Dec. | New York Apr. 1854 | 100 | Last lap of maiden voyage around the world via San Francisco and Shanghai. |
| SEA SERPENT | 1,337 | Dec. 1850 | Whampoa Sept. 10 | New York Dec. 20 | 101 | Twenty-nine days to Anjer; 72 days from Anjer. Very fast under conditions prevailing. |
| SAMUEL RUSSELL | 957 | Summer 1847 | Whampoa Apr. 10 | New York July 21 | 103 | Last lap of her voyage in California around - the - world trade. |
| STAR OF THE UNION | 1,057 | Dec. 1852 | Shanghai | New York | 105 | Twenty-four days to Anjer; 81 days from Anjer. |
| SEA WITCH | 908 | Dec. 8, 1846 | Woosung Mar. 11 | New York June 25 | 106 | Nineteen days to Anjer; 87 days from Anjer. |
| GOLDEN GATE | 1,349 | July 12, 1851 | Shanghai Sept. 26 | New York Jan. 10, 1854 | 106 | Twenty-eight days to Anjer; 78 days from Anjer. |
| JOHN WADE | 638 | Summer 1851 | Hong Kong Mar. 19 | New York July 3 | 106 | Last lap of her second around-the-world voyage via San Francisco and Hong Kong. |
| WILD PIGEON | 996 | July 31, 1851 | Whampoa (summer) | New York (fall) | 110 | Against unfavorable monsoon. Last lap of second voyage around the world via California and China. |
| LOTUS | 660 | Oct. 26, 1852 | Macao Apr. 15 | New York Aug. 3 | 110 | Fifteen days to Anjer; 95 days from Anjer. |
| COMPETITOR | 871 | Feb. 1853 | Whampoa Dec. 12 | New York Apr. 2, 1854 | 111 | Last lap of her maiden voyage around the world via San Francisco and Hong Kong. |
| RADUGA | 587 | 1848 | Whampoa May 5 | New York Aug. 25 | 112 | Last lap of a voyage around the world via San Francisco and Hong Kong. |
| TINQUA | 668 | Oct. 2, 1852 | Whampoa Aug. 15 | New York Dec. 9 | 116 | Forty-two days to Anjer; 74 days from Anjer. Had 12 days of gales north of Bermuda. |
| FLEETWOOD | 663 | 1852 | Shanghai Nov. 14 | Boston Mar. 18, 1854 | 124 | Forty-three days to Java Head; 81 days from Java Head. |

Outward-bound Passages, 1853

| | | | | | | |
|-----------|-----|--------------|-----------------|------------------|-----|---|
| ARGONAUT | 575 | Summer 1849 | Boston Apr. 27 | Canton Aug. 24 | 119 | Return passage was from Hong Kong to London in 116 days. |
| SEA WITCH | 908 | Dec. 8, 1846 | New York Aug. 9 | Hong Kong Dec. 9 | 122 | Struck by lightning off Cape and damaged; Nov. 6 at Isle of Lombok. Was 12 days in Straits of Macassar. |

The American clipper WINGED RACER (1,767 tons; built in 1852) ran in 1853 from Batavia to Boston in 75½ days, and the WESTWARD HO (1,650 tons; built in 1852) also made a passage in 1853 from Batavia to New York in 82 days.

Homeward-bound Passages, 1854

| | | | | | | |
|------------|-------|---------------|------------------|------------------------|----|---|
| PANAMA | 1,139 | Oct. 11, 1853 | Shanghai Oct. 27 | New York Jan. 21, 1855 | 85 | Sixty-seven days from Anjer; 41 days from Cape. |
| WIZARD | 1,601 | Spring 1853 | Whampoa Mar. 22 | New York June 18 | 88 | Seventy-three days from Anjer; 45 days from Cape. |
| MESSSENGER | 1,351 | Apr. 22, 1852 | Shanghai Oct. 24 | New York Jan. 22, 1855 | 90 | Twenty-two days to Anjer; 68 days from Anjer. |

(Continued on next page)

| Name of Clipper | Tonnage | Built (launched) | From | To | Passage in Days | Remarks |
|--|---------|------------------|----------------------|------------------------------|-----------------|---|
| <i>Homeward-bound Passages, 1854—(Continued)</i> | | | | | | |
| JOHN BERTRAM UNION | 1,080 | Dec. 9, 1850 | Canton | New York | 91 | Fast last lap of her third voyage. |
| | 1,012 | 1851 | Shanghai Nov. 13 | New York Feb. 15, 1855 | 94 | Fast last lap of her second voyage (around the world). |
| HOUQUA | 583 | May 3, 1844 | Foochow Jan. 21 | New York Apr. 26 | 95 | Seventy-seven days from Java Head. |
| ROBIN HOOD | 1,181 | 1854 | Shanghai Dec. 10 | New York Mar. 16, 1855 | 95 | Seventy-five days from Anjer; 43 days from Cape. |
| JOHN WADE | 638 | Summer 1851 | Hong Kong | New York | 96 | Fast last lap of her third voyage (around the world). |
| R. B. FORBES | 757 | July 31, 1851 | Whampoa Nov. 10 | New York Feb. 15, 1855 | 97 | Pilot to pilot; 99 days, anchor to anchor (New York). |
| ALBONI | 917 | Oct. 1852 | Shanghai Dec. | New York | 98 | Good run on last lap of Voyage No. 2. |
| SEA SERPENT | 1,337 | Dec. 1850 | Shanghai Nov. 5 | New York Feb. 15, 1855 | 102 | Eighty-six days from Anjer. Lost main-topmast in South Atlantic. |
| FLYAWAY | 1,274 | May 1853 | Whampoa Feb. 25 | New York June 8 | 103 | Seventy-five days from Anjer; 44 days from Cape. |
| KATHAY | 1,438 | Aug. 1853 | Macao Aug. 9 | New York Nov. 21 | 104 | Seventy-eight days from Anjer. Last lap of voyage—London, Sydney, Canton, New York. |
| PAMPERO | 1,375 | Aug. 18, 1853 | Whampoa Apr. 18 | New York July 31 | 104 | Thirty-two days to Anjer; 72 days from Anjer. |
| SAMUEL RUSSELL | 957 | Summer 1847 | Foochow Aug. 24 | New York Dec. 7 | 105 | Last lap of voyage around the world via San Francisco. |
| WILD DUCK | 860 | Apr. 13, 1853 | Shanghai Mar. 5 | New York June 18 | 105 | Last lap of maiden voyage around the world via San Francisco. |
| SHOOTING STAR | 903 | Feb. 8, 1851 | Whampoa Sept. 19 | New York Jan. 3, 1855 | 106 | Passage out to Hong Kong from New York made in 110 days. |
| WHISTLER | 820 | June 15, 1853 | Macao Mar. 3 | New York June 17 | 106 | Eighty-one days from Java Head. Last lap around the world, maiden voyage. |
| WILD PIGEON | 996 | July 31, 1851 | Whampoa Apr. 4 | New York July 20 | 107 | Seventy-six days from Anjer. Ran even with SWEEP-STAKES. |
| DON QUIXOTE | 1,429 | Sept. 1853 | Whampoa (summer) | New York (fall) | 107 | Thirty-one days to Anjer; 76 days from Anjer. |
| EUREKA | 1,041 | Feb. 9, 1851 | Hong Kong May 8 | New York Aug. 25 | 109 | Thirty-three days to Java Head; thence 29 to Cape, 54 to line, 76 to New York. |
| JACOB BELL | 1,381 | Nov. 12, 1852 | Woosung May 1 | New York Aug. 18 | 109 | Last lap of second voyage and first voyage around the world. |
| GOLDEN CITY | 810 | Aug. 4, 1852 | Woosung May 1 | New York Aug. 19 | 110 | Thirty-three days to Anjer; 77 days from Anjer. |
| SWEEP-STAKES | 1,735 | June 21, 1853 | Macao Apr. 1 | New York July 20 | 110 | Seventy-six days from Anjer. Ran even with WILD PIGEON. |
| GAME COCK | 1,392 | Dec. 21, 1850 | Shanghai (summer) | New York (fall) | 111 | Forty-one days to Anjer; 70 days from Anjer. |
| MISCHIEF | 548 | Mar. 26, 1853 | Foochow Sept. 14 | New York Jan. 5, 1855 | 113 | Java Head to Sandy Hook, 76 days; Foochow to Java Head, 37 days. |
| FLYING CLOUD | 1,782 | Apr. 15, 1851 | Whampoa July 20 | New York Nov. 24 | 115 | Ran on coral reef in China Sea. Was damaged and delayed. |
| COEUR DE LION | 1,098 | Jan. 1854 | Shanghai Sept. 24 | New York Jan. 30, 1855 | 128 | Forty-two days to Anjer and 78 to Cape; 86 days from Anjer to New York. |

(Continued on next page)

| Name of Clipper | Tonnage | Built (launched) | From | To | Passage in Days | Remarks |
|-------------------------------------|---------|------------------|---------------------|----------------------|-----------------|---|
| <i>Outward-bound Passages, 1854</i> | | | | | | |
| SKYLARK | 1,209 | Aug. 4, 1853 | New York | Hong Kong | 91 | Two of her three passages out to China were made in 91 days. |
| ARCHITECT | 520 | 1848 | New York Mar. 1 | Hong Kong June 11 | 102 | Twenty-four days to line. Crossed Greenwich Meridian on the 47th day. |
| SHOOTING STAR | 903 | Feb. 8, 1851 | New York Apr. 25 | Hong Kong Aug. 11 | 108 | Returned to New York in 106 days. |
| HOUQUA | 583 | May 3, 1844 | New York | Hong Kong | 128 | Following run of 95 days from Foochow to New York. |

The clipper WIDE AWAKE (758 tons; built in 1853) left Anjer Apr. 28, 1854, and reached New York July 15 after a passage of 78 days, being the ocean run of a 96-day passage from Singapore to New York.

The WITCH OF THE WAVE (1,498 tons; built in 1851) sailed from Boston Sept. 6, 1854, and made a passage of 76 days to Batavia, Java, from which port she sailed for Amsterdam.

| | | | | | | |
|--------------------------------------|-------|----------------|----------------------------|------------------------------|-----|--|
| <i>Homeward-bound Passages, 1855</i> | | | | | | |
| EAGLE WING | 1,174 | Oct. 4, 1853 | Woosung Nov. 23 | New York Feb. 15, 1856 | 84 | Left Shanghai Nov. 21; crossed line 66½ days out from Woosung. |
| GAME COCK | 1,392 | Dec. 21, 1850 | Shanghai Dec. 30 | New York Mar. 26, 1856 | 87 | Eleven days to Anjer; 76 days from Anjer. |
| GOLDEN STATE | 1,363 | Jan. 10, 1853 | Shanghai Jan. 1 | New York Mar. 31 | 88½ | To Java Head, 13 days; from Java Head, 75½ days to anchorage in harbor. |
| SWORDFISH | 1,036 | Sept. 20, 1851 | Whampoa | New York | 91 | Last lap of voyage around the world via San Francisco and Hong Kong. |
| FLYING CLOUD | 1,782 | Apr. 15, 1851 | Macao Sept. 7 | New York Dec. 14 | 97 | Twenty-five days to Anjer; 72 days from Anjer. |
| KATHAY | 1,438 | Aug. 1853 | Shanghai Oct. 6 | New York Jan. 12, 1856 | 98 | Twenty-five days to Anjer; 73 days from Anjer. |
| CONTEST | 1,098 | Oct. 9, 1852 | Shanghai (early spring) | New York (summer) | 99 | Last lap of voyage around the world via San Francisco and China. |
| HOUQUA | 583 | May 3, 1844 | Shanghai | New York | 100 | Return passage of China voyage. Ran out to Hong Kong in 128 days. |
| BOSTON LIGHT | 1,154 | 1854 | Shanghai Dec. 15 | New York Mar. 25, 1856 | 102 | Eighteen days to Anjer; 84 days from Anjer. |
| GALATEA | 1,041 | Mar. 16, 1854 | Shanghai | New York | 102 | Last lap of maiden voyage from Boston around the world via California and China. |
| SUNNY SOUTH | 776 | Oct. 7, 1854 | Hong Kong Oct. | New York Jan. 1856 | 102 | Twenty-four days to Anjer; 78 days from Anjer. |
| ROBIN HOOD | 1,181 | 1854 | Shanghai | New York | 103 | Last lap of voyage around the world via California and China. |
| GOLDEN STATE | 1,363 | Jan. 10, 1853 | Foochow (fall) | New York (spring) | 105 | Return passage of New York-China voyage. Ran out in 90 days. |
| STING RAY | 985 | June 3, 1854 | Hong Kong Sept. 26 | New York Jan. 9, 1856 | 105 | At Anjer Oct. 25. Went ashore on Fire Island with pilot aboard 76 days from Anjer. |
| ELECTRIC | 1,046 | 1853 | Shanghai | New York | 106 | Last lap of voyage around the world via California and China. |

(Continued on next page)

| Name of Clipper | Tonnage | Built (launched) | From | To | Passage in Days | Remarks |
|--|---------|------------------|---------------------|---------------------------|-----------------|--|
| <i>Homeward-bound Passages, 1855—(Continued)</i> | | | | | | |
| FLYING CHILDERS | 1,125 | Nov. 11, 1852 | Shanghai July 18 | New York Nov. 2 | 107 | Twenty-one days to Anjer; 86 days from Anjer. |
| COEUR DE LION | 1,098 | Jan. 1854 | Whampoa Nov. 5 | New York Feb. 21, 1856 | 108 | Twenty-four days to Anjer; 84 days from Anjer. |
| FLEETWING | 896 | 1854 | Whampoa | New York | 108 | Last lap of voyage around the world via California and China. |
| MONSOON | 773 | 1851 | Foochow Dec. 20 | New York Apr. 7, 1856 | 109 | Fifteen days to Anjer; 94 days from Anjer. |
| LOTUS | 660 | Oct. 26, 1852 | Foochow Aug. 14 | New York Dec. 1 | 109 | Thirty-five days to Anjer; 74 days from Anjer. |
| RED GAUNTLET | 1,038 | Dec. 1, 1853 | Shanghai | New York | 111 | Last lap of voyage around the world via San Francisco and Shanghai. |
| PANAMA | 1,139 | Oct. 11, 1853 | Foochow Oct. 25 | New York Feb. 15, 1856 | 113 | Thirty-two days to Anjer; 81 days from Anjer. |
| WHITE SWALLOW | 1,192 | Mar. 26, 1853 | Foochow Aug. 25 | New York Dec. 19 | 115 | Thirty-eight days to Anjer; 77 days from Anjer. |
| SAMUEL RUSSELL | 957 | 1847 | Foochow Sept. 11 | New York Jan. 12, 1856 | 123 | Forty-three days to Anjer; 80 days from Anjer. |
| PHANTOM | 1,174 | Dec. 8, 1852 | Foochow July 26 | New York Nov. 27 | 124 | Last lap of voyage around the world via California and China. |
| RESOLUTE | 786 | Jan. 15, 1853 | Foochow Apr. 24 | New York Aug. 28 | 126 | Thirty-eight days to Anjer; 88 days from Anjer. |
| QUEEN OF THE SEAS | 1,356 | Sept. 18, 1852 | Shanghai Nov. 9 | New York Mar. 22, 1856 | 133 | Last lap of voyage around the world via San Francisco and Shanghai. |
| GOLDEN CITY | 810 | Aug. 4, 1852 | Shanghai June 18 | New York Nov. 2 | 137 | Very unfavorable conditions after a transpacific crossing of 39½ days. |
| CELESTIAL | 860 | June 10, 1850 | Shanghai Apr. 5 | New York Aug. 25 | 142 | Fifty-one days to Anjer; 91 days from Anjer. |
| WILD DUCK | 860 | Apr. 13, 1853 | Shanghai | New York | 143 | Thirty-eight days to Anjer; 105 days from Anjer. |

Outward-bound Passages, 1855

| | | | | | | |
|--------------|-------|---------------|-------------------------|------------------|----|--|
| GOLDEN STATE | 1,363 | Jan. 10, 1853 | New York (early summer) | Hong Kong (fall) | 90 | Returned to New York from Foochow in 105 days. |
|--------------|-------|---------------|-------------------------|------------------|----|--|

The Maine-built clipper SNOW SQUALL (742 tons; built in 1851), on the return passage of a voyage from New York to Sydney (85 days out), ran from Anjer to New York in 78 days.

Homeward-bound Passages, 1856

| | | | | | | |
|--------------|-------|---------------|---------------------|---------------------------|----|---|
| SEA SERPENT | 1,337 | Dec. 1850 | Whampoa Jan. 3 | New York Mar. 22 | 79 | Ten days to Anjer; 69 days from Anjer. |
| KATHAY | 1,438 | Aug. 1853 | Shanghai Oct. 18 | New York Jan. 18, 1857 | 92 | On return passage of voyage to Australia (84 days to Sydney). |
| GOLDEN STATE | 1,363 | Jan. 10, 1853 | Foochow | New York | 95 | Return passage of round voyage to China. Went out to Hong Kong in 114 days. |
| PANAMA | 1,139 | Oct. 11, 1853 | Shanghai Dec. 12 | New York Mar. 19, 1857 | 97 | Twenty days to Anjer; 77 days from Anjer. |
| WILD PIGEON | 996 | July 31, 1851 | Shanghai Dec. 15 | New York Mar. 23, 1857 | 98 | Return passage of round voyage New York-China. |

(Continued on next page)

| Name of Clipper | Tonnage | Built (launched) | From | To | Passage in Days | Remarks |
|--|---------|------------------|---------------------|------------------------------|-----------------|--|
| <i>Homeward-bound Passages, 1856—(Continued)</i> | | | | | | |
| FLORENCE | 1,045 | Feb. 23, 1856 | Shanghai Dec. 13 | New York Mar. 23, 1857 | 100 | Return passage of maiden voyage. Was 91 days running out to Hong Kong. |
| SWEEP-STAKES | 1,735 | June 21, 1853 | Shanghai Dec. 6 | New York Mar. 17, 1857 | 100 | Twenty-three days to Java Head; 77 days from Java Head. |
| ENDEAVOR | 1,137 | 1856 | Shanghai | New York | 103 | Last lap of maiden voyage around the world via California and China. |
| DON QUIXOTE | 1,429 | Sept. 1853 | Foochow (fall) | New York (early 1857) | 104 | Twenty-eight days to Anjer; 76 days from Anjer. |
| PHANTOM | 1,174 | Dec. 8, 1852 | Whampoa Oct. 17 | New York Feb. 1, 1857 | 106 | Last lap of voyage around the world via San Francisco, Hong Kong, Manila, and Whampoa. |
| SANCHO PANZA | 876 | Aug. 5, 1855 | Foochow Dec. 10 | Boston Mar. 30, 1857 | 110 | Twenty-one days to Java Head; 89 days from Java Head. |
| ELIZABETH F. WILLETS | 825 | 1854 | Foochow Oct. 25 | New York Feb. 14, 1857 | 111 | Twenty-two days to Anjer; 89 days from Anjer. |
| ALBONI | 917 | Oct. 1852 | Shanghai Jan. 28 | New York May 19 | 112 | Nineteen days to Anjer; 93 days from Anjer. |
| DARING | 1,094 | Oct. 8, 1855 | Shanghai | New York | 112 | Last lap of maiden voyage around the world via California and China. |
| STAG HOUND | 1,534 | Dec. 7, 1850 | Whampoa Apr. 21 | New York Aug. 21 | 122 | Last lap of voyage from London to New York via Hong Kong. |
| CELESTIAL | 860 | June 10, 1850 | Shanghai Apr. 26 | New York Aug. 27 | 123 | Forty-four days to Anjer; 79 days from Anjer. |
| MATCHLESS | 1,053 | 1853 | Shanghai | New York | 124 | Last lap of voyage around the world via San Francisco and China ports. |
| COMET | 1,836 | July 10, 1851 | Whampoa June 15 | New York Oct. 23 | 130 | End of voyage around the world. Very unfavorable conditions. |
| CONTEST | 1,098 | Oct. 9, 1852 | Whampoa Apr. 4 | New York Aug. 21 | 139 | End of voyage from New York to Bombay, Hong Kong, and home. |
| RED GAUNTLET | 1,038 | Dec. 1, 1853 | Whampoa Aug. 9 | New York Jan. 1, 1857 | 143 | Fifty-three days to Anjer; 90 days from Anjer; two days at St. Helena. |
| <i>Outward-bound Passages, 1856</i> | | | | | | |
| FLORENCE | 1,045 | Feb. 23, 1856 | Boston Apr. 5 | Hong Kong July 5 | 91 | Maiden voyage; 76 days to Java Head and only 22 days from Cape. |
| SHOOTING STAR | 903 | Feb. 8, 1851 | New York May 24 | Hong Kong Aug. 30 | 98 | Voyage out to China to engage in trade on Asiatic coast. |
| ARGONAUT | 575 | Summer 1849 | Boston (fall) | Shanghai 1857 | 99 | Sixty-one days from Atlantic equator to Shanghai—very fast. |
| GOLDEN STATE | 1,363 | Jan. 10, 1853 | New York | Hong Kong | 114 | Outward passage of New York-China voyage. Returned in 95 days. |
| CELESTIAL | 860 | June 10, 1850 | New York (fall) | Shanghai 1857 | 148 | Following a passage of 123 days from Shanghai to New York. |

The medium clipper ship BLACK PRINCE (1,061 tons; built in 1856) made a passage in 1856 of 96 days from Java Head to Boston.

(Continued on next page)

| Name of Clipper | Tonnage | Built (launched) | From | To | Passage in Days | Remarks |
|--------------------------------------|---------|------------------|-----------------------|------------------------|-----------------|--|
| <i>Homeward-bound Passages, 1857</i> | | | | | | |
| SURPRISE | 1,261 | Oct. 5, 1850 | Shanghai Jan. 1 | New York Mar. 25 | 82 | Thirteen days to Anjer; 69 days from Anjer. |
| GOLDEN STATE | 1,363 | Jan. 10, 1853 | Foochow (late summer) | New York (fall) | 93 | Nineteen days to Anjer; 74 days from Anjer. |
| FLYAWAY | 1,274 | May 1853 | Foochow Jan. 27 | New York May 1 | 94 | Last lap of voyage around the world via San Francisco and China ports. |
| N. B. PALMER | 1,399 | Feb. 5, 1851 | Hong Kong Oct. | New York Jan. 1858 | 100 | Followed with run of 88 days from New York to Hong Kong. |
| ROMANCE OF THE SEAS | 1,782 | Oct. 23, 1853 | Shanghai Feb. 16 | New York May 27 | 100 | Seventeen days to Anjer; 83 days from Anjer. |
| WHITE SWALLOW | 1,192 | Mar. 26, 1853 | Shanghai Jan. 19 | New York Apr. 30 | 101 | Twenty-one days to Anjer; 80 days from Anjer. |
| CONTEST | 1,098 | Oct. 9, 1852 | Whampoa Dec. | New York Mar. 1858 | 102 | Had spent 1857 (Feb.-Dec.) on the China coast. |
| GOLDEN WEST | 1,441 | Nov. 16, 1852 | Shanghai May 17 | New York Aug. 28 | 103 | Twenty-four days to Anjer; 79 days from Anjer. |
| FLORENCE | 1,045 | Feb. 23, 1856 | Shanghai Dec. 4 | New York Mar. 18, 1858 | 104 | One hundred four days, pilot to pilot. To Java Head, 20 days; from Java Head, 84 days. |
| HOTSPUR | 862 | Early 1857 | Hong Kong Sept. 1 | New York Dec. 18 | 107 | Twenty-eight days to Anjer; 79 days from Anjer. |
| INTREPID | 1,173 | Spring 1856 | Shanghai Nov. | New York Mar. 1858 | 110 | Sailed from Hong Kong Nov. 26; 110 sailing days from Shanghai. |
| STAG HOUND | 1,534 | Dec. 7, 1850 | Foochow Aug. 13 | New York Dec. 4 | 113 | Last lap of voyage around the world via San Francisco and China. |
| PHANTOM | 1,174 | Dec. 8, 1852 | Shanghai Sept. 10 | New York Jan. 2, 1858 | 114 | Ran out from New York to Hong Kong in 97 days. |
| RESOLUTE | 786 | Jan. 15, 1853 | Foochow Oct. 22 | New York Feb. 20, 1858 | 121 | Thirty-five days to Anjer; 86 days from Anjer. |
| SKYLARK | 1,209 | Aug. 4, 1853 | Shanghai | New York | 123 | Returned to New York in 91 days. |
| SAMUEL RUSSELL | 957 | 1847 | Foochow Aug. | New York Dec. | 127 | Forty-nine days to Anjer; 78 days from Anjer. |

Outward-bound Passages, 1857

| | | | | | | |
|----------------|-------|---------------|------------------|--------------------|----|--|
| NABOB | 1,246 | Jan. 21, 1854 | New York | Hong Kong | 85 | Fifty-two days from Cape St. Roque—a record. |
| WHITE SWALLOW | 1,192 | Mar. 26, 1853 | New York June 28 | Hong Kong Sept. 23 | 89 | Poor season at both ends, but a very fast passage. |
| HOTSPUR | 862 | Early 1857 | New York Apr. 4 | Hong Kong July 3 | 90 | Returned to New York in 107 days (79 from Anjer). |
| SKYLARK | 1,209 | Aug. 4, 1853 | New York | Hong Kong | 91 | Ran out to Shanghai in 123 days. |
| GOLDEN STATE | 1,363 | Jan. 10, 1853 | New York Mar. 19 | Hong Kong June 20 | 93 | Returned to New York from Foochow in 93 days. |
| FLORENCE | 1,045 | Feb. 23, 1856 | New York Apr. 29 | Hong Kong Aug. 1 | 93 | To Anjer, 76 days 8 hours. From Anjer to Hong Kong, 17 days. |
| SAMUEL RUSSELL | 957 | 1847 | New York | Hong Kong | 96 | Returned to New York in 127 days; 78 days from Anjer. |
| PHANTOM | 1,174 | Dec. 8, 1852 | New York Mar. 17 | Hong Kong June 22 | 97 | Returned to New York in 114 days. |

(Continued on next page)

| Name of Clipper | Tonnage | Built (launched) | From | To | Passage in Days | Remarks |
|---|---------|------------------|--------------------|------------------------------|-----------------|---|
| <i>Outward-bound Passages, 1857—(Continued)</i> | | | | | | |
| SWORDFISH | 1,036 | Sept. 20, 1851 | New York | Hong Kong | 102 | Returned home in 107 days from Manila. |
| BALD EAGLE | 1,705 | Nov. 1852 | Boston Sept. 21 | Hong Kong Jan. 8, 1858 | 109 | Remained on the China coast until Aug. 1859. |
| HOUQUA (bark) | 583 | May 3, 1844 | New York May 28 | Hong Kong Sept. 22 | 127 | Was 96 days to Anjer and 31 days from Anjer to Hong Kong. |

The medium clipper SOUTHERN CROSS (938 tons; built in 1851) made a passage to Boston from Batavia (Oct. 28, 1857) in 78 days, being only 74 days from Anjer.

| <i>Homeward-bound Passages, 1858</i> | | | | | | |
|--------------------------------------|-------|---------------|---------------------|------------------------------|-----|---|
| N. B. PALMER | 1,399 | Feb. 5, 1851 | Shanghai Oct. | New York Jan. 1859 | 82 | Eighteen days to Anjer; 64 days from Anjer; 35 days from Cape. |
| INO | 895 | Jan. 4, 1851 | Woosung Nov. 21 | New York Feb. 19, 1859 | 88 | Eighteen days to Anjer (23 to Java Head); 70 days from Anjer. From Java Head (Dec. 14) to Cape, 26 days and only 67 days to New York pilot; 85 sailing days to pilot. |
| SURPRISE | 1,261 | Oct. 5, 1850 | Woosung | New York | 93 | Forty-six days to Cape, where held for fifteen days by heavy westerly gales. |
| SAMUEL RUSSELL | 957 | 1847 | Foochow | New York | 95 | Ran out from New York to Hong Kong in 101 days. |
| CANVASBACK | 731 | 1854 | Shanghai Feb. 12 | New York May 21 | 98 | Return passage of a New York-China round voyage. |
| MANDARIN | 776 | June 1850 | Shanghai Jan. 4 | New York Apr. 14 | 100 | Fifteen days to Anjer; 85 days from Anjer. |
| SANCHO PANZA | 876 | Aug. 5, 1855 | Shanghai Nov. 13 | New York Feb. 22, 1859 | 101 | Off Hatteras for ten days in heavy gales and had pilot aboard for three days before being able to enter New York Harbor. |
| DARING | 1,094 | Oct. 8, 1855 | Whampoa | New York | 101 | Last lap of second voyage around the world via San Francisco and China ports. |
| EAGLE WING | 1,174 | Oct. 4, 1853 | Shanghai Feb. 4 | New York May 18 | 103 | Rather poor sailing conditions throughout. |
| LOTUS | 660 | Oct. 26, 1852 | Foochow Dec. 28 | New York Apr. 14, 1859 | 107 | Return to New York after a year spent in the Pacific. |
| DON QUIXOTE | 1,429 | Sept. 1853 | Whampoa 1858 | New York 1859 | 112 | Last lap of voyage around the world via San Francisco and China. |
| NABOB | 1,246 | Jan. 21, 1854 | Shanghai | New York | 120 | On run out, was only 85 days to Hong Kong and made a record run of 52 days from St. Roque. |

| <i>Outward-bound Passages, 1858</i> | | | | | | |
|-------------------------------------|-------|----------------|----------|-----------|----|--|
| N. B. PALMER | 1,399 | Feb. 5, 1851 | New York | Hong Kong | 88 | Returned to New York from Shanghai in 82 days, making only 170 days at sea for round voyage. |
| SWORDFISH | 1,036 | Sept. 20, 1851 | New York | Hong Kong | 98 | On return passage, ran from Shanghai to New York in 104 days. |

(Continued on next page)

MERCHANT SAIL

| Name of Clipper | Tonnage | Built (launched) | From | To | Passage in Days | Remarks |
|---|---------|------------------|---------------------|--------------------|-----------------|---|
| <i>Outward-bound Passages, 1858—(Continued)</i> | | | | | | |
| HOTSPUR | 862 | Early 1857 | New York Jan. 28 | Hong Kong May 6 | 98 | Outward passage of her second voyage in New York-China trade. |
| SAMUEL RUSSELL | 957 | 1847 | New York | Hong Kong | 101 | Returned from Foochow to New York in 95 days. |

The medium clipper ship BLACK PRINCE (1,061 tons; built in 1856) ran in 1858-1859 from Java Head to Boston in 83 days. The TWILIGHT (1,482 tons; built in 1857) ran in 1858 from Anjer to New York in 85 days.

Homeward-bound Passages, 1859

| | | | | | | |
|---------------------|-------|----------------|----------------------|------------------------------|-----|--|
| SWORDFISH | 1,036 | Sept. 20, 1851 | Shanghai Dec. 12 | New York Mar. 2, 1860 | 81 | The all-time record from Shanghai to any North Atlantic port. Ten days to Anjer; 71 days from Anjer; 40 from Cape. |
| EAGLE WING | 1,174 | Oct. 4, 1853 | Hong Kong Mar. 13 | New York June 3 | 82 | A very fast run made under "fair sailing conditions." |
| GOLDEN STATE | 1,363 | Jan. 10, 1853 | Hong Kong Dec. 2 | New York Mar. 2, 1860 | 84 | Stopped at Batavia; 91 days gross, but 84 sailing days. |
| ELECTRIC SPARK | 1,216 | Nov. 17, 1855 | Whamboa Dec. 11 | New York Mar. 5, 1860 | 84 | Last lap of voyage, London, Sydney, Hong Kong, to New York. |
| PANAMA | 1,139 | Oct. 11, 1853 | Foochow Dec. 6 | New York Mar. 2, 1860 | 87 | Nine days to Anjer; 78 days from Anjer. |
| SNOW SQUALL | 742 | 1851 | Shanghai | New York | 91 | The following year, ran from Shanghai to New York in 92 days. |
| KATHAY | 1,438 | Aug. 1853 | Amoy 1859 | New York 1860 | 93 | Nineteen days to Anjer; 74 days from Anjer. |
| ROMANCE OF THE SEAS | 1,782 | Oct. 23, 1853 | Shanghai Mar. 20 | New York June 22 | 94 | Twenty days to Anjer; 74 days from Anjer. |
| SAMUEL RUSSELL | 957 | 1847 | Foochow | New York | 95 | The year before, ran between the same ports also in 95 days. |
| PAMPERO | 1,375 | Aug. 18, 1853 | Woosung Oct. 22 | New York Jan. 29, 1860 | 99 | Twenty days to Anjer; 79 days from Anjer. |
| SIERRA NEVADA | 1,942 | May 29, 1854 | Hong Kong | New York | 99 | Twenty days to Anjer; 79 days from Anjer. |
| JACOB BELL | 1,381 | Nov. 12, 1852 | Hong Kong Oct. 13 | New York Jan. 23, 1860 | 102 | Twenty-seven days to Anjer; 75 days from Anjer. |
| SANCHO PANZA | 876 | Aug. 5, 1855 | Woosung Dec. 28 | New York Apr. 8, 1860 | 102 | Twenty-one days to Anjer; 81 days from Anjer. |
| DAVID BROWN | 1,717 | Oct. 8, 1853 | Whamboa Dec. 20 | New York Mar. 2, 1860 | 103 | Twenty-one days to Anjer; 82 days from Anjer. Ran even with PANAMA from Java Head. |
| SWORDFISH | 1,036 | Sept. 20, 1851 | Shanghai | New York | 104 | Run out to China in 1858 was 98 days to Hong Kong. |
| MALAY | 868 | Aug. 26, 1852 | Shanghai | New York | 106 | Passage reported made in the unfavorable season. |
| PHANTOM | 1,174 | Dec. 8, 1852 | Foochow Nov. 8 | New York Feb. 26, 1860 | 110 | Last lap of voyage around the world via San Francisco and China. |
| COMPETITOR | 871 | Feb. 1853 | Foochow | New York | 112 | Beat CHARMER eight days and EAGLE ten days on run from Java Head. |

(Continued on next page)

| Name of Clipper | Tonnage | Built (launched) | From | To | Passage in Days | Remarks |
|--|---------|------------------|-----------------|------------------------|-----------------|--|
| <i>Homeward-bound Passages, 1859—(Continued)</i> | | | | | | |
| FLYING CHILDERS | 1,125 | Nov. 11, 1852 | Foochow 1859 | New York 1860 | 112 | Last lap of voyage around the world via San Francisco and China ports. |
| NIGHTIN-GALE | 1,060 | June 16, 1851 | Foochow Oct. 9 | New York Jan. 30, 1860 | 113 | Thirty-two days to Anjer; 81 days from Anjer. |
| INVINCIBLE | 1,769 | Aug. 6, 1851 | Whampoa June | New York Oct. | 126 | Forty-eight days to Anjer; 78 days from Anjer. |
| NONPAREIL | 1,431 | Nov. 1853 | Shanghai Oct. 2 | New York Feb. 7, 1860 | 128 | Forty-one days to Anjer; 87 days from Anjer. |

Outward-bound Passages, 1859

| | | | | | | |
|---------------------|-------|---------------|-------------------|-----------------------|-----|--|
| N. B. PALMER | 1,399 | Feb. 5, 1851 | New York | Hong Kong | 100 | Returning to China following an 82-day passage from Shanghai to New York. |
| SANCHO PANZA | 876 | Aug. 5, 1855 | New York Apr. 24 | Hong Kong Aug. 1 | 100 | Returned to New York in 102 days from Woosung. |
| CANVASBACK | 731 | 1854 | New York May 27 | Hong Kong Sept. 8 | 104 | Following passage of 98 days from Shanghai to New York made in 1858. |
| NABOB | 1,246 | Jan. 21, 1854 | New York | Shanghai | 105 | Following passage of 120 days from Shanghai to New York. |
| JACOB BELL | 1,381 | Nov. 12, 1852 | New York Jan. | Hong Kong May | 114 | Eighty-three days to Anjer; 31 days from Anjer to Hong Kong. |
| ROMANCE OF THE SEAS | 1,782 | Oct. 23, 1853 | New York Aug. 11 | Hong Kong Dec. 6 | 116 | Eighty-four days to Anjer; 32 days from Anjer to Hong Kong. |
| RAVEN | 711 | July 1, 1851 | New York 1859 | Hong Kong 1860 | 118 | Following passage from Padang to New York in 90 days. |
| SKYLARK | 1,209 | Aug. 4, 1853 | New York | Amoy | 127 | Her other two passages out to China were from New York to Hong Kong in 91 days each. |
| RED GAUNTLET | 1,038 | Dec. 1, 1853 | New York Sept. 27 | Shanghai Feb. 7, 1860 | 133 | Following passage from Manila to New York in 103 days. |

The clipper ship *GAME COCK* (1,392 tons; built in 1850) left New York June 10, 1859, and ran to Batavia in 78 days and to Java Head in 76 days; best day's run, 337 miles. The *HOTSPUR* (862 tons; built in 1857) left Anjer Oct. 19, 1859, and reached New York Jan. 12, 1860, 85 days from Anjer and 45 days from the Cape of Good Hope.

Homeward-bound Passages, 1860

| | | | | | | |
|-------------|-------|---------------|-------------------|------------------------|----|--|
| KATHAY | 1,438 | Aug. 1853 | Amoy Dec. 6 | New York Mar. 5, 1861 | 89 | Twelve days to Anjer; 77 days from Anjer; 39 days from Cape. |
| NABOB | 1,246 | Jan. 21, 1854 | Foochow Dec. 22 | New York Mar. 23, 1861 | 91 | Ninety-one days to anchor in harbor; 89 days to pilot. |
| SWALLOW | 1,435 | Apr. 4, 1854 | Hong Kong Dec. 23 | New York Mar. 24, 1861 | 91 | Eighty days to Hatteras and held back by northwest gales. |
| SNOW SQUALL | 742 | 1851 | Shanghai | New York | 92 | In previous year, went over course in 91 days. |

(Continued on next page)

| Name of Clipper | Tonnage | Built (launched) | From | To | Passage in Days | Remarks |
|--|---------|------------------|----------------------|------------------------------|-----------------|--|
| <i>Homeward-bound Passages, 1860—(Continued)</i> | | | | | | |
| HOTSPUR | 862 | Early 1857 | Hong Kong Oct. 31 | New York Feb. 2, 1861 | 95 | Beat the SEA SERPENT by eight days on the run. |
| SWORDFISH | 1,036 | Sept. 20, 1851 | Shanghai Dec. 6 | New York Mar. 18, 1861 | 102 | In previous year, made record run of 81 days between the ports. |
| SEA SERPENT | 1,337 | Dec. 1850 | Hong Kong Nov. 1 | New York Feb. 11, 1861 | 102 | Twenty-three days to Anjer; 79 days from Anjer. |
| PHANTOM | 1,174 | Dec. 8, 1852 | Shanghai Oct. 17 | New York Jan. 29, 1861 | 104 | Went out from New York to Shanghai in 99 days. |
| SKYLARK | 1,209 | Aug. 4, 1853 | Shanghai | New York | 106 | Return of New York-China voyage. Ran out to Amoy in 127 days. |
| N. B. PALMER | 1,399 | Feb. 5, 1851 | Amoy Sept. 29 | New York Jan. 15, 1861 | 108 | In 1859, made fast passage of 82 days from Shanghai to New York. |
| RED GAUNTLET | 1,038 | Dec. 1, 1853 | Woosung Mar. 27 | New York July 25 | 120 | Twenty-five days to Anjer; 95 days from Anjer; 60 days from Cape. |
| WINGED RACER | 1,767 | Nov. 1852 | Foochow Sept. 2 | New York Dec. 31 | 120 | Forty-two days to Anjer; 78 days from Anjer. On Dec. 16, in gale, lost all top-masts. |
| NORTH WIND | 1,041 | Aug. 30, 1853 | Amoy Sept. 18 | New York Jan. 26, 1861 | 130 | Forty-three days to Anjer; 47 to Java Head; 83 days from Java Head; 55 days from Cape. |

Outward-bound Passages, 1860

| | | | | | | |
|--------------|-------|---------------|---------------------|------------------------|-----|---|
| PHANTOM | 1,174 | Dec. 8, 1852 | New York Apr. 26 | Shanghai Aug. 3 | 99 | Returned to New York in 104 days. |
| N. B. PALMER | 1,399 | Feb. 5, 1851 | New York Oct. | Hong Kong Jan. 1861 | 100 | The next year, went over the same course in 97 days and in 1868 in 90 days. |
| NABOB | 1,246 | Jan. 21, 1854 | New York | Shanghai | 102 | Followed a run of 102 days from Manila to New York (76 days under jury masts). |
| ARGONAUT | 575 | Summer 1849 | Boston | Hong Kong | 106 | In unfavorable season. In 1857, reached Shanghai, also in poor season, 99 days from Boston. |
| FEARLESS | 1,184 | July 28, 1853 | Boston | Hong Kong | 107 | In unfavorable season. Returned home from Manila in 111 days. |
| SANCHO PANZA | 876 | Aug. 5, 1855 | Boston May 25 | Hong Kong Sept. 21 | 119 | Returned to New York in 102 days; 78 days from Java Head. |

Homeward-bound Passages, 1861

| | | | | | | |
|----------------|-----|------|-----------|----------|----|--|
| SNOW SQUALL | 742 | 1851 | Amoy | New York | 82 | Twelve days to Anjer; 70 days from Anjer; 38 days from Cape. |
| SAMUEL RUSSELL | 957 | 1847 | Hong Kong | New York | 94 | In 1863, went from Foochow to New York in 89 days. |

(Continued on next page)

| Name of Clipper | Tonnage | Built (launched) | From | To | Passage in Days | Remarks |
|--|---------|------------------|-------------------|------------------------|-----------------|---|
| <i>Homeward-bound Passages, 1861—(Continued)</i> | | | | | | |
| GAUNTLET (SUNDA) | 1,854 | Sept. 5, 1853 | Bangkok Nov. 2 | New York Feb. 8, 1862 | 98 | Eighteen days to Anjer; 80 days from Anjer; 45 days from Cape. |
| FLYING SCUD | 1,713 | Nov. 2, 1853 | Whampoa Feb. 5 | New York May 15 | 99 | Seventeen days to Java Head; 82 days from Java Head; 47 days from Cape. All topgallant masts carried away and almost all canvas, May 4. |
| COMET | 1,836 | July 10, 1851 | Hong Kong Mar. 16 | New York June 25 | 101 | Forty-seven days from Cape; 28 days from St. Helena. |
| FLORENCE | 1,045 | Feb. 23, 1856 | Foochow Jan. 21 | New York May 3 | 102 | Had been in British China tea trade. Later sold to British. |
| SANCHO PANZA | 876 | Aug. 5, 1855 | Foochow Jan. 1 | New York Apr. 13 | 102 | Twenty-four days to Java Head. Typhoon in China Sea; two days at Anjer. Seventy-eight days from Java Head; 48 days from Cape. |
| ONWARD | 874 | July 3, 1852 | Shanghai Feb. 26 | New York June 21 | 115 | Fourteen days to Anjer; 101 days from Anjer; 45 days from Cape. |
| CANVASBACK | 731 | 1854 | Canton July 20 | New York Dec. 1 | 134 | Thirty-seven days to Anjer; 97 days from Anjer. |
| UNION | 1,012 | 1851 | Shanghai Aug. 7 | New York Jan. 28, 1862 | 174 | Seventy-eight days to Indian Ocean via Straits of Allas (Oct. 24); 96-day sea run home, an extraordinarily long passage. |

Outward-bound Passages, 1861

| | | | | | | |
|--------------|-------|---------------|------------------|------------------------|-----|--|
| MAURY | 600 | 1855 | New York Apr. 27 | Hong Kong July 28 | 92 | Seventy-six days to Anjer; 16 days from Anjer to Hong Kong. |
| HOTSPUR | 862 | Early 1857 | New York Apr. 25 | Hong Kong July 28 | 94 | Seventy-six days to Anjer; 18 days from Anjer to Hong Kong. |
| N. B. PALMER | 1,399 | Feb. 5, 1851 | New York | Hong Kong | 97 | Was 90 days over same course in 1868. |
| GAME COCK | 1,392 | Dec. 21, 1850 | New York 1861 | Hong Kong 1862 | 112 | Seventy-five days to Java Head; 37 days from Java Head to Hong Kong. |
| JACOB BELL | 1,381 | Nov. 12, 1852 | New York Nov. 12 | Hong Kong Mar. 7, 1862 | 115 | Eighty-four days to Anjer; 31 days from Anjer to Hong Kong. |
| MONSOON | 773 | 1851 | New York Aug. 1 | Hong Kong Dec. 31 | 152 | One hundred ten days to Anjer; 42 days from Anjer to Hong Kong. Very unfavorable weather throughout. |

Homeward-bound Passages, 1862

| | | | | | | |
|----------------------|-------|------|----------------|-----------------------|-----|---|
| ELIZABETH F. WILLETS | 825 | 1854 | Whampoa Nov. 5 | New York Feb. 9, 1863 | 96 | Then went out to China and was sold at Shanghai because of Civil War. |
| ENDEAVOR | 1,137 | 1856 | Foochow Sept. | New York Dec. | 100 | Twenty-five days to Anjer; 75 days from Anjer; 47 days from Cape. |

(Continued on next page)

| Name of Clipper | Tonnage | Built (launched) | From | To | Passage in Days | Remarks |
|--|---------|------------------|----------------------|------------------------------|-----------------|---|
| <i>Homeward-bound Passages, 1862—(Continued)</i> | | | | | | |
| HOTSPUR | 862 | Early 1857 | Hong Kong Jan. 25 | New York May 13 | 100 | One hundred sailing days. Was at Batavia eight days; 91 days from Batavia. |
| SEA SERPENT | 1,337 | Dec. 1850 | Hong Kong | New York | 107 | Last lap of voyage around the world via San Francisco and Hong Kong. |
| CONTEST | 1,098 | Oct. 9, 1852 | Foochow | New York | 107 | Via St. Helena. Heralded as "fastest run from China for a long time." |
| GAME COCK | 1,392 | Dec. 21, 1850 | Shanghai Nov. 24 | New York Mar. 15, 1863 | 111 | Heavy gales off the Cape. Had run out from New York to Hong Kong in 112 days. |
| HOUQUA (bark) | 583 | May 3, 1844 | Whampoa Mar. 18 | New York July 19 | 123 | Eighteen days to Anjer; 105 days from Anjer. |
| FLORENCE | 1,045 | Feb. 23, 1856 | Hong Kong June 3 | New York Oct. 6 | 125 | Last lap of voyage around the world via San Francisco and China. |
| GOLDEN STATE | 1,363 | Jan. 10, 1853 | Amoy Aug. 10 | New York Dec. 15 | 127 | Forty-nine days to Anjer; 78 days from Anjer. |
| ARGONAUT | 575 | Summer 1849 | Foochow Jan. 9 | New York May 17 | 128 | Twenty-six days to Anjer; 102 days from Anjer. |
| COMET | 1,836 | July 10, 1851 | Macao Aug. 6 | New York Dec. 19 | 135 | Damaged by typhoon in China Sea. Sent to London and sold. |
| DON QUIXOTE | 1,429 | Sept. 1853 | Foochow Mar. 29 | New York Aug. 16 | 140 | To Anjer, 30 days. Off Cape whole month of June; Anjer to New York, 110 days. |
| RED GAUNTLET | 1,038 | Dec. 1, 1853 | Shanghai July 19 | New York Dec. 14 | 148 | Fifty-five days to Anjer; 93 days from Anjer. Heavy gales off Cape. |
| EUREKA | 1,041 | Feb. 9, 1851 | Macao Oct. 20 | New York Apr. 10, 1863 | 162 | Left Anjer 73 days from Macao; Anjer to New York, 89 days; St. Helena to New York, 39 days. |

Outward-bound Passages, 1862

| | | | | | | |
|---------------|-------|---------------|---------------------|------------------------------|-----|--|
| MANDARIN | 776 | June 1850 | New York Dec. 9 | Shanghai Apr. 14, 1863 | 126 | Commencement of her last voyage. Was wrecked in China Sea on Aug. 9, 1864. |
| HOTSPUR | 862 | Early 1857 | New York June 17 | Hong Kong Oct. 24 | 129 | One hundred days to Anjer; 29 days from Anjer to Hong Kong. |
| OSBORNE HOWES | 1,100 | July 27, 1854 | New York Mar. 6 | Shanghai July 26 | 142 | Traded in Pacific and then took grain from San Francisco to Liverpool. |
| BLACK PRINCE | 1,061 | Aug. 6, 1856 | New York | Shanghai | 167 | Got ashore at Woosung; discharged cargo into lighters; ship was hogged. |

The clipper ship SNOW SQUALL (742 tons; built in 1851) in 1862 ran from Penang to New York in 100 days and was off the Cape of Good Hope for nine days. The MONSOON (773 tons; built in 1851) reached New York July 6, 1862, 98 days from Anjer, and the GAUNTLET (1,854 tons; built in 1853) left New York Apr. 16, 1862, and was at Anjer July 5 (80 days out) bound for Hong Kong.

(Continued on next page)

| Name of Clipper | Tonnage | Built (launched) | From | To | Passage in Days | Remarks |
|---|----------------------------|------------------|---------------------|------------------------------|-----------------|---|
| <i>Homeward-bound Passages, 1863</i> | | | | | | |
| SAMUEL RUSSELL | 957 | 1847 | Hong Kong | New York | 89 | A very fast run. In 1861, was 94 days from Hong Kong to New York. |
| SURPRISE | 1,261 | Oct. 5, 1850 | Amoy | New York | 91 | Forty-five days to Cape; 46 days from Cape. |
| GOLDEN WEST | 1,441 | Nov. 16, 1852 | Shanghai Jan. 7 | New York Apr. 18 | 101 | Was then taken to Liverpool and sold because of Civil War. |
| ENDEAVOR | 1,137 | 1856 | Foochow Sept. | New York Dec. | 104 | Fifty-six days to Cape; 48 days from Cape. |
| RESOLUTE | 786 | Jan. 15, 1853 | Shanghai Mar. 28 | New York July 18 | 112 | Twenty-seven days to Anjer; 85 days from Anjer. |
| HOUQUA (bark) | 583 | May 3, 1844 | Foochow Apr. 25 | New York Aug. 23 | 120 | Seventy days to Cape; 50 days from Cape. |
| PANAMA | 1,139 | Oct. 11, 1853 | Hong Kong Aug. 1 | New York Nov. 30 | 121 | Forty-four days to Anjer; 77 days from Anjer; 50 days from Cape. |
| <i>Outward-bound Passage, 1863</i> | | | | | | |
| CONTEST | 1,098 | Oct. 9, 1852 | New York Feb. | Hong Kong May | 99 | Her final voyage. On Nov. 11, 1863, captured and burned by the ALABAMA near Anjer. |
| In 1863 the clipper SNOW SQUALL (742 tons; built in 1851) ran from Penang to New York in 94 days. | | | | | | |
| <i>Homeward-bound Passage, 1864</i> | | | | | | |
| RESOLUTE | 786 | Jan. 15, 1853 | Hong Kong Mar. 2 | New York June 15 | 105 | Thirteen days to Anjer; 92 days from Anjer; 52 days from Cape. |
| <i>Homeward-bound Passages, 1865</i> | | | | | | |
| MIDNIGHT | 962 | Apr. 17, 1854 | Whampoa Nov. 30 | New York Feb. 26, 1866 | 87 | Ten days to Anjer; 77 days from Anjer. Cape, Jan. 12; line, Feb. 5. |
| BENEFACTRESS | Reported as a clipper bark | | Amoy Nov. 26 | New York Feb. 22, 1866 | 87 | Fourteen days to Anjer. Sighted MIDNIGHT Dec. 15 and beat her four days to New York. |
| N. B. PALMER | 1,399 | Feb. 5, 1851 | Hong Kong | New York | 92 | In 1858-1859, ran from Shanghai to New York in 82 days; 64 days from Anjer. |
| SEA SERPENT | 1,337 | Dec. 1850 | Whampoa Oct. 21 | New York Jan. 24, 1866 | 95 | Twenty-five days Macao to Anjer; 69 days Anjer to New York; 44 days Cape to New York. |
| SAMUEL RUSSELL | 957 | 1847 | Yokohama Nov. | New York 1866 | 103 | Twenty-three days to Anjer; 80 days from Anjer. |
| ARCHER | 1,095 | Dec. 29, 1852 | Foochow | New York | 106 | Put on sand bar by pilot in River Min and had to be docked for repairs. |
| PANAMA | 1,139 | Oct. 11, 1853 | Whampoa Sept. 20 | New York Jan. 21, 1866 | 123 | Sixty-five days to Cape; 58 days from Cape. |

*The Fastest Passages Made by American Clippers in the
U.S.A.-China Trade from 1844 to the End of Sail*

The following is a list of the fastest reported passages made by sailing vessels between any United States and China ports during the annals of sail. In this first of two tables, passages made in 85 days or less, whether outbound or homeward-bound, and between any ports in China and any East Coast U.S.A. ports are set forth in order, according to the length of passage, without regard to ports of departure and destination.

| Name of Clipper | Passage in Days | Departure | Destination |
|-----------------|---------------------|----------------------------|---|
| SEA WITCH | 74 days 14 hours | Hong Kong Jan. 8, 1849 | New York Mar. 25, 1849 |
| SEA WITCH | 77 | Whampoa Dec. 29, 1847 | New York Mar. 15, 1848 |
| NATCHEZ | 78 days 6 hours | Macao Jan. 14, 1845 | Pilot off Barnegat (New York) Apr. 3, 1845 |
| SEA SERPENT | 79 | Whampoa Jan. 3, 1856 | New York Mar. 22, 1856 |
| SEA WITCH | 81 | Whampoa May 5, 1847 | New York July 25, 1847 |
| ORIENTAL | 81 | Whampoa Jan. 20, 1850 | New York Apr. 21, 1850 |
| ORIENTAL | 81 | New York May 18, 1850 | Hong Kong Aug. 8, 1850 |
| SWORDFISH | 81 | Shanghai Dec. 12, 1859 | New York Mar. 2, 1860 |
| SURPRISE | 82 | Shanghai Jan. 1, 1857 | New York Mar. 25, 1857 |
| N. B. PALMER | 82 | Shanghai Oct. 1858 | New York Jan. 1859 |
| SNOW SQUALL | 82 | Amoy 1861 | New York 1861 |
| EAGLE WING | 82 | Hong Kong Mar. 13, 1859 | New York June 3, 1859 |
| SAMUEL RUSSELL | 83 | Whampoa 1848 | New York 1848 |
| HOUQUA | 84 | New York July 1844 | Hong Kong Sept. 1844 |
| N. B. PALMER | 84 | Macao Jan. 10, 1852 | New York Apr. 3, 1852 |
| ATALANTA | 84 | Hong Kong Dec. 16, 1852 | New York Mar. 10, 1853 |
| RAINBOW | 84 | Whampoa Jan. 24, 1846 | New York Apr. 18, 1846 |
| EAGLE WING | 84 | Woosung Nov. 23, 1855 | New York Feb. 15, 1856 |
| GOLDEN STATE | 84 sailing days | Hong Kong Dec. 2, 1859 | New York Mar. 2, 1860 |
| ELECTRIC SPARK | 84 | Whampoa Dec. 11, 1859 | New York Mar. 5, 1860 |
| SEA WITCH | 85 | Whampoa Dec. 12, 1849 | New York Mar. 7, 1850 |
| PANAMA | 85 | Shanghai Oct. 27, 1854 | New York Jan. 21, 1855 |
| NABOB | 85 | New York 1857 | Hong Kong 1857 |

These twenty-three very fast passages in 85 days or better in the U.S.A.-China trade were made by seventeen ships. The *Sea Witch* is credited with four of these outstanding fast runs and the *Oriental*, *N. B. Palmer*, and *Eagle Wing* each with two.

The fastest homeward passage from China originating at Hong Kong (or the entire Canton, Hong Kong, Whampoa, and Macao area) was the historic run of the *Sea Witch* (Capt. Robert H. Waterman) in 74 days 14 hours made during the first three months of 1849. The second best passage between the same ports is also held by the *Sea Witch* and Captain Waterman (77 days in 1847-1848), and the honor of making the third fastest run of all time from Hong Kong to New York is generally given to Captain Waterman and the *Natchez* (78 days 6 hours in 1845). However, there seems to be a question as to whether the *Natchez* or the *Sea Serpent* (Capt. J. D. Whitmore) is entitled to the honor of having made the third fastest passage of all time from China to New York if the place and time of both departure and arrival are given due consideration. A comparison of the available records covering the runs of the two competitors for third place honors is as follows:

| Name of Ship | Tonnage | Built | Departure | Arrival | Reported Length of Passage over Stated Course |
|--------------|---------|------------------------------|------------------------------|--|--|
| NATCHEZ | 524 | New York 1831 | Macao Jan. 14, 1845 | Pilot off Barnegat, N. J. Apr. 2-3, 1845 | From off Macao to pilot, 78 days 6 hours covering 13,955 miles. |
| SEA SERPENT | 1,337 | Portsmouth, N. H. 1850 | Hong Kong Jan. 3, 1856 | New York Mar. 22, 1856 | Seventy-nine days from Whampoa to New York; 69 days from Java Head; 39 days from Cape. |

Evidently, the 79-day run of the *Sea Serpent* was for a complete passage, but the *Natchez* was timed between points that gave her a few hours' advantage at the China end or possibly a day or so between the pilot off Barnegat and anchoring in New York Harbor. The sailing performance of the little old flat-bottomed Mississippi River packet on this passage is one of the most amazing in the entire annals of sail, and the run has been called "a lucky freak." That the *Natchez* was "lucky" is unquestioned, but every sailing vessel, to make a world sailing record (as she did in early 1845), must of necessity be smiled upon by Dame Fortune. The *Natchez*, built to run as a coasting packet between New York and New Orleans, was well modeled and a very speedy sailer; she had a light draft, so that she could cross the bars at the mouth of the Mississippi and go up and down the river, and when she had a driver like Capt. "Bob" Waterman aboard, she always made good time. On his first run home from China in the *Natchez*, a record passage of 92 days was claimed (but the *Sabina*, in 1834, had made the run in 90 days and the *Helena*, in 1844, equaled the old ten-year record). On her second passage from China, Waterman brought the *Natchez* home in 94 days, and it was on his third Canton-to-New York passage that Waterman made the wonderful run of 78 or 79 days with the old sailing coastal packet. On his fourth and last voyage in her, she made an out-of-season passage of 103 days (the *Rainbow*, on her run home, reached New York September 17, 1845, 108 days out from Whampoa). These four homeward passages of the *Natchez* in the China trade, made under the command of Captain Waterman, averaged only 92 days, which is a most excellent performance for four consecutive passages westbound over the course.

The *Sea Witch*, in addition to holding honors for making the first and second fastest passages of all time from Hong Kong to a North Atlantic port, is tied with the *Oriental* for fifth place; both ships made runs of 81 days, the *Sea Witch* in 1847 and the *Oriental* in 1850. It is of interest to note that at the commencement of 1850, the *Sea Witch* had the rare distinction of having made the first, second, and fourth fastest passages between any ports in China and the North Atlantic, and she holds both first and second honors over this course—either outbound or homebound—to this day and the end of sail.

The fastest run ever made to New York or any other North Atlantic port from Shanghai (a port about 850 miles up the China coast from Hong Kong) is credited to the *Swordfish* with a passage of 81 days made during the period from the end of December 1859 to the middle of March 1860. Two other very fast American clippers, with reported runs of 82 days, challenge the *Swordfish* for this distinctive honor, and a matter of but a few hours separates the length of passages made by the *N. B. Palmer* in 1858-1859, the *Surprise* in early 1857, and the *Swordfish*. The next fastest runs over the Shanghai-New York (or North Atlantic port) course were made by the *Eagle Wing* (from Woosung) with 84 days in the winter of 1855-1856 and the *Panama* with 85 days in 1854-1855. The record from any China port up the China coast between Hong Kong and Shanghai is held by the little Maine-built clipper *Snow Squall*, which in 1861 made a passage of 82 days from Amoy to New York. Running out to China, the all-time record is held by the *Oriental* with an 81-day passage from New York to Hong Kong in May-August 1850. Second honors go to the little *Houqua* (of 583 tons; built in 1844) with a passage between the same ports of 84 days in the summer of 1844, and third place is held by the *Nabob*, which made this outward run in 85 days in 1857. Very few ships made a passage from an East Coast U.S.A. port direct to Shanghai, and most of the clipper ships in the American China trade that loaded at Shanghai for home went out to Hong Kong and then sailed up the coast to Shanghai. In 1869 the *N. B. Palmer* (Capt. Charles P. Low) made a passage of 93 days from New York to Shanghai pilot. In 1856 the *Argonaut* (575 tons; built in 1849) ran from Boston to Shanghai in 99 days, and in 1860 the *Phantom* made a passage of 99 days from New York to Shanghai.

Of the twenty-three passages here recorded that were made in 85 days or better between United States and China ports, twenty were homeward-bound and only three outbound runs; seventeen passages (74 per cent) were between the Hong Kong area and New York, five between the Shanghai area (all homebound) and New York, and one was a run from Amoy to New York.

The following is a record of twenty-eight clipper ship passages between China and United States ports made in from 86 to 90 days inclusive and completes the list of fifty-one passages made in this trade in 90 days or better. Of these runs, four were made in better than 80 days, nine in 81-83 days inclusive, ten in 84-85 days, nine in 86-87 days, and nineteen in 88-90 days inclusive. Of the twenty-eight passages of from 86 to 90 days inclusive recorded below, twenty-two were homeward and six outward runs; nineteen were between the Hong Kong area and either New York or Boston and six between Shanghai (or Woosung) and New York; two were runs from Amoy and one from Foochow to New York.

| Name of Clipper | Passage in Days | Departure | Destination |
|---------------------|---------------------|---------------------------|---------------------------|
| RAINBOW | 86 | Whampoa Dec. 1846 | New York Mar. 1847 |
| SHOOTING STAR | 86 | Macao Dec. 20, 1851 | Boston Feb. 15, 1852 |
| SURPRISE | 86 | Hong Kong | New York |
| HOUQUA | 86 days 17 hours | New York May 1846 | Hong Kong Aug. 1846 |
| MERMAID (bark) | 87 | Macao Mar. 13, 1852 | Boston June 8, 1852 |
| GAME COCK | 87 | Shanghai Dec. 30, 1855 | New York Mar. 26, 1856 |
| PANAMA | 87 | Foochow Dec. 6, 1859 | New York Mar. 2, 1860 |
| MIDNIGHT | 87 | Whampoa Nov. 30, 1865 | New York Feb. 26, 1866 |
| BENEFACTRESS (bark) | 87 | Amoy Nov. 26, 1865 | New York Feb. 22, 1866 |

(Continued on next page)

| Name of Clipper | Passage in Days | Departure | Destination |
|-----------------|-----------------|---------------------------|-----------------------------|
| HOUQUA | 88 | Shanghai Oct. 24, 1850 | New York Jan. 20, 1851 |
| RAINBOW | 88 | Whampoa Nov. 1847 | New York Feb. 1848 |
| SEA SERPENT | 88 | Whampoa Oct. 4, 1852 | New York Dec. 31, 1852 |
| WIZARD | 88 | Whampoa Mar. 22, 1854 | New York June 18, 1854 |
| INO | 88 | Woosung Nov. 21, 1858 | New York Feb. 17, 1859 |
| N. B. PALMER | 88 | New York 1858 | Hong Kong 1858 |
| GOLDEN STATE | 88½ | Shanghai Jan. 1, 1855 | New York Mar. 31, 1855 |
| SAMUEL RUSSELL | 89 | Whampoa Oct. 29, 1850 | New York Jan. 26, 1851 |
| SAMUEL RUSSELL | 89 | Hong Kong 1863 | New York 1863 |
| MANDARIN | 89 | Woosung Feb. 19, 1853 | New York May 19, 1853 |
| SWORDFISH | 89 | Whampoa Sept. 25, 1852 | New York Dec. 23, 1852 |
| STAG HOUND | 89 | Whampoa Oct. 24, 1853 | New York Jan. 21, 1854 |
| WHITE SWALLOW | 89 | New York June 28, 1857 | Hong Kong Sept. 23, 1857 |
| KATHAY | 89 | Amoy Dec. 6, 1860 | New York Mar. 5, 1861 |
| GOLDEN STATE | 90 | New York 1855 | Hong Kong 1855 |
| HIGHFLYER | 90 | Whampoa Dec. 1853 | New York Mar. 1854 |
| MESSENGER | 90 | Shanghai Oct. 24, 1854 | New York Jan. 22, 1855 |
| HOTSPUR | 90 | New York Apr. 4, 1857 | Hong Kong July 3, 1857 |
| HOUQUA | 90 | New York 1849 | Hong Kong 1849 |

In addition to the before-stated list of passages of American clipper ships of 90 days or better in the U.S.A.-China trade, American clippers made records in the British China trade, of which the following are outstanding, all three being made in better than 90 days:

The *Eagle Wing* of 1,174 tons (built at Medford, Mass., in 1853) arrived at Hong Kong July 10, 1855, 83 days 12 hours from Deal (London), pilot to pilot, the all-time record between London and Hong Kong.

The *Comet* of 1,836 tons (built at New York in 1851) reached Hong Kong September 7, 1854, 83 days 21 hours from Liverpool, pilot to pilot,

the all-time record between Liverpool and Hong Kong.

The *Golden Gate* of 1,349 tons (built at New York in 1851) arrived off Beachy Head and took pilot to take her up the Thames on February 23, 1855, after a passage of 86 sailing days (via Batavia) from Shanghai—the all-time record between Shanghai and any British port.

The twenty-eight clipper ship passages here recorded of from 86 to 90 days inclusive between U.S.A. and China ports were made by twenty-three different ships, the *Houqua*, in this range, making three passages and the *Rainbow*, *Samuel Russell*, and *Golden State* two each. The fifty-one passages mentioned herein of 90 days or better were made by thirty-one ships. The *Sea Witch* (908 tons; built in 1846) and *Houqua* (583 tons; built in 1844) are each credited with four of these outstandingly fast passages and the *Rainbow* (752 tons; built in 1845), *Samuel Russell* (957 tons; built in 1847), *N. B. Palmer* (1,400

tons; built in 1851), and *Golden State* (1,363 tons; built in 1853) each with three; the *Oriental*, *Surprise*, *Swordfish*, *Sea Serpent*, *Eagle Wing*, and *Panama* each made two fast passages in 90 days or less, and these twelve ships were undoubtedly the vessels with the best reputation for speed that ever engaged in the American China trade.

That part of the course traversed in the North Atlantic port-China trade known as the deep-sea run between the East Coast U.S.A. or British port and the straits leading to or from the China Sea was the only fairly reliable part of the route as far as uniform sailing and comparative length of passages made at different times of the year were concerned. Whereas in the early clipper ship days an outbound passage to China might be via Allas Straits, the route very generally was via the Straits of Sunda and became exclusively so—both ways—with the timing of the passage out and home being recorded either at Anjer within the Straits or at Java Head on the Indian Ocean side. In gauging a ship's real sailing ability, the passages between a North Atlantic port and Anjer or Java Head are of importance, as they can be compared with performances of other sailing vessels over this deep-sea part of the course (some 85 per cent of the total distance), which eliminates the fluky journey up or down the China Sea, with its erratic monsoons, and which might require a short, moderate, or long time according to the season of the year and the smiles or frowns of Dame Fortune. The following is a record of the best reported passages of American ships from the Straits of Sunda across the Indian Ocean, around the Cape of Good Hope, and up the Atlantic home—generally to New York:

| Name of Clipper | Arrival at New York | Passage in Days | From | Name of Clipper | Arrival at New York | Passage in Days | From |
|-----------------|---------------------------------------|-----------------|-------------------|----------------------|---------------------|-----------------|-----------|
| SEA WITCH | July 25, 1847 | 62 | Anjer | STAG HOUND | Dec. 30, 1852 | 72 | Anjer |
| N. B. PALMER | Jan. 1859 | 64 | " | SEA SERPENT | Dec. 30, 1853 | 72 | " |
| SAMUEL RUSSELL | Nov. 30, 1849 | 64 | Java Head | PAMPERO | July 31, 1854 | 72 | " |
| YOUNG AMERICA | July 23, 1865 (pilot off Barnegat) | 65½ | " " (from Manila) | FLYING CLOUD | Dec. 14, 1855 | 72 | " |
| SEA WITCH | Mar. 15, 1848 | 66 | Anjer | SEA WITCH | Mar. 7, 1850 | 73 | " |
| PANAMA | Jan. 21, 1855 | 67 | " | MESSENGER | Apr. 14, 1852 | 73 | " |
| INO | Feb. 19, 1859 (Sandy Hook pilot) | 67 | Java Head | MANDARIN | May 19, 1853 | 73 | " |
| MESSENGER | Jan. 22, 1855 | 68 | Anjer | WIZARD | June 18, 1854 | 73 | " |
| SEA WITCH | Mar. 25, 1849 | 69 | " | KATHAY | Jan. 12, 1856 | 73 | " |
| SEA SERPENT | Mar. 22, 1856 | 69 | " | BENEFAC-TRESS (bark) | Feb. 22, 1866 | 73 | " |
| SURPRISE | Mar. 25, 1857 | 69 | " | HURRICANE | May 18, 1853 | 73 | Java Head |
| SEA SERPENT | Jan. 24, 1866 | 69 | " | TINQUA | Dec. 9, 1853 | 74 | Anjer |
| ORIENTAL | Apr. 21, 1850 | 70 | " | LOTUS | Dec. 1, 1855 | 74 | " |
| SAMUEL RUSSELL | Jan. 26, 1851 | 70 | " | GOLDEN STATE | Fall 1857 | 74 | " |
| SAMUEL RUSSELL | July 10, 1852 | 70 | " | KATHAY | 1860 | 74 | " |
| SWORD-FISH | Dec. 23, 1852 | 70 | " | ROMANCE OF THE SEAS | June 22, 1859 | 75 | " |
| GAME COCK | Fall 1854 | 70 | " | ATALANTA | Mar. 10, 1853 | 75 | " |
| SNOW SQUALL | 1861 | 70 | " | ROBIN HOOD | Mar. 16, 1854 | 75 | " |
| STAG HOUND | Jan. 21, 1854 | 70 | Java Head | FLYAWAY | June 8, 1854 | 75 | " |
| SAMUEL RUSSELL | Summer 1848 | 71 | Anjer | JACOB BELL | Jan. 23, 1860 | 75 | " |
| SWORD-FISH | Mar. 2, 1860 | 71 | " | ENDEAVOR | Dec. 1862 | 75 | " |
| STAG HOUND | Jan. 11, 1852 | 72 | Java Head | HOUQUA | 1846 | 75 | " |

The *Oriental* of 1,003 tons, built by Jacob Bell, New York, in 1849, was the pioneer real clipper in the British China tea trade. On her first passage from Hong Kong to London (97 days from anchor to unloading dock), she made the run from Anjer (September 18, 1850) to the Lizard (November 27) in 70 days—the record to that time. The *Challenge* of 2,006 tons (built by William H. Webb, New York, in 1851), on a passage from Hong Kong to London in 1852, was at Anjer September 13 and reached Deal (London) November 18, making an all-time record run of 65 days from Anjer to pilot for London. The *David Brown* of 1,717 tons (built by Roosevelt & Joyce at the old Brown & Bell yard, New York, in 1853), on a passage from Shanghai to London in 1854, left Anjer September 13 and arrived at Gravesend (London) October 28 after a run of 69 days from Anjer to the pilot for London. This very fast passage was made with the ship's copper torn and the cutwater twisted from being aground.

The length of outward passages from U.S.A. ports to Anjer and the straits leading to the China Sea was not given as much prominence in abstract logs of the clippers and in the press as was the case with the homeward runs, with the length of passage made public immediately following the arrival at the home (or U.S.A. East Coast) port. The following are the fastest passages made from New York to Anjer, Java Head, and the straits obtained from available abstract logs or press notices:

| Name of Clipper | Tonnage | Departure from U. S. A. | | Passage | |
|--------------------|---------|-------------------------|---------------|---------------------|----------------------|
| | | Port | Date | Days | To |
| SAMUEL RUSSELL | 957 | New York | Fall 1851 | 68 | Allas Straits |
| ORIENTAL | 1,003 | New York | May 18, 1850 | 71 | Prince's Strait |
| INO | 895 | New York | Dec. 11, 1857 | 71 | Anjer |
| HOUQUA | 581 | New York | July 1, 1844 | 72 | Anjer |
| HOUQUA | 581 | New York | May 1846 | 72 days 14 hours | Java Head |
| HELENA | 598 | New York | Nov. 1, 1845 | 73 days 20 hours | Java Head |
| WITCH OF THE WAVE | 1,498 | Boston | Sept. 6, 1854 | 73 76 | Java Head Batavia |
| GAME COCK | 1,392 | New York | Late 1861 | 75 | Java Head |
| HOTSPUR | 862 | New York | Apr. 25, 1861 | 76 | Anjer |
| MAURY | 600 | New York | Apr. 27, 1861 | 76 | Anjer |
| GAME COCK | 1,392 | New York | June 10, 1859 | 76 | Java Head |

Later Passages in the China Trade of American Clippers Built in the Fifties

The following passages of American clipper ships in the U.S.A.-China trade during the years after 1865 have been recorded and are most creditable. The continued fine sailing performance of the *N. B. Palmer* in the China trade as she got older is outstanding and seems to justify the designations of "Queen of the China Clippers" and "Gem of the Hong Kong trading ships of all nations," which honorable titles she held up to the time of her sale by A. A. Low & Bro. in February 1873 and the retirement from the sea of her competent and popular skipper, Capt. Charles Porter Low.

| Name of Clipper | Tonnage | Year Built | From | To | Passage in Days | Remarks |
|------------------|---------|------------|------------------------------|------------------------------|-----------------|---|
| GEM OF THE OCEAN | 702 | 1852 | Whampoa Jan. 5, 1866 | New York Apr. 13, 1866 | 98 | Returned to Pacific, reaching San Francisco May 26, 1867, via Hong Kong. |
| N. B. PALMER | 1,399 | 1851 | New York 1868 | Hong Kong | 90 | The second fastest of fifteen passages outbound between these ports. Made when she was over seventeen years old. |
| GAME COCK | 1,392 | 1850 | New York 1869 | Hong Kong | 92 | A fine passage, followed when ship was over twenty years old by another good run of 75 days from New York to Melbourne. |
| N. B. PALMER | 1,399 | 1851 | New York 1869 | Shanghai | 93 | A remarkably fast run of 93 days to Shanghai pilot. Made when ship was over eighteen years old. |
| N. B. PALMER | 1,399 | 1851 | New York 1870 | Hong Kong | 93 | The third fastest of fifteen passages outbound between these ports. Made when she was over nineteen years old. |
| SEA SERPENT | 1,337 | 1850 | Shanghai Nov. 17, 1873 | New York Feb. 19, 1874 | 94 | Also reported as 95 days. In May 1875, when twenty-five years old, sold to Norwegians and renamed PROGRESS. |

The medium clipper ship *Prima Donna* (1,529 tons; built in 1858 at Mystic, Conn.) was a rather full-bodied ship and a good carrier. On two Cape Horn westbound passages from New York to San Francisco, she ran practically even with good sailers; on her maiden voyage, she went out in 118 days, whereas *Neptune's Favorite* (1,347 tons; built in 1854), sailing near her, made the run in 117 days, and the fast *Herald of the Morning* (1,294 tons; built in 1853) had a passage out of 116 days. In 1867 the *Prima Donna* left New York in company with the *Governor Morton* (1,429 tons; built in 1851), and the ships passed through the Golden Gate within three hours of each other, both having made passages of 123 days and been together virtually all the way during the four-month period. In 1862 the *Prima Donna* ran from San Francisco to New York in 100 days and was only 15 days running to the Pacific equator and 41 days from the Golden Gate to Cape Horn. In 1878 the ship engaged in trade between New York, Japan, China, and the Philippines, and the only surviving record of her sailing in the U.S.A.-China trade is a very slow passage from China home in 1882. Leaving Hong Kong October 18, the *Prima Donna* was through the Straits and passed Java Head on December 26, when 69 days out. She was off the Cape of Good Hope January 26, 1883, after a good run across the Indian Ocean of 31 days, and then required 60 days from the Cape to New York, arriving at her destination March 27 after a very slow passage of 160 days (91 days from Java Head). Soon afterwards, the ship was sold to the Austrians, and Trieste became her hailing port when she was twenty-six years old.

Post-war American Ships and Down Easters in the China Trade

The American China trade, which was so important to the maritime interests of the nation in the early days of the republic and was most vigorous in the 1840's and during the clipper ship decade of the 1850's, dwindled to but little during the Civil War and was never recaptured. American post-war and post-clipper ships did but little China trading,

and American Down Easters were seldom, if ever, engaged in a U.S.A.-China voyage or employed on a passage from China home on the completion of a voyage that commenced with a run out to California or elsewhere. With the ocean-carrying business between East and West Coast ports of the country protected from foreign competition by the national navigation law, American marine sail, after the California gold and clipper ship booms and the Civil War, had to build upon its favored Cape Horn trade for survival. Therefore, American post-war deep-sea square-riggers, which gradually became known as Down Easters, were primarily Cape Horners, and a vast majority of these ships, if they ever visited China at all, did so incidentally during some phase of a voyage in which trading with China was of secondary importance. As the years advanced, American sailing ships, at times, carried coal and case (or barrel) oil to China and ports in the Far East, and many of these coal cargoes, during a term of years, originated in Britain.

The *Great Admiral* of 1,497 net tons (built at East Boston in 1869 for William F. Weld & Company, Boston), during her twenty-eight years of service (1869-1897) under the Black Horse flag of that firm, made some eighty passages all told, fifty-eight of which were each of from about 6,000 to 17,500 miles long and sixty-six over 3,000 miles. Ignoring the transpacific runs between San Francisco and Hong Kong (which were numerous in 1888 and 1889), the *Great Admiral* made only two American China and three British China passages, or five passages in all between North Atlantic and China ports, although San Francisco was the port of either departure or destination of thirty-five of the ship's passages. Not a single one of the *Great Admiral's* passages was from an East Coast U.S.A. port to a China port, and both of the runs in this trade were from Hong Kong to New York, one in 1884 and the other in 1890. The other three passages between North Atlantic ports and China were outbound with coal cargoes from Britain to Hong Kong and were made during the period 1876-1883 inclusive. The following is a comparative record of the five runs made by the *Great Admiral* in the North Atlantic-China trade during her sea life of thirty-seven and a half years, which covered the period from the summer of 1869 to December 1906:

| Year | Port of Departure | Port of Destination | Length of Passage in Days | Distance Nautical Miles |
|------|-------------------|---------------------|---------------------------|-------------------------|
| 1876 | Liverpool | Hong Kong | 99 | 15,455 |
| 1880 | Cardiff | Hong Kong | 107 | 15,321 |
| 1883 | Cardiff | Hong Kong | 121 | 15,455 |
| 1884 | Hong Kong | New York | 95 | 14,069 |
| 1890 | Hong Kong | New York | 104 | 14,267 |

From March 1897 (when the *Great Admiral* was sold by Weld & Company to Capt. E. R. Sterling, San Francisco, for \$12,500) to the time of her loss on December 6, 1906, during a coastal run from Puget Sound to San Pedro, Calif., she was operated in the Pacific in the coal and lumber trade.

The ship *South American* of 1,694 tons (built at East Boston in 1876 for Henry Hastings, of Boston) was of the same general type as the *Great Admiral*, and she engaged in the same class of world trade for a period of some thirteen years, being wrecked September 15, 1889, during a passage when she was carrying sugar from Iloilo to Boston. During her career, the *South American* made thirty-three passages (twenty-three of 88-130 days, seven of 42-57 days, and three short runs of 8, 13, and 28 days, respectively). Of these passages, five were transpacific, but only five were between North Atlantic and China ports, four outbound carrying coal from Cardiff, Wales, to Hong Kong, and the only passage that the ship made between an East Coast U.S.A. and China port was a fast run of 89 days from Hong Kong to New York in 1885. The four passages from Cardiff to Hong Kong were as follows: 114 days in 1879, 103 days in 1880, 89 days in 1884, and 100 days in 1885—an average of 101½ days for the four British China coal runs. The passages of 89 days from Cardiff to Hong Kong in 1884 and of 89 days from Hong Kong to New York the following

year are noteworthy, being made in clipper ship time. Whereas four American clipper passages have been made from Hong Kong to New York in 79 days or less and forty from Chinese ports (Hong Kong, Shanghai, or intermediate ports) to East Coast U.S.A. ports (thirty-eight to New York and two to Boston), a run of 89 days from any China to any North Atlantic port was always considered a fast passage throughout the era of sail. Although the little U.S.A.-China trader *Sabina* (412 tons; built in New York in 1823) made a then record run from China to New York in the early part of 1834 in 90 days, the Baltimore clipper *Ann McKim*, built primarily for speed, boasted of her sailing prowess when she returned home from China in the spring of 1843 in 96 days. In 1888 the *South American* reported a day's run of 353 miles by observation in the South Pacific during a 53-day passage from Sydney to San Diego—a performance that would have been creditable for a clipper. Although built to carry cargoes and make money by freight revenue rather than to win glory by speed, the few post-war American sailing ships and Down Easters that did participate once in a while in the North Atlantic-China trade did occasionally make very fast runs between ports.

The Down Easter *Lucy A. Nickels* of 1,395 tons (owned in Searsport, Maine, and built in 1875), under the command of Capt. Charles M. Nichols, is credited with a passage of 91 days from Hong Kong to New York. The *Tam O'Shanter* of 1,522 tons (built at Freeport, Maine, in 1875) and the *Wandering Jew* of 1,650 tons (built at Rockport, Maine, in 1877) left Hong Kong in company in 1895 bound for New York. Both ships had the reputation of being "good sailing Down Easters," and they engaged in a memorable race. The vessels met on several occasions during the passage, sailing at times almost side by side, day after day, and demonstrating that they were evenly matched if given the same sailing chance. The ships arrived at New York 95 days from Hong Kong, and both Capt. Thomas Peabody of the *Tam O'Shanter* and Capt. Daniel C. Nichols of the *Wandering Jew* declared the race to be a tie. The *Wandering Jew* took coal from Cardiff, Wales, to Hong Kong on her maiden voyage in 1878 and was 118 days on the passage, following which she made an amazingly fast run of 33 days from Hong Kong to San Francisco, which stands as one of the outstandingly fast passages in the history of merchant sail. The ship was burned and scuttled at Hong Kong on October 30, 1895, and after being raised and repaired, she was used up the river above Shanghai as a landing barge.

The *Gov. Goodwin*, built at East Boston in 1877, measured 1,459 tons gross and 1,413 tons net and saw some service trading with the Far East. In 1888 she ran from Philadelphia to Anjer in 84 days and thence 33 days to Kobe, making the complete passage to the Japanese port in 117 sailing days. With a badly sprung foremast, which prevented the ship from carrying much sail forward in heavy weather, she returned from Hong Kong to New York in 130 days. After repairs were made, the *Gov. Goodwin* went out to Anjer again "for orders" and made the run once more in 84 days. Being ordered to Shanghai, she made that port in 115 sailing days from New York, which, it is said, was "the fastest passage made about that time." After taking some cargo aboard at Shanghai, the "*Goodwin*" went to Hong Kong to fill her holds, and leaving that port on January 3, 1890, she passed Anjer 13 days out, the Cape of Good Hope on the 52nd day, was at St. Helena when 65 days out, crossed the Atlantic equator on the 79th day, and, with a run of 18 days from the line, reached New York April 10, 1890, after a passage of 97 days from Hong Kong. The *Gov. Goodwin* was wrecked on a reef in the Straits of Sunda in 1896 when bound from New York to Chefoo with case oil.

The Down Easter *Paramita* of 1,573 tons, built in 1879 by Capt. Enos C. Soule at Freeport, Maine, made some voyages from Atlantic ports to the Far East prior to 1900, when she was employed in the coal- and lumber-carrying trade on the Pacific for some four years, followed by about ten years' service as an Alaskan salmon packer until she was wrecked May 14, 1914, when thirty-five years of age. In February 1897, the *Paramita* arrived at New York in 99 days from Hong Kong and reported having "on several days made 350 miles."

Another Down Easter, the *Paul Jones* of 1,258 tons, built by Fernald at Portsmouth, N. H., in 1877, was used entirely in Cape of Good Hope passages to the East Indies, Orient, and Australia. Evidently, she was unique, as there is no evidence of her ever having made a Cape Horn passage. In 1879 the *Paul Jones* went from New York to Batavia in 103 days, but the next year (1880) she made a fine passage of 105 days out to Shanghai from New York. In 1883 the ship, on a passage from Hong Kong home, ran from Anjer to New York in 83 days and did very fair sailing in the Atlantic, being 38 days from St. Helena and 22 days from the line to her destination. On her last voyage, the *Paul Jones* left New York for Melbourne in 1885, and when proceeding from Australia to China, she was burned at sea; her crew was rescued by the British ship *Antiope* and landed at Melbourne.

During the last years of American merchant sail, United States-owned ships took cargoes of case oil from East Coast U.S.A. ports to Shanghai or Japanese ports such as Hiogo (Kobe) or Yokohama, but this gradually became a business that was monopolized by Anglo-American Oil Company and Standard Oil Company square-riggers, and these sailing vessels, after a brief successful career, were displaced by power bulk tankers. Coal was shipped to Hong Kong by sailing ship for many years, but British merchant sail had the "inside track" on all such business, and when an American ship participated in the trade, it was to take a cargo of coal out from a British port (generally Cardiff, Wales) to the British Crown colony of Hong Kong. British tonnage always enjoyed an advantage in movements of this kind, and possibly American ships obtained an occasional cargo, as the commodity carried was dirty, inclined to be hazardous, and not deemed a desirable cargo for a first-class ship to carry.

Britain's Small Specialized Clippers and "Racing Machines" Built for the China Tea Trade

Tea clippers were built in Britain specifically and exclusively for the China trade from the mid-century up to and including 1870. These clippers were of wood, iron, or composite construction; but, as before stated, iron sailing ships (although many were built) were never deemed entirely suitable in the tea trade or satisfactory for carrying this one peculiar cargo. The final construction period of Chinese tea clippers was from 1859 to 1869, when Britain enjoyed a virtual monopoly of the trade. This period can be divided into the wood era, from 1859 to 1863, when seven fine clippers were built of wood coppered (averaging 765 tons register), and the composite era, from 1863 to 1869, when twenty splendid, fast, and strong clippers were constructed of iron and teakwood coppered on the composite principle; these ships averaged 827 tons register, the largest being the *Thermopylae* (948 tons), built in 1868, and the smallest the *Ada* (687 tons), built in 1865, both in Aberdeen.

The year 1855 saw the launch of the *Kate Carnie* of 576 tons, the first of a famous line of tea clippers built by Steele on the Clyde. She was followed in 1858 by the diminutive *Ellen Rodger* of 585 tons; the following year by the *Falcon* of 794 tons; and during the next decade by the *Min* of 629 tons in 1861, *Guinevere* of 646 tons in 1862, and the *Serica* of 708 tons and *Tae ping* of 767 tons, built in 1863; the *Ariel* of 852 tons, *Sir Lancelot* of 886 tons, and *Chinaman* of 668 tons, built in 1865; the *Titania* of 879 tons, built in 1866; the *Labloo* of 799 tons, built in 1867; the *Kaisow* of 795 tons, built in 1868; and the *Wylo* of 799 tons, built in 1869. The *Tae ping*, launched by Steele in 1863, was the first of the composite vessels. In this system of construction, all the frames, beams, and reinforcing

members were of iron, and the bottom, sides, and deck were planked with wood copper-sheathed below the deep load water line. These ships were structurally strong, well braced, and kept very tight so as to deliver their tea cargoes in good condition. It is generally admitted that Steele designed and built as appealing and "eye-sweet" little ships as were ever floated. His composite-built clippers stood in the vanguard of the tea clipper fleet and were outstanding for their beauty and yacht-like appearance as well as occupying an unquestioned position in the first flight in the realm of speed and seaworthiness—considering the type and proportions. It is said that composite construction was first tried in 1839 by Watson, of Dublin. It was certainly used for the *Excelsior* of 1850 and the *Tubal Cain* of 1851, built by Jordan, of Liverpool. Bilbe & Perry, of Rotherhithe, built a composite ship, the *Red Riding Hood* of 720 tons, in 1857, and several China tea clippers built in 1861 and 1862, such as the *Min*, *Highblyer*, *White Adder*, and *Guinevere*, were constructed with iron deck beams, etc. The composite system of construction was popular in Britain for some twelve years, but was used only for the China and a few Australian clippers. Connell, of Glasgow, built eleven China tea clippers on the Clyde during the period 1863-1869 inclusive, six of which were for Skinner's "Castle" fleet, but his *Taitsing* (815 tons), *Spindrift* (899 tons), and *Windhover* (847 tons) were notable rivals of the product of the Steele yard. Other Clyde builders who constructed tea clippers of quality during the years 1864-1868 were Stephen (who launched five good ships), Lawrie (who built the *Leander* of 883 tons in 1867), and Elder; as early as 1853, Scott, of Greenock, constructed the famous tea clipper *Lord of the Isles* (770 tons) for Martin. It was the building of the tea clippers on the Clyde that laid the foundation of that river's supremacy in British ship construction—a narrow river which, without any apparent great natural advantages, has since floated the mammoth transatlantic steamships *Queen Mary* and *Queen Elizabeth* of over a thousand feet in length.

The British built "racing machines" for their China tea trade, and beginning with the *Falcon* of 794 tons, designed and constructed in 1859 by Steele, of Greenock, on the Clyde, the British China tea clippers became highly specialized, fast sailing craft that were built more like racing yachts than commercial vessels. It was said that they "could not have made their salt in any trade in the world other than the British-controlled China tea business," where everything that went to make up a ship was made subordinate to carrying a relatively small cargo at the highest possible speed from China to England. The *Falcon* is described by British marine historians as "the pioneer ship of a new era." Later, in 1863, composite construction commenced to be used, and Britain's finest tea clippers—considering speed, strength, and longevity—were built in the late sixties. Following the retirement of American ships from the China British trade, British tea clippers were built in quantity. From 1850 to 1859 inclusive (a period of ten years), about seventeen high-class fast ships had been built in England and Scotland for the trade (an average of only 1.7 per year); but in 1860-1861, eight of the new type of Chinese tea clippers were built in Britain (an average of four per year). During the American Civil War years 1862-1865, construction of such craft averaged some nine ships "of the top-flight" per year, and during the next five years, the average construction of these specialized speedy tea ships was over five per annum. There was no outside or foreign competition for the British ships engaged in the China British tea trade, but the rivalry between British ships, their owners, builders, and masters was very great, with speed the all-important gauge to determine success. Some fast tea passages were made between China and England in the sixties and seventies; but it is well to note that but few, if any, British passages, as reported, were from the loading anchorage in China to the dock in London, and as competition and striving for the honor of making a record or a fast passage increased, the length of a run became from pilot to pilot or even from land to land. Many a British-reported length of passage originated at a point in deep water well away from the port of departure and possible obstructions and delays and ended off a part of the English Channel coast anywhere between the Scilly Isles or Lizard Head (the southwest

corner of England) and Deal or the roadstead of the Downs or the North Sea in eastern Kent. An arrival at Gravesend, at the mouth of the Thames, or at Deal (or the Downs) was generally reported as an arrival at London. The following statement has been compiled from British records to show comparatively for each of the years 1860-1873 inclusive the number of British tea clippers engaged in the China-to-England tea races and the reported sailing performances of the ships participating in the highly publicized runs. By the time that Americans had withdrawn from the China British tea trade in the late fifties, Foochow had become the favorite Chinese tea port.

| Year | Number of Ships in Tea Race | Shortest Reported Passage (sea run under canvas between points—generally from pilot to pilot) | Longest Reported Passage (sea run under canvas between points—generally from pilot to pilot) | Average Time in Days | | |
|--|--|---|---|----------------------|---------------------|--------------------|
| | | | | All Runs | Three Shortest Runs | Three Longest Runs |
| 1860 | 5 from Foochow | FALCON, 110 days | ZIBA, 126 days | 120.8 | 117.7 | 125 |
| 1861 | 5 from Foochow | FIERY CROSS, 101 days | ROBIN HOOD, 125 days | 118.2 | 107.3 | 123.3 |
| (During this year, the ZIBA, CHRYSOLITE, NORTHFLEET, and CHALLENGER, sailing from Shanghai, all made passages of over 120 days.) | | | | | | |
| 1862 | 11 | ELLEN RODGER, 116 days (from Foochow) | ZIBA, 150 days (from Shanghai) | 126.9 | 118.3 | 139.3 |
| 1863 | 15 | FIERY CROSS, 104 days (from Foochow) | HIGHFLYER, 134 days (from Foochow) | 123.3 | 107.7 | 131.7 |
| 1864 | 21 | SERICA, 109 days (from Foochow) BELTED WILL, 109 days (from Hong Kong) (Three other starters did not complete the passage.) | WHINFELL, 137 days (from Foochow) | 124.6 | 110.7 | 135 |
| 1865 | 12 | TAEPING, 102 days (from Foochow) | ZIBA, 133 days (from Foochow) | 118.2 | 104.7 | 130.7 |
| 1866 | The year of the famous dead-heat race from Foochow. Sixteen starters; ARIEL, TAEPING, and SERICA finished ahead, each 99 days; then FIERY CROSS, 100 days and TAITSING, 101 days. BLACK PRINCE last. | | | | | |
| 1867 | 22 | SIR LANCELOT, 99 days (from Shanghai) | CHALLENGER, 127 days (from Shanghai) | 116.2 | 101 | 125.3 |
| 1868 | 18 | ARIEL, 97 days (from Foochow) SPINDRIFT, 97 days (from Foochow) SIR LANCELOT, 98 days (from Foochow) | FORWARD HO, 128 days (from Shanghai) MIN, 132 days (from Macao) | 113.6 | 97.3 | 129 |
| 1869 | 23 | SIR LANCELOT, 89 days (from Foochow) THERMOPYLAE, 91 days (from Foochow) | MIN, 131 days (from Foochow) SILVER EAGLE, 131 days (from Whampoa) | 111.8 | 92.7 | 129.7 |
| 1870 | 27 | LEANDER, 98 days (from Shanghai) LAHLOO, 98 days (from Foochow) | EME, 135 days (from Foochow) ETHIOPIAN, 134 days (from Shanghai) | 112 | 98.3 | 131.7 |
| 1871 | 9 | TITANIA, 93 days (from Foochow) | MAITLAND, 124 days (from Foochow) | 110.6 | 102 | 118.7 |
| 1872 | 15 | NORMAN COURT, 95 days (from Macao) EME, 102 days (from Foochow) | BLACK ADDER, 123 days (from Foochow) DOUNE CASTLE, 123 days (from Shanghai) | 113.7 | 101.3 | 122.7 |
| 1873 | 11 | HALLOWE'EN, 89 days (from Shanghai) LOTHAIR, 98 days (from Whampoa) | TITANIA, 138 days (from Shanghai) | 116.8 | 96 | 134 |

Lubbock says:

The Suez Canal terminated the period of daring tea races from China to Britain; 1870 was really the last good year for the clippers. There was a depression in 1871, with a slump in tea rates which, added to the competition of the Suez Canal, made the year a bad one for sailing craft. In 1872 there was a desperate stimulation born of enthusiasm rather than economic fact, and that year was in reality the last year of real racing among the tea clippers. In 1873, such ships as *Leander*, *Wylo*, *Eme*, *Black Prince*, *White Adder*, *Chinaman* and *Falcon* sailed from China, not to Britain but to New York. From 1874 on, the records of tea clipper passages are of less interest except as they furnish an index of the sailing qualities of certain well-known ships.

1874: In S.W. monsoon, *Thermopylae*, 101 days; *Norman Court*, 114 days; *Cutty Sark*, 118 days.

In N.E. monsoon, *Hallowe'en*, 91 days; *Undine*, 113 days.

1875: In S.W. monsoon, *Thermopylae*, 115 days; *Cutty Sark*, 125 days; *Sir Lancelot*, 125 days.

In N.E. monsoon, *Hallowe'en*, 92 days; *Titania*, 100 days; *Jerusalem*, 101 days.

1876: In S.W. monsoon, *Cutty Sark*, 109 days; *Thermopylae*, 119 days.

In N.E. monsoon, *Hallowe'en*, 102 days; *Norman Court*, 106 days.

1877: In S.W. monsoon, *Thermopylae*, 104 days; *Windhover*, 121 days; *Cutty Sark*, 127 days.

In N.E. monsoon, *Jerusalem*, 106 days; *Wylo*, 111 days.

1878: In N.E. monsoon, *Titania*, 102 days; *Thermopylae*, 110 days; *Taitsing*, 117 days.

In 1878, tea freights had dropped to such an extent, and the Eastern trade was so bad, that even *Thermopylae* had great difficulty in filling her hold at 30 shillings per 50 cubic feet. Such noted ships as *Thermopylae*, *Cutty Sark*, *Hallowe'en*, etc., were all reduced to making trips backward and forward between China and Australia, so difficult was it to get cargo for Britain.

The most famous of the China-to-England tea races was that of 1866, in which sixteen clippers competed—all British built—in carrying the first season's tea. The race to be first home was, however, confined to the first four starters (*Ariel*, *Taeping*, *Serica*, and *Fiery Cross*), which left Foochow on May 29 and dropped their pilots on May 30, and the *Taitsing*, which sailed a day later and left the river at midnight on May 31. (The next four departures were *Black Prince*, June 3; *Chinaman* and *Flying Spur*, June 5; and *Ada*, June 6.) Of the real contestants to the race, the *Fiery Cross*, with her relatively light load and draft and a good tug, gained an advantage in the river and crossed the bar some fourteen hours in the lead of *Ariel* (which, after an early departure from Pagoda anchorage, had considerable trouble with "her wretched tugboat *Island Queen*" going down river). The *Ariel* was followed a few minutes later by the *Taeping* and *Serica*. On June 8, the *Taeping* and *Fiery Cross* passed each other on opposite tacks, and the next day *Taeping* and *Ariel* exchanged signals. The *Fiery Cross* passed Anjer first, being followed by *Ariel*, *Taeping*, *Serica*, and *Taitsing* in the order named. Mauritius was reached by the *Fiery Cross* in 10 days from Anjer, by the *Ariel* and *Taeping* in 11, the *Serica* in 12, and the *Taitsing* in 13 days. The meridian of the Cape of Good Hope was passed by the *Fiery Cross*, *Ariel*, and *Taeping* within eighteen hours of each other, and at daybreak on September 5 the *Ariel* and *Taeping* were sighted running for the Lizard only a short distance apart; both were under full sail and making some 14 knots per hour. The *Taeping* arrived at Deal eight minutes after the *Ariel*, but as she started twenty minutes later, she won the race by twelve minutes' sailing time after covering about 16,000 nautical miles in 99 days. The *Serica* came up on the French coast and docked on the same tide; the *Fiery Cross* took 100 days, and the *Taitsing* arrived a day later. The winning clipper averaged, for the entire passage, about 162 miles per day and showed an average speed of about $6\frac{3}{4}$ knots per hour. The best day's runs of the two winning vessels were 319 and 330 miles, respectively—an average for the best day of about $13\frac{3}{4}$ knots per hour. The total distance sailed was approximately the same as the around-the-Horn New York-to-San Francisco voyage.

Record of the Five Leading Clippers in the 1866 China-to-England Tea Race

| | TAEPING (767 tons; composite; built 1863; Steele, Green- ock, Scot.) | ARIEL (853 tons; composite; built 1865; Steele, Green- ock, Scot.) | SERICA (708 tons; wood; built 1863; Steele, Greenock, Scot.) | FIERY CROSS (888 tons; wood; built 1860; Chal- oner, Liver- pool, Eng.) | TAITSING (815 tons; composite; built 1865; Connell, Glasgow, Scot.) |
|---|---|---|---|--|---|
| | <u>Days</u> | <u>Days</u> | <u>Days</u> | <u>Days</u> | <u>Days</u> |
| (1) Foochow to Anjer..... | 21 | 21 | 23 | 21 | 26 |
| (2) Anjer to Cape of Good Hope. | 26 | 25 | 27 | 25 | 28 |
| (3) Cape of Good Hope to equator | 19 | 20 | 18 | 20 | 19 |
| (4) Equator to Deal | 33 | 33 | 31 | 34 | 28 |
| Total | 99 | 99 | 99 | 100 | 101 |
| Best day's run—miles..... | 319 | 330 | 291 | 328 | 318 |
| Tea cargo carried—pounds..... | 1,108,709 | 1,230,900 | 954,236 | 854,236 | 1,093,130 |
| Pounds of tea carried per regis- tered ton | 1,446 | 1,443 | 1,348 | 963 | 1,341 |

The fastest times made by these five clippers over the four sections of the voyage were:

| | | |
|---|---------------------------|---------|
| (1) <i>Taeping</i> , <i>Ariel</i> , and <i>Fiery Cross</i> , each 21 days | (4) <i>Taitsing</i> | 28 days |
| (2) <i>Ariel</i> and <i>Fiery Cross</i> , each | 25 " | |
| (3) <i>Serica</i> | 18 " | |
| | Total..... | 92 days |

This was seven days less than the best time made by any one clipper ship in the race, but six days more than the record run of 86 days made by the American clipper *Golden Gate* (1,349 tons), which took pilot February 23, 1855, after a passage of 86 sailing days from Shanghai. Although the composite-built ships carried somewhat more tea per registered ton than the wooden ships, it is apparent that the *Taitsing* carried a relatively light load and that the *Fiery Cross* was laden more with an idea of speed and to win the race rather than to carry a good cargo of paying freight; she carried about 29 per cent less tea per ton register than the wooden clipper *Serica*, 28 per cent less than the lightly laden composite ship *Taitsing*, and about 33 per cent less than the winning composite clippers *Taeping* and *Ariel*.

It has been said that in the tea clipper service not only was speed pre-eminent but also, at times, excellent day's runs—if not world-record runs—were made "in smooth water, with strong winds blowing, with all canvas set about two points or so abaft the beam." Whereas in the famous tea race of 99 days from Foochow to London the best day's run of any of the participating clippers was 330 miles covered by the *Ariel*, which reached the Downs a few minutes ahead of the *Taeping* and four hours before the *Serica*, the Yankee clipper *Witch of the Wave* (1,498 tons), in a 90-day tea run from Whampoa, China, to Dungeness, England, in January-April 1852, covered 338 nautical miles in one day. The London SHIPPING GAZETTE said of her: "She worked up the English Channel to windward of 400 sail of vessels and not a ship could keep up with her," and the London TIMES said: "From China she made the passage to the Downs in 90 days, and had she not encountered a strong easterly wind in the Channel, she would have done it several days sooner. As it was, she was four days beating up the Channel from the chops to river while some of our large English vessels were two weeks." In 1854 the American clipper *Comet*, on a passage between Liverpool and Hong Kong, had a day's run of 350 miles; in 1852 the *Swordfish*, on a run from Whampoa to New York, made 340 miles in one day; and in 1861 the *Game Cock*, in the Indian Ocean, covered 342 miles in one day and actually averaged 306 miles per day for seven consecutive days. The little American bark *Maury*, which outsailed Britain's finest tea clippers, made the record for the best day's run in the China trade for a small ship when she covered 370 nautical miles in one day's sailing in the Indian Ocean. This performance was beaten by only two big ships: The American Cape Horn "Greyhound" *Flying Cloud* (1,782 tons), on

December 21, 1852, in the Indian Ocean on a passage from Whampoa to New York, covered 382 miles in one day, and the *Golden Gate* (1,349 tons), in late November 1854, in the China Sea on a run south from Shanghai, made 380 miles by observation in one day and 360 and 350 miles on two other days.

The largest and fastest of the Britain-China tea clippers was the *Thermopylae*, of composite construction, built by Hood, of Aberdeen, Scotland, in 1868, for Geo. Thompson & Company. She was of 991 tons gross and 948 tons net register; 212 ft. long, 36 ft. beam, and 20.8 ft. deep. It is said that she "loaded 1,000 tons of tea on a draft of 21 ft. 6 in., carrying also about 250 tons of ballast." The great all-time rival of the *Thermopylae* in the China and, later, in the Australian trade was the British composite-built clipper *Cutty Sark*, constructed in 1869 by Scott & Linton and Denny Bros., Dumbarton, Scotland, for J. Willis, of London, the owner of the famous *Tweed*. The *Cutty Sark* was of almost the identical dimensions of the *Thermopylae*, length, beam, and depth, but she was measured and registered as 963 tons gross and 921 tons net. It cannot be said that the models of these British tea clippers, in the "speed-crazy" days in which they were built, were given much consideration in relation to their spars, rigging, and sail plans. The models were shaped for speed, and that under good sailing conditions of wind and water; i.e., in relatively smooth seas as expected in a trade-wind and semi-tropical run.

During the fifties and sixties, in the trades where business was booming and money was plentiful, speed was king; it was anything and everything for speed. Sail plans were made lofty and yards wide, but even greater width was gained by stunsails spread at fore and main from the skysail down and greater height by sliding gunter masts extending well above the trucks, with raffees or "lateen moonrakers," skyscrapers, etc. In the light winds of the tropics, these extreme British tea clippers, which were relatively small with very sharp models, an overwhelming sail spread, and an abundance of "gear and gadgets," traveled faster than the larger and more powerful vessels and were famous for "ghosting along" in the doldrums. The spar and sail plan of such ships was designed to obtain the maximum spread of canvas and that as lofty, as well as wide, as the builders and owners dared to go. The call in the Britain-China tea trade was for high spars and "sails pulling in the heavens," and no vessel of the British tea clipper type, built primarily for speed, could be expected—because of prevailing British ideas of hull proportions and relative beam—to have the natural stability of model to carry such a weighty power plant aloft, with its high center of gravity, without ballast and compensating weights below. All such ships were tender, cranky, and bad floppers, or "listers," when light. The *Cutty Sark's* "turning over" onto the loading dock and putting her yards through the freight sheds on the wharf illustrate what such high and heavily sparred clippers—with a top hamper out of balance and a hull conspicuously lacking in stability and carrying power—would do without ballast, and the ballast needed, we are told, to have these badly designed British tea clippers stand up when light was generally about 25 per cent of their registered tonnage, or 12 to 15 per cent of their loaded displacement. Such ships, it appears, "loaded full with ordinary bulk cargo," had to carry also, down low, some heavy cargo or even non-paying ballast, or they could not be sailed with safety; yet it was with tender and dangerous models of this kind that the greatest and loftiest spar and sail plans of all time, when considered in relation to the power and natural stability of the hull model, were used "to tempt fate and harass the command."

The owners and command of the *Cutty Sark* boasted that their clipper could spread an area of sail "probably equal to twice that of an average ship of twice her tonnage"; that "when properly laden, she is too powerful to lie down under a squall." To be "properly laden" evidently meant carrying a lot of heavy ballast and non-paying freight when loaded with any homogeneous paying cargo, for it was admitted that she was "so fine in model that she required 400 tons of ballast to keep her upright with an empty hold." This characteristic was not novel as far as the *Cutty Sark* was concerned.

All British tea clippers required a great deal of ballast with the claimed exception of the *Undine* (built by Pile, of Sunderland, England, in 1867, for J. Kelso), which, it was claimed, would "stand upright with holds swept clean." We are told, "Besides some hundred tons of permanent iron kentledge stowed under the skin in the limbers, they took in some 200 tons or more of washed shingle before loading tea." Indeed, all clippers with midship sections and water lines like the *Cutty Sark*, *Thermopylae*, *Caliph*, etc., in conjunction with a high center of gravity due to spars, rigging and sails, could never be expected to do anything else but "flop" and "lay over" on one side or the other when light, unless the center of gravity was lowered by artificial means and the area of flotation increased by deeper immersion. This problem was one that the more box-shaped, flat-bottomed, modern sailing vessel did not have to contend with if given a reasonable beam, and tenderness when light in relatively modern craft, from the 1890's, has been generally deemed inexcusable. It is strange that the British tolerated with such complacency this pronounced weakness of design in their earlier sailing vessels, but throughout the entire era of sail the tendency of British designers was to make their ships too narrow. The *Undine* of 796 tons was somewhat shorter, beamier, and shallower than the average British tea clipper of her tonnage; therefore, she had more natural stability. A comparison of her dimensions with the *Lahloo*, a clipper of similar tonnage built for Rodger by Steele, of Greenock, Scotland, the same year as the *Undine* (1867), is of interest:

| Name | Tonnage | Dimensions in Feet and Inches | | | Ratios | | |
|--------|---------|-------------------------------|------|-------|----------------|-----------------|---------------|
| | | Length | Beam | Depth | Length to Beam | Length to Depth | Beam to Depth |
| UNDINE | 796 | 182-6 | 35-1 | 19-5 | 5.20 | 9.41 | 1.81 |
| LAHLOO | 799 | 191-6 | 32-9 | 19-9 | 5.85 | 9.70 | 1.65 |

These dimensions and proportions would indicate a natural stability of the model of the *Undine* about 17 per cent in excess of that of the *Lahloo*.

In the Australian service, in which Britain's two outstanding composite-built tea clippers operated at a later date, the *Cutty Sark* proved faster than the *Thermopylae*, but it is evident that in the China tea trade the *Thermopylae* was a faster ship than the *Cutty Sark*, as the following record will show. In the tea race of 1869, *Thermopylae* made an excellent run of 91 days from pilot leaving Foochow to pilot for London, but *Cutty Sark* did not appear in the China tea races until 1870.

| Year | THERMOPYLAE | | Passage as Reported in Days | CUTTY SARK | | | Passage as Reported in Days |
|-------------------------------|-------------|-----------|-----------------------------|-------------------------------|-----------|-----|-----------------------------|
| | | | | | | | |
| 1870 | Foochow | to London | 106 | Shanghai | to London | 110 | |
| 1871 | Shanghai | to London | 106 | " | " | 107 | |
| 1872 | " | " | 115 | " | " | 122 | |
| 1873 | " | " | 101 | " | " | 117 | |
| Average of four passages..... | | | 107 | Average of four passages..... | | | 114 |

In June-October 1872, the *Cutty Sark* and *Thermopylae* raced each other from Shanghai to England. This was a real and planned race, the vessels leaving Shanghai together. The *Cutty Sark* was unfortunate and was disabled at sea. She hove to for about six days to make repairs and then completed the voyage with a jury rudder and, it is claimed, "at a speed voluntarily reduced and limited to 8 knots in the interest of safety." The *Thermopylae* arrived at the Downs on October 12 and the *Cutty Sark* on October 18. The *Thermopylae* won, therefore, by a wide margin, but before the *Cutty Sark* was disabled the vessels had been fighting it out "nip and tuck," with one and then the other in the lead and the *Cutty Sark*

claiming the advantage. In any event, the race was considered by the *Cutty Sark's* officers, owners, and supporters as a moral victory for their fast clipper—a claim indignantly denied by the *Thermopylae* and her admirers. In 1874-1878, the *Thermopylae* made five passages, with an average time reported for the runs of 109.8 days. The *Cutty Sark* made four passages in the same period, with an average time as reported of 119 $\frac{3}{4}$ days. Such figures prove conclusively that in the China service the *Thermopylae*—popularly designated in the seventies as “the Queen of the British Merchant Sailing Fleet”—was, in fact, much faster than the *Cutty Sark*, her greatest rival.

The following recapitulation of the comparative sailing performances on the run to England of the two clippers in the China tea trade is of interest:

| | | | |
|-------------|------------|-----------|---|
| THERMOPYLAE | 10 voyages | 1869-1878 | Average passage as reported, 106.8 days |
| CUTTY SARK | 8 voyages | 1870-1878 | Average passage as reported, 118.9 days |

For the first half of the period (five voyages for the *Thermopylae* and four for the *Cutty Sark*), the average reported length of the passage to England with tea was *Thermopylae*, 103.8 days; *Cutty Sark*, 114 days; and for the last half of the passages of each vessel, *Thermopylae*, 109.8 days; *Cutty Sark*, 119.8 days.

Ships expressly designed and built “to beat” other specific vessels not only seldom do so but also are often definite failures. The *Cutty Sark* was built in 1869 by Capt. John Willis as an improved *Tweed* (an unquestionably fast ship, but of 1,745 tons, then deemed too big for the trade), and this with the firm hope and fixed intent of beating the *Thermopylae*, built by Hood, of Aberdeen, for George Thompson (Aberdeen White Star Line); however, this ship was “an exception that at least to some degree proved the rule.” The *Cutty Sark* did not beat the *Thermopylae* during many years spent in the China trade, but she later proved to be the faster ship in the Australian wool service and won certain “moral victories.” It is an unsettled question as to which of the two composite clipper ships was the faster vessel.

When the *Caliph* (the 263rd ship of Hall, of Aberdeen) was built in 1869, it was hoped, expected, and predicted by both builder and owners that she would beat the *Cutty Sark*. They were, moreover, particularly anxious to construct a better and faster ship than the *Cutty Sark*, for Hercules Linton, the designer and one of the firm of builders of that fast ship, at Dumbarton, Scotland, was “one of their boys,” having served his apprenticeship with Hall, and the master had pride in proving his superiority as a designer and builder over any and all ambitious pupils.

A comparison of the dimensions of the *Cutty Sark* and *Caliph*, both composite ships built in 1869 for the China tea trade, is of interest:

| | Registered Tonnage | Length | Beam | Depth |
|------------------|-----------------------|-------------|-------------|-------------|
| | | <u>Feet</u> | <u>Feet</u> | <u>Feet</u> |
| CUTTY SARK | 921 | 212.5 | 36 | 21 |
| CALIPH | 914 | 213.3 | 36.1 | 20.4 |

The *Caliph* was designed to be fast, especially in light winds. As an aid to her sails in the calms of the China Seas, she had a unique item of equipment—an 8-horsepower engine in the midship-house fitted with a shaft for driving two small screws, which could be lowered overboard on the vessel's side. It was said that this auxiliary power would prove capable of driving the ship in light winds “an additional two or three knots per hour through the water,” but like all auxiliary power plants on sailing vessels the installation proved to be a disappointment and of no practical value in the realm of speed. The *Caliph*, notwithstanding the experience, knowledge, and reputation of her builders, did not prove even a worthy competitor.

itor of the *Cutty Sark*, *Thermopylae*, or a host of other less featured and advertised vessels. Conrad, in his *THE MIRROR OF THE SEA*, puts into the mouth of one of his characters, an elderly seaman, the words, "Ships are all right; it's the men in 'em." In this respect, *Cutty Sark*, *Thermopylae*, *Mermerus*, *Salamis*, *Samuel Plimsoll*, and many others were good ships and "all right." Some of the ships, with their commands, got into trouble, but they got "out of scrapes" and were always on the "up and up"; not so the *Caliph* and many other seemingly worthy vessels. One writer has referred to the outstanding success of a peculiar ship as "deliciously blending the direst luck with the most excellent fortune." The *Cutty Sark* and *Thermopylae* had the luck and fortune, and not the least contributing factors were capable, courageous, resourceful, and "lucky" skippers; the *Caliph* was not so favored, and though much heralded and generally proclaimed as *Cutty Sark's* and *Thermopylae's* greatest and most favored antagonist, she never realized the claims and hopes—not to mention the boasts—of her builders and owners. We read:

The *Caliph* was undoubtedly a very fast ship indeed, but she was unfortunate to be commanded by a man of very little experience in the China trade, who failed to get a charter for the first teas and was obliged to wait until the winter for a tea cargo to New York. On her second voyage, the *Caliph* mysteriously disappeared in the China seas; there was no typhoon to account for her disappearance, but from that day to this no trace of her has been found.

History says of the *Caliph*: "Though her life was short, she was the most up-to-date clipper of her day. She was an extreme ship with more deadrise than her contemporaries, and she had a very lofty sail plan." This probably accounts for her loss. She was badly laden, lacked stability, was overcanvased, and capsized. It takes a good and experienced captain, with some imagination as well as sound sense, to handle a tender ship; the best ship and the most comfortable ship—the product of genius—is a sensitive ship that by proper lading can be made stiff, but not too stiff, easy and never jerky in her movements, and thoroughly safe if well handled. No sailing ship, however, and no steam-propelled vessel not fitted with water ballast tanks, in a double bottom, should have been built at any time that would not stand up straight with "holds swept clean."

Auxiliary steam sailing vessels, whereas fairly successful in the Australian trade with routes carefully planned in regard to prevailing winds, failed in the China trade; for such vessels did not have sufficient power to drive them against the southwest monsoon when new teas were shipped from China. In 1866, however, Alfred Holt, of Liverpool, brought out three iron screw steamships, the *Ajax*, *Achilles*, and *Agamemnon*, of 2,270 tons gross and 1,550 tons net register, with compound engines and relatively low fuel consumption. These steamships ran without coaling from London to Mauritius, a distance of 8,500 miles, and made the passage from Foochow to London in 58 days at an average speed of 235 miles per day, or a scant 10 knots per hour. These steamers may not have been money-makers, but they were the first steamships to perform long voyages successfully, and they inaugurated a new era in steam navigation—thanks to the adoption of the compound engine and higher steam pressure. This steamship service to China was inaugurated the year of the famous tea race to London (1866) in which the *Taeping*, *Ariel*, and *Serica* made the run in 99 days, covering about 16,000 miles and averaging 162 miles per day and a scant 7 knots per hour. However, the winners of the sailing clipper tea race from China to England in 1866 covered about thirty per cent less mileage per day than the steamers; but the distance traveled by sail was some eighteen per cent more than by steam, and the length of passage of the winning clippers was forty-one days, or seventy per cent, more than the 58-day passage of the steamers between the same ports.

After many keen and strenuous years of clipper ship racing with tea cargoes from Chinese ports to London to "get the market," the racing died out after 1873. From that time the service became prosaic; steamers gained the ascendancy, and tea clipper racing stopped entirely in 1878 because of low freights and the unprofitable handling of the cargo by sail. In the eighties, this trade was completely in the hands of steamships. The fast British com-

posite-built *Thermopylae*—unsurpassed in this China-Britain trade in the seventies—made her last tea passage in 1881, in which year the clipper *Hallowe'en* also made a run. The height of the China tea clipper racing to England was during the years 1862 to 1872 (after American ships had withdrawn from the trade). It was with the advent of the sixties that the British tea clippers reached their perfection, as far as their particular type is concerned, and their star shone brightly for a few years even after the opening of the Suez Canal; then came steam and, in the eighties, the eclipse of sail. During the decade of the fifties, when American sailing ships were engaged in the British China tea trade, British ships, built for the trade and primarily for speed, were no match for the American clippers, which were, nevertheless, not built for the run to and from China as were the British ships. British merchants acknowledged the superiority of American ships as long as they were available for the service and paid premiums for carrying tea in American bottoms; thus for most of the 1850's the United States enjoyed the cream of the British China tea trade.

XIX.

THE AUSTRALIAN TRADE

A Record of 103 Passages of United States-built Clippers in the Australian Trade—Both Outward and Homeward Bound—Sailing from Both British and American Ports during the Years 1851-1862

THE FOLLOWING IS A list of 103 passages of United States-built clippers made in the Australian trade during the period 1851-1862. The list, which covers passages both outbound and homebound from American and British ports, is far from complete, but includes most of the important passages made by American-built clippers in the Australian trade during the years 1854-1857 inclusive. All the United States Australian passages here recorded were outbound, the return of ships operating under the Stars and Stripes and not under British ownership or charter being by way of China, the East Indies, or India. Of these 103 passages made by American-built ships, 87 were outbound (50 from British and 37 from United States ports), and 16 were runs from Australia to England. Seventy-six of the passages were made in the four-year period 1854-1857 inclusive (24 in each of 1854 and 1855, 15 in 1856, and 13 in 1857), and of these, 60 were outbound passages (34 from British and 26 from U.S. ports) and 16 homeward runs to England. This list of 103 American-built clipper ship passages in the Australian trade has been selected not because they were outstandingly fast runs; they are herein recorded without regard to length of passage merely because data in regard to the length of run were available.

| Name of Clipper | Launched | Builder | Tonnage | Departure | Destination | Passage in Days | Remarks |
|-----------------------|---------------|--|---------|-------------------------------|-------------------------------|-----------------|--|
| | | | | Port and Date | Port and Date | | |
| 1851 | | | | | | | |
| NIGHTINGALE | June 16, 1851 | Samuel Hanscomb, Jr., Portsmouth, N. H. | 1,060 | Boston Oct. 18, 1851 | Sydney Jan. 16, 1852 | 90 | Thirty-nine days to Cape St. Roque; 51 days from Cape St. Roque. |
| 1853 | | | | | | | |
| SOVEREIGN OF THE SEAS | July 1852 | Donald McKay, East Boston | 2,421 | Liverpool Sept. 7, 1853 | Melbourne Nov. 24, 1853 | 78 | Thirty-one days to Atlantic equator; 47 days to destination. Made 1,275 miles in 4 days. |
| FLYAWAY | May 1853 | William H. Webb, New York | 1,274 | New York Aug. 20, 1853 | Melbourne Nov. 11, 1853 | 83 | Eighty days, land to land. Made 5,000 miles in 17 days. Best day's run, 346 miles. |

(Continued on next page)

MERCHANT SAIL

| Name of Clipper | Launched | Builder | Ton- nage | Departure | Destination | Passage in Days | Remarks |
|--------------------------|-------------------|---|--------------|---|------------------------------------|--------------------|---|
| | | | | Port and Date | Port and Date | | |
| <i>1853—Continued</i> | | | | | | | |
| MALAY | Aug. 26, 1852 | John Taylor, Chelsea, Mass. | 868 | New York Oct. 14, 1853 | Hobart Town Jan. 12, 1854 | 90 | Thirty-five days to At- lantic equator; 65 days to meridian of Cape; 25 days from Cape to destination. |
| RESOLUTE | Jan. 15, 1853 | Westervelt & Sons, New York | 786 | New York Feb. 15, 1853 | Melbourne May 24, 1853 | 98 | Maiden voyage. Re- turned via China to London. |
| QUEEN OF THE SEAS | Sept. 18, 1852 | Paul Curtis, Medford, Mass. | 1,356 | Boston Aug. 22, 1853 | Sydney Dec. 6, 1853 | 105 | On Voyage No. 2. Went from Australia to In- dia. |
| <i>1854</i> | | | | | | | |
| LIGHTNING | Jan. 3, 1854 | Donald McKay, East Boston | 2,083 | Melbourne Aug. 20, 1854 | Liverpool Oct. 23, 1854 | 64 | A passage of 64 days 3 hrs.; 63 days 16 hrs. to pilot; 19 days to Cape Horn. |
| SOVEREIGN OF THE SEAS | July 1852 | Donald McKay, East Boston | 2,421 | Melbourne Jan. 23, 1854 | Liverpool Apr. 1, 1854 | 68 | Mutiny on board Mar. 17, 1854. Sold to Germans on arrival at Liverpool. |
| RED JACKET | Nov. 2, 1853 | George Thomas, Rockland, Maine | 2,305 | Melbourne Aug. 3, 1854 | Liverpool Oct. 15, 1854 | 73 | To equator, 42 days; 10,423 miles. Total distance, 14,863 miles. Best day's run, 376 miles. |
| JAMES BAINES | July 25, 1854 | Donald McKay, East Boston | 2,515 | Liverpool Dec. 9, 1854 | Melbourne Feb. 12, 1855 | 65 | Passage reported 65 days 5½ hrs. Rock Light to Hobson's Bay, 63 days 18 hrs. Best day's run, 423 miles. |
| RED JACKET | Nov. 2, 1853 | George Thomas, Rockland, Maine | 2,305 | Liverpool May 4, 1854 | Melbourne July 12, 1854 | 69 | Chartered to British White Star Line. Passage reported 69 days 11 hrs. 15 min.; under sail 67 days 13 hrs. |
| OCEAN CHIEF | 1854 | J. & C. Morton, Thomaston, Maine | 1,228 | Liverpool (outbound passage of maiden voyage) | Hobart Town | 72 | Owned by James Baines & Co.'s Black Ball Line of Australian packets. |
| SWALLOW | Apr. 4, 1854 | Robert E. Jackson, East Boston | 1,435 | London (Deal) Oct. 12, 1854 | Melbourne Dec. 25, 1854 | 74 | Passage reported as 73 days 18 hrs. from Gravesend (Lon- don). |
| CHAMPION OF THE SEAS | Apr. 19, 1854 | Donald McKay, East Boston | 2,447 | Liverpool Oct. 11, 1854 | Melbourne Dec. 25, 1854 | 75 | Passage of 75 days 10 hrs. Beaten 16 hrs. by SWALLOW. Al- so reported as a run out of 72 days. |
| BLACK WARRIOR | 1853 (late) | Austin & Co., Damariscotta, Maine | 1,828 | London 1854 | Melbourne 1854 | 76 | Carried 2,600 tons gen- eral cargo. Best day's run, 365 miles. |
| LIGHTNING | Jan. 3, 1854 | Donald McKay, East Boston | 2,083 | Liverpool May 14, 1854 | Melbourne July 30, 1854 | 77 | Light weather passage. The topgallant sails never furled. Maiden passage to Australia. Best day, 348 miles. Reported as 76-day passage. |

(Continued on next page)

| Name of Clipper | Launched | Builder | Tonnage | Departure | Destination | Passage in Days | Remarks |
|-----------------------|---------------|---|---------|-----------------------------------|-------------------------|-----------------|--|
| | | | | Port and Date | Port and Date | | |
| <i>1854—Continued</i> | | | | | | | |
| SOVEREIGN OF THE SEAS | July 1852 | Donald McKay, East Boston | 2,421 | Liverpool 1854 | Sydney 1854 | 84 | Owned by Germans. Via Cape Horn. On 40th day, carried away topmasts. Claimed 410 miles in one day. |
| BELLE OF THE WEST | Mar. 25, 1853 | Shiverick Bros., East Dennis, Mass. | 936 | London Oct. 1854 | Melbourne Jan. 1855 | 85 | Beaten by both SWALLOW and CHAMPION OF THE SEAS. |
| KATHAY | Aug. 14, 1853 | J. A. Westervelt, New York | 1,438 | London Feb. 2, 1854 | Sydney Apr. 29, 1854 | 86 | Part of maiden voyage (New York, London, Sydney, Canton, and home). |
| NABOB | Jan. 21, 1854 | John Taylor, Chelsea, Mass. | 1,246 | Liverpool 1854 | Melbourne 1854 | 97 | Part of maiden voyage (Boston, New Orleans, Liverpool, Melbourne, Shanghai, London, and home). |
| RACER | Feb. 8, 1851 | Currier & Townsend, Newburyport, Mass. | 1,669 | London (Portsmouth) Apr. 14, 1854 | Sydney July 29, 1854 | 106 | Left London Apr. 12. Was a long passage in very unfavorable weather. |
| NIGHTINGALE | June 16, 1851 | Samuel Hanscomb, Jr., Portsmouth, N. H. | 1,060 | New York May 20, 1854 | Melbourne Aug. 2, 1854 | 75 | Twenty-nine days to Atlantic equator; 46 days thence to anchor in Hobson's Bay. Best day's run, 365 miles. |
| FLYING SCUD | Nov. 2, 1853 | Metcalf & Norris, Damariscotta, Maine | 1,713 | New York Sept. 29, 1854 | Melbourne Dec. 14, 1854 | 76 | To arrival Port Phillip Heads. Made 449 miles in one day; also 4,620 miles in 16 days. |
| RINGLEADER | 1853 | Hayden & Cudworth, Medford, Mass. | 1,154 | Boston Oct. 18, 1854 | Melbourne Jan. 5, 1855 | 78 | At Pernambuco Nov. 19. Outward passage of No. 2 voyage. Returned by Calcutta and London. |
| MALAY | Aug. 26, 1852 | John Taylor, Chelsea, Mass. | 868 | New York Dec. 2, 1854 | Sydney Feb. 21, 1855 | 81 | Thirty-two days to Atlantic equator; 49 days thence to Sydney. Encountered much ice. |
| FLYING DUTCHMAN | Sept. 9, 1852 | William H. Webb, New York | 1,257 | New York Sept. 15, 1854 | Melbourne Dec. 5, 1854 | 81 | Forty and a half days to Atlantic equator; 42 days to Cape St. Roque and 39 days thence to Melbourne. |
| SNOW SQUALL | 1851 | Alfred Butler, Cape Elizabeth, Maine | 742 | New York 1854 | Sydney 1855 | 85 | A small, fast clipper owned by Charles R. Green, of New York. |
| WHITE SWALLOW | Mar. 26, 1853 | Hayden & Cudworth, Medford, Mass. | 1,192 | Boston Nov. 21, 1854 | Melbourne Feb. 19, 1855 | 90 | Thirty-five days to Cape St. Roque; 55 days thence to Melbourne. |
| WINGS OF THE MORNING | Oct. 28, 1852 | Edwin Achorn, Waldoboro, Maine | 915 | New York July 15, 1854 | Melbourne Oct. 25, 1854 | 102 | Outward passage of Voyage No. 2. Returned via Callao with guano to Philadelphia. |

(Continued on next page)

MERCHANT SAIL

| Name of Clipper | Launched | Builder | Tonnage | Departure | Destination | Passage in Days | Remarks |
|-----------------------|---------------|----------------------------------|---------|-----------------------------|--------------------------|-----------------|---|
| | | | | Port and Date | Port and Date | | |
| <i>1854—Continued</i> | | | | | | | |
| MANDARIN | June 1850 | Smith & Dimon, New York | 776 | Norfolk, Va. Sept. 13, 1854 | Melbourne Dec. 28, 1854 | 106 | Mainmast badly damaged in North Atlantic and could not carry a press of sail. |
| <i>1855</i> | | | | | | | |
| BLUE JACKET | Aug. 27, 1854 | Robert E. Jackson, East Boston | 1,790 | Liverpool Mar. 6, 1855 | Melbourne May 13, 1855 | 68 | Sold to British and operated first in Fox Line and later in White Star Line. An outstandingly fast passage. |
| LIGHTNING | Jan. 3, 1854 | Donald McKay, East Boston | 2,083 | Liverpool Jan. 6, 1855 | Melbourne Mar. 20, 1855 | 73 | Sixty-seven days from land to land. Was 16 days between the lines of the tropics. |
| RED JACKET | Nov. 2, 1853 | George Thomas, Rockland, Maine | 2,305 | Liverpool Sept. 20, 1855 | Melbourne Dec. 4, 1855 | 75 | Fastest fall sailing to Australia. Beat the time of the JAMES BAINES, LIGHTNING, and INVINCIBLE. |
| INVINCIBLE | Aug. 6, 1851 | William H. Webb, New York | 1,769 | Liverpool Sept. 30, 1855 | Melbourne Dec. 18, 1855 | 79 | |
| JAMES BAINES | July 25, 1854 | Donald McKay, East Boston | 2,515 | Liverpool Aug. 5, 1855 | Melbourne Oct. 23, 1855 | 79 | A good fast passage, considering the sailing chances. |
| OCEAN CHIEF | 1854 | J. & C. Morton, Thomaston, Maine | 1,228 | Liverpool Dec. 7, 1855 | Melbourne Jan. 25, 1856 | 80 | Second voyage in Black Ball Line Australian service. |
| LIGHTNING | Jan. 3, 1854 | Donald McKay, East Boston | 2,083 | Liverpool Sept. 5, 1855 | Melbourne Nov. 25, 1855 | 81 | Had filled-in bow, which washed away and retarded progress for 40 days. |
| DONALD MCKAY | Jan. 1855 | Donald McKay, East Boston | 2,598 | Liverpool June 6, 1855 | Melbourne Aug. 26, 1855 | 81 | Described as a very good passage, considering the weather experienced. |
| CHAMPION OF THE SEAS | Aug. 19, 1854 | Donald McKay, East Boston | 2,447 | Liverpool July 5, 1855 | Melbourne Sept. 26, 1855 | 83 | Light weather passage. Sailed well when she had wind. |
| MYSTERY | Jan. 11, 1853 | Samuel Hall, East Boston | 1,155 | London July 12, 1855 | Sydney | 92 | Sold to British and placed in Indian trade. Went out to Sydney on this voyage and returned via Calcutta. |
| JAMES BAINES | July 25, 1854 | Donald McKay, East Boston | 2,515 | Melbourne Mar. 12, 1855 | Liverpool May 21, 1855 | 69½ | Claimed upon arrival at Liverpool to have made round voyage in "133 days under sail." |
| LIGHTNING | Jan. 3, 1854 | Donald McKay, East Boston | 2,083 | Melbourne Apr. 11, 1855 | Liverpool June 29, 1855 | 79 | Twenty-nine days to Cape Horn; 50 days thence to Liverpool. Light winds. |
| CHAMPION OF THE SEAS | Aug. 19, 1854 | Donald McKay, East Boston | 2,447 | Melbourne Feb. 1855 | Liverpool May 1855 | 84 | Reported as a good run home, considering the unfavorable sailing conditions experienced. |

(Continued on next page)

| Name of Clipper | Launched | Builder | Tonnage | Departure | | Destination | Passage in Days | Remarks |
|-----------------------|-------------------|--|---------|-------------------------------|-------------------------------|-------------|--|---------|
| | | | | Port and Date | Port and Date | | | |
| <i>1855—Continued</i> | | | | | | | | |
| OCEAN CHIEF | 1854 | J. & C. Morton, Thomaston, Maine | 1,228 | Sydney June 3, 1855 | Liverpool Aug. 26, 1855 | 84 | Embayed in ice off Horn for 3 days. Beat the fast MARCO POLO by two days. The fastest run to England from Australia in 1855 after the LIGHTNING, which sailed Apr. 11. | |
| JAMES BAINES | July 25, 1854 | Donald McKay, East Boston | 2,515 | Melbourne Dec. 1855 | Liverpool Mar. 1856 | 85 | A passage with light and variable winds; head winds in North Atlantic. | |
| DONALD MCKAY | Jan. 1855 | Donald McKay, East Boston | 2,598 | Melbourne Oct. 3, 1855 | Liverpool Dec. 28, 1855 | 86 | Reported as a good passage; as fast as any ship sailing from Australia during last six months of 1855. | |
| LIGHTNING | Jan. 3, 1854 | Donald McKay, East Boston | 2,083 | Melbourne Dec. 28, 1855 | Liverpool Mar. 23, 1856 | 86 | Passed the Horn 23 days out; thence 63 days to Liverpool, 60 of which had head or light winds or calms. | |
| CHAMPION OF THE SEAS | Aug. 19, 1854 | Donald McKay, East Boston | 2,447 | Melbourne Oct. 27, 1855 | Liverpool Jan. 25, 1856 | 90 | Reported unfavorable sailing conditions. Fastest passages from Australia during last half of 1855 were from 86 to 90 days. | |
| MANDARIN | June 1850 | Smith & Dimon, New York | 776 | New York Dec. 21, 1855 | Melbourne Feb. 29, 1856 | 70 | The fastest passage ever made between a U. S. East Coast and an Australian port. | |
| WHIRLWIND | Sept. 13, 1852 | James O. Curtis, Medford, Mass. | 960 | New York Mar. 28, 1855 | Melbourne June 11, 1855 | 75 | Twenty-six days to Atlantic equator; 42 days to prime meridian; 48 days from Cape St. Roque to Melbourne. | |
| BEVERLY | Apr. 19, 1852 | Paul Curtis, Medford, Mass. | 676 | Boston Spring 1855 | Melbourne Summer 1855 | 83 | A good passage, considering sailing conditions. Returned via Calcutta, making 83-day run from Sand Heads to Boston. | |
| CELESTIAL | June 10, 1850 | William H. Webb, New York | 860 | New York Oct. 12, 1855 | Melbourne Jan. 5, 1856 | 85 | Returned to New York via China ports. | |
| MALAY | Aug. 26, 1852 | John Taylor, Chelsea, Mass. | 868 | Boston Nov. 28, 1855 | Melbourne Feb. 25, 1856 | 89 | Thirty-two days to Atlantic equator; thence 57 days to Melbourne. | |
| RAVEN | July 1, 1851 | James M. Hood, Somerset, Mass. | 711 | Richmond, Va. 1855 | Sydney 1855 | 103 | Made under very unfavorable sailing conditions. Returned home 80 days from Padang. | |

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MERCHANT SAIL

| Name of Clipper | Launched | Builder | Tonnage | Departure | Destination | Passage in Days | Remarks |
|----------------------|---------------|----------------------------------|---------|-------------------------|-------------------------|-----------------|---|
| | | | | Port and Date | Port and Date | | |
| 1856 | | | | | | | |
| LIGHTNING | Jan. 3, 1854 | Donald McKay, East Boston | 2,083 | Liverpool May 6, 1856 | Melbourne July 14, 1856 | 68 | Passage reported as "68 days 10 hrs. to Melbourne." |
| OCEAN CHIEF | 1854 | J. & C. Morton, Thomaston, Maine | 1,228 | Liverpool Aug. 5, 1856 | Melbourne Oct. 19, 1856 | 75 | Third outward passage, the earlier two being 72 days to Hobart Town and 80 days to Melbourne, respectively. |
| JAMES BAINES | July 25, 1854 | Donald McKay, East Boston | 2,515 | Liverpool Apr. 7, 1856 | Melbourne June 24, 1856 | 78 | Cleared St. Roque 29 days out; thence 48 days 6 hrs. to Cape Otway. Ran 2,276 miles in 7 days. Best day, 404 miles. |
| RED JACKET | Nov. 2, 1853 | George Thomas, Rockland, Maine | 2,305 | Liverpool May 20, 1856 | Melbourne Aug. 13, 1856 | 85 | Said to be "a good passage made under unfavorable sailing conditions." |
| CHAMPION OF THE SEAS | Apr. 19, 1854 | Donald McKay, East Boston | 2,447 | Liverpool Mar. 8, 1856 | Melbourne June 1, 1856 | 85 | Third outward passage, the earlier ones being in 75 and 83 days, respectively. |
| GOVERNOR MORTON | Nov. 22, 1851 | James M. Hood, Somerset, Mass. | 1,429 | London Late 1856 | Melbourne Early 1857 | 91 | In 1857-1858, took 107 days on her passage from London to Sydney. |
| LIGHTNING | Jan. 3, 1854 | Donald McKay, East Boston | 2,083 | Melbourne Aug. 28, 1856 | Liverpool Nov. 20, 1856 | 84 | Passed Cape Horn 22 days out; crossed Atlantic equator on 44th day; 51 days of passage had calms or either light or head winds. |
| RED JACKET | Nov. 2, 1853 | George Thomas, Rockland, Maine | 2,305 | Melbourne Jan. 12, 1856 | Liverpool Apr. 8, 1856 | 86 | Also reported that "this passage made under unfavorable conditions was the same length at sea as that of the LIGHTNING." |
| JAMES BAINES | July 25, 1854 | Donald McKay, East Boston | 2,515 | Melbourne Aug. 7, 1856 | Liverpool Nov. 20, 1856 | 105 | Was 36 days to Horn, with best day 356 miles. Atlantic equator reached on 65th day. Phenomenally adverse sailing conditions. |
| PANAMA | Oct. 11, 1853 | Thomas Collyer, New York | 1,139 | New York 1856 | Melbourne 1856 | 74 | Passage reported as 74 days 8 hrs. from Sandy Hook to Melbourne. Returned via China; 97 days from Shanghai to New York. |
| BOSTON LIGHT | Fall 1854 | E. & H. O. Briggs, South Boston | 1,154 | New York June 8, 1856 | Melbourne Aug. 25, 1856 | 78 | Crossed Atlantic equator 27 days out. Passed Cape Otway 77 days from New York. |

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| Name of Clipper | Launched | Builder | Ton- nage | Departure | Destination | Passage in Days | Remarks |
|-----------------------|-------------------|---|--------------|--|-------------------------------|--------------------|--|
| | | | | Port and Date | Port and Date | | |
| <i>1856—Continued</i> | | | | | | | |
| MALAY | Aug. 26, 1852 | John Taylor, Chelsea, Mass. | 868 | Boston Nov. 30, 1856 | Melbourne Feb. 18, 1857 | 80 | Twenty-three days to Atlantic equator. Off meridian of Cape on 48th day. The last of four passages to Australia, which averaged 85 days. |
| WHIRLWIND | Sept. 13, 1852 | James O. Curtis, Medford, Mass. | 960 | New York Feb. 29, 1856 | Melbourne May 19, 1856 | 80 | Returned via Manila with a passage of 116 days, Manila to New York. |
| KATHAY | Aug. 14, 1853 | J. A. Westervelt, New York | 1,438 | New York 1856 | Sydney 1856 | 84 | Returning, reached New York Jan. 12, 1857, 92 days from Shanghai. |
| QUEEN OF THE SEAS | Sept. 18, 1852 | Paul Curtis, Medford, Mass. | 1,356 | New York June 3, 1856 | Melbourne Sept. 6, 1856 | 95 | Then traded between Melbourne and Hong Kong. |
| <i>1857</i> | | | | | | | |
| LIGHTNING | Jan. 3, 1854 | Donald McKay, East Boston | 2,083 | Liverpool Feb. 5, 1857 | Melbourne Apr. 15, 1857 | 69 | Passage to Port Phillip Heads; reported as 69 days 6 hrs. From equator to Cape Otway, 9,449 miles in 35 days 15 hrs. |
| JAMES BAINES | July 25, 1854 | Donald McKay, East Boston | 2,515 | Liverpool Jan. 1857 | Melbourne Apr. 1857 | 75 | Also reported as being "beaten 5 days by LIGHTNING on run out." |
| KINGFISHER | Aug. 18, 1853 | Hayden & Cudworth, Medford, Mass. | 1,286 | London (Lizard) Apr. 23, 1857 | Melbourne July 10, 1857 | 78 | Passage reported as "78 days from the Lizard." Returned to Liverpool via Callao. |
| LIVE YANKEE | 1853 | Horace Merriam, Rockland, Maine | 1,637 | London Sept. 1857 | Melbourne Dec. 1857 | 82 | Returned to New York via Batavia, Hong Kong, and Havana. |
| NEPTUNE'S FAVORITE | 1854 | Jotham Stetson, Chelsea, Mass. | 1,347 | London 1857 | Melbourne 1857 | 90 | Returned to England via Callao with guano. |
| GOVERNOR MORTON | Nov. 22, 1851 | James M. Hood, Somerset, Mass. | 1,429 | London 1857 | Sydney 1857 | 107 | In 1856-1857, made passage from London to Melbourne in 91 days. |
| JAMES BAINES | July 25, 1854 | Donald McKay, East Boston | 2,515 | Melbourne May 1857 | Liverpool July 1857 | 75 | A very fast passage considering the sailing chances. Also reported as "beating LIGHTNING by six days." |
| LIGHTNING | Jan. 3, 1854 | Donald McKay, East Boston | 2,083 | Melbourne May 11, 1857 | Liverpool July 1, 1857 | 82 | Passed Cape Horn 31 days out; crossed Atlantic equator 56th day; thence 26 days to port. For 75 days, was on starboard tack. |

(Continued on next page)

MERCHANT SAIL

| Name of Clipper | Launched | Builder | Ton- nage | Departure | Destination | Passage in Days | Remarks |
|-----------------------|-------------------|---------------------------------------|--------------|--|-------------------------------|--------------------|--|
| | | | | Port and Date | Port and Date | | |
| <i>1857—Continued</i> | | | | | | | |
| WHIRLWIND | Sept. 13, 1852 | James O. Curtis, Medford, Mass. | 960 | New York Jan. 21, 1857 | Melbourne Apr. 10, 1857 | 79 | Returned to New York via Manila, being 43 days from Mel- bourne to Manila and 113 days thence to New York, where she arrived Nov. 10, 1857. |
| FLYING CHILDERS | Nov. 11, 1852 | Samuel Hall, East Boston | 1,125 | Hampton Roads, Va. Jan. 5, 1857 | Melbourne Apr. 2, 1857 | 87 | Returned to New York via Manila (128 days from Manila to New York). |
| WILD RANGER | Apr. 7, 1853 | James O. Curtis, Medford, Mass. | 1,044 | Boston Late 1857 | Melbourne Spring 1858 | 87 | Went to Valparaiso in 50 days; thence 89 days to London. |
| RED GAUNTLET | Dec. 1, 1853 | James W. Cox, Robbinston, Maine | 1,038 | New York Mar. 28, 1857 | Melbourne June 28, 1857 | 92 | Returned via Batavia, St. Helena, Cowes, and Bremen to Car- diff, where she ar- rived June 9, 1858. |
| WITCHCRAFT | Dec. 21, 1850 | Paul Curtis, Chelsea, Mass. | 1,310 | Boston Feb. 7, 1857 | Melbourne May 15, 1857 | 97 | Returned via Hong Kong and Manila, arriving Boston on Feb. 4, 1858. |

1858

| | | | | | | | |
|------------------|-------------------|------------------------------------|-------|-------------------------------|-------------------------------|----|--|
| YOUNG AMERICA | Apr. 30, 1853 | William H. Webb, New York | 1,961 | Liverpool Apr. 18, 1858 | Melbourne June 20, 1858 | 63 | Reported as an all-time record. Returned to New York, where she arrived in Dec. 1858 via Singapore. |
| CARRIER DOVE | July 1855 | James Abraham, Baltimore | 1,694 | Liverpool 1858 | Melbourne 1858 | 73 | Reported that in 1858 she "went from Liv- erpool to Melbourne in 73 days and around the world in ten months." |
| MESSSENGER | Apr. 22, 1852 | Jacob Bell, New York | 1,351 | Liverpool 1858 | Melbourne 1858 | 80 | Went to India and China and returned to New York in fall of 1860 via Havana. |
| WHIRLWIND | Sept. 13, 1852 | James O. Curtis, Medford, Mass. | 960 | New York Jan. 18, 1858 | Melbourne Mar. 31, 1858 | 72 | The second fastest pas- sage on record, be- ing beaten only by the MANDARIN'S 70-day run of 1855- 1856. |
| COMET | July 10, 1851 | William H. Webb, New York | 1,836 | New York 1858 | Melbourne 1858 | 75 | No details available. Was in California Cape Horn trade in 1857 and again in 1859. |
| FLYAWAY | 1853 | William H. Webb, New York | 1,274 | New York Aug. 21, 1858 | Sydney Nov. 24, 1858 | 95 | Went to Manila and was sold Mar. 1859, going under Spanish colors. Renamed CONCEPCION; hailing port, Cadiz. |

(Continued on next page)

| Name of Clipper | Launched | Builder | Ton- nage | Departure | Destination | Passage in Days | Remarks |
|------------------------|------------------|--|--------------|------------------------------|---|--------------------|--|
| | | | | Port and Date | Port and Date | | |
| <i>1858—Continued</i> | | | | | | | |
| ELECTRIC SPARK | Nov. 17, 1855 | Hayden & Cudworth, Medford, Mass. | 1,216 | London Aug. 23, 1858 | Sydney Dec. 6, 1858 | 105 | Port to port. Experi- enced poor sailing conditions. Went to Hong Kong and made a very fast pas- sage of 84 days from Whampoa to New York. |
| SIERRA NEVADA | May 29, 1854 | Tobey & Littlefield, Portsmouth, N. H. | 1,942 | New York | Melbourne Nov. 20, 1858 | 105 | Returned in 53 days from Melbourne to Hong Kong and 98 days thence (in bal- last) to New York; 79 days from Anjer. |
| <i>1859</i> | | | | | | | |
| WILD RANGER | Apr. 7, 1853 | James O. Curtis, Medford, Mass. | 1,044 | London Early 1859 | Sydney Spring 1859 | 96 | Returned to Boston via Calcutta. |
| <i>1860</i> | | | | | | | |
| NORTH WIND | Apr. 30, 1853 | A. C. Bell, New York | 1,041 | London Feb. 1860 | Melbourne Apr. 1860 | 67 | Passage of 67 days from the Downs to Port Phillip Heads. Reported as "a rec- ord run." |
| UNDAUNTED | 1853 | Hall, Snow & Co., Bath, Maine | 1,371 | London 1860 | Sydney 1860 | 81 | Referred to in press as "an excellent pas- sage." Was a good- carrying "half clip- per." |
| GOLDEN WEST | Nov. 16, 1852 | Paul Curtis, East Boston | 1,441 | London | Melbourne | 100 | In 1858, had a passage from New York to Sydney which occu- pied 164 days, port to port, having put into Simon's Bay for a new rudder. |
| SWEEPSTAKES | June 21, 1853 | D. & A. Wester- velt, New York | 1,735 | New York Sept. 8, 1860 | Melbourne | 94 | Then continued to trade between Australian and Chinese and East Indian ports. |
| <i>1861</i> | | | | | | | |
| EMPRESS OF THE SEAS | Jan. 14, 1853 | Donald McKay, East Boston | 2,197 | Liverpool June 1, 1861 | Melbourne Aug. 6, 1861 | 66½ | A remarkably fast pas- sage. Was burned and destroyed at Port Phillip on Dec. 19, 1861. |
| SIMOON | Dec. 4, 1852 | Jabez Williams, New York | 1,436 | Glasgow Oct. 23, 1861 | Port Chal- mers, New Zealand Jan. 3, 1862 | 72 | A record passage. Car- ried 1,000 sheep. Re- turned via West Coast South Amer- ican ports to Eng- land, making a rec- ord run of 21 days to Valparaiso. |

(Continued on next page)

MERCHANT SAIL

| Name of Clipper | Launched | Builder | Ton- nage | Departure | Destination | | Remarks |
|-----------------------|------------------|--|--------------|--------------------------------------|--|--------------------|---|
| | | | | Port and Date | Port and Date | Passage in Days | |
| <i>1861—Continued</i> | | | | | | | |
| FLYING CLOUD | Apr. 15, 1851 | Donald McKay, East Boston | 1,782 | London (Deal) Feb. 28, 1861 | Melbourne May 24, 1861 | 85 | Proceeded to Hong Kong and carried troops to London, where she was sold and became British ship. |
| YOUNG AMERICA | Apr. 30, 1853 | William H. Webb, New York | 1,961 | Glasgow Nov. 1, 1861 | Oamaru, New Zea- land Feb. 2, 1862 | 93 | Was delayed by weather. Returned to England via Callao and reached New York on Mar. 21, 1863. |
| SNOW SQUALL | 1851 | Alfred Butler, Cape Elizabeth, Maine | 742 | New York | Melbourne | 82 | Eighty-one days from pilot to pilot. Beat the JACK FROST by 25 days and the DIRIGO by 14 days. Returned to New York via Singapore and Penang. |
| COMPETITOR | Feb. 1853 | James O. Curtis, Medford, Mass. | 871 | New York | Sydney | 96 | Went to China and traded on Asiatic coast until she sailed from Manila July 27, 1863, for New York. |
| SANCHO PANZA | Aug. 5, 1855 | Samuel Lapham, Medford, Mass. | 876 | New York July 13, 1861 | Melbourne Oct. 17, 1861 | 96 | Returned via Singapore, Shanghai, Hong Kong, and Foochow to London, where she was sold and became the British ship NIMROD. |
| <i>1862</i> | | | | | | | |
| SNOW SQUALL | 1851 | Alfred Butler, Cape Elizabeth, Maine | 742 | New York Dec. 2, 1862 | Melbourne Feb. 15, 1863 | 75 | The fastest passage made for many years. Returned to New York via Singapore and Penang, arriving home Sept. 15, 1863. |

The record given of passages of American-built clipper ships (or reputed clippers) in the Australian trade (both U.S.A. and British owned) is far from complete, as statistics of voyages known to have been made are not available. In the summer of 1857, the operation of the big American-built clippers in the Australian service of the Black Ball Line was upset by the Indian mutiny and the chartering by the British Government of the *James Baines*, *Lightning*, and *Champion of the Seas* to carry troops to Calcutta. The *James Baines* was burned upon her return from India to Liverpool, Captain Enright in 1857 gave up the command of the *Lightning*, the trade boom to Australia was over, and the operations of shipping became prosaic. Notwithstanding economies put into practice, with spars and sail spread reduced and smaller crews, there was an oversupply of tonnage, keen competition for freight and passengers, and little, if any, profits in running ships. When the great financial depression struck the United States in 1857, followed by conditions that led a few years later to the Civil War, the British-Australian lines bought American clippers cheap, and George

Croshaw, a shipbroker in London, did a big business. Basil Lubbock, the British marine historian, in *THE COLONIAL CLIPPERS*, gives a list of twenty-nine American-built clipper passenger packets that were acquired in the late fifties and the first half of the sixties by the British-Australian sailing packet lines, such as the Black Ball, White Star, etc. Fifteen of the ships listed by Lubbock were built in the United States during the years 1849-1854, and the balance were built in Canada during the period 1853-1865. The British had proved incapable of building large wood sailing ships suitable for their colonial trade. The disastrous failure of the *Schomberg* (2,284 registered and 2,600 builder's tons), their highly publicized only big wood clipper (which proved to be "surprisingly and deplorably slow and unhandy" and failed to complete her maiden passage in 1855 from Liverpool to Melbourne), resulted in British shipowners' buying and chartering only American-built ships for their Australian trade until British iron sailing ships or steamers were available for use in the service.

As in all trade routes, particularly those that cross the tropics, luck played a most important part in the length of passages between North Atlantic and Australian ports. Moreover, as in the China trade, small, light ships were greatly favored in crossing the tropics; but in the Roaring Forties, sailing out from the South Atlantic east to Australia and continuing east on the homeward run to the Atlantic via Cape Horn, the big high-sided American clippers showed amazing speed and made phenomenal day's runs that so outclassed the best that the smaller fine-lined British clippers—wood, composite, or iron—could ever do that there was no competition. American-made sailing records in these waters, such as 449 and 430 miles for a day's run and 19 days from the meridian of the Cape of Good Hope to Melbourne and 19 days from Melbourne to Cape Horn, stand for all time.

Lieutenant Maury, the "Pathfinder of the Seas," maintained that Liverpool was ten days nearer Melbourne than was New York due to the prevalence of more favorable winds (blowing from the northeast) on the passage from Britain to a point off Cape St. Roque, an advantage denied ships sailing from United States ports. It would seem that a more extended experience and the study of many more and later logs suggest that Lieutenant Maury was somewhat extreme in stating that the advantage to a ship sailing from a British port as compared with one clearing a United States port was ten days. A ship with a British port of departure en route to the South Atlantic (and thence to Australia, India, the East Indies, China, or a West Coast American port) had a pronounced advantage over a ship sailing from an East Coast U.S. port, but not to the extent, on an average, of ten days. However, this advantage to a ship in the British rather than the American trade refers only to the outbound passage, for the northeast winds that are favorable on the outward run to the South Atlantic are head winds on the return, or homeward, passage. Moreover, prevailing winds are not maintained steady winds, and just as very occasionally a ship has made a rapid crossing of the Atlantic westbound, with a favorable heavy easterly wind instead of against the prevailing westerlies, so at intervals a ship returning from Australia, China, or India would make a faster run home in the North Atlantic than she would out, with sailing conditions in the North Atlantic being surprisingly favorable north of the equator on the return passage. When Capt. "Bully" Forbes took the *Lightning* out to Australia on her maiden voyage in that trade, he did not get the usual favorable winds in the North Atlantic nor the "prevailing" strong westerlies in the Roaring Forties, and the passage out occupied 77 days. Coming home, however, he made the run in 64 days, being favored by westerly gales in the Roaring Forties, which permitted the *Lightning* to run from Melbourne to Cape Horn in 19 days 1 hour, and in the North Atlantic he did not have to buck the usual northeast trades and sailed to port with favorable winds. Capt. Anthony Enright (formerly in the British tea clipper *Chrysolite*) had command of the *Lightning* on her next four Australian voyages, and up to the time that she was chartered as a troopship by the British Government. The average length of the *Lightning's* outward passages on these four voyages was 73 days (best, 68 days; slowest, 81 days); whereas the average of the homeward runs was ten days

more, or 83 days (best, 79 days; longest, 86 days). The *James Baines*, on her four Australian voyages, averaged 74 days outbound (best, 65 days; longest, 79 days) and 83½ days homebound (best, 69½ days; longest, 105 days), and the *Champion of the Seas*, on her first two voyages between Liverpool and Australia, averaged 79 days out and 87 days on the passages home. The *Donald McKay* boasted of her uniform sailing; she approached no record fast passages, but it was said that her average for six outward runs from Liverpool to Melbourne was 83 days and the average for the return passages, 85 days. (On her maiden voyage, she went out in 81 days and returned in 86 days.)

The *Malay* (868 tons), in 1853-1856, made four passages from East Coast U.S. ports (two from New York and two from Boston) to Australia and averaged 85 days; whereas the *Whirlwind* (960 tons), in 1855-1858, made four consecutive passages from New York to Melbourne and averaged 76½ days (best, 72 days; longest, 80 days), and this is deemed faster sailing, considering the prevailing winds, than that of any ship making a corresponding number of passages and sailing to Australia from a British port. Whereas the clippers sailing in the British-Australian packet lines continued their voyages by proceeding home via Cape Horn, benefiting by favorable winds in the Roaring Forties and making each Australian voyage a journey around the world over the best and shortest sailing course known, United States-owned clippers sent out to Australia, being unable to obtain any return cargo or "paying return load" in the antipodes, had to sail in ballast from Australia to a Chinese, East Indian, or Indian port to pick up a cargo and return home or to a North Atlantic port via the Cape of Good Hope. Therefore, comparisons of the length of passages outbound and homebound of United States-owned and operated clippers in the Australian trade are not possible. The *Whirlwind*, making four consecutive voyages from New York, returned home twice by way of Calcutta and twice via Manila. She averaged 147 days at sea (shortest, 134 days; longest, 156 days) on her return trips, to which should be added the period of detention at Calcutta or Manila. This can be compared with an average passage out (New York to Melbourne) of only 76½ days and a probable passage home of around 80 days if she had followed the Maury course and continued east via Cape Horn on the second, or return, leg of her passage. The *Malay*, in continuation of her four voyages (1853-1856) from a United States port, proceeded home via Calcutta or China ports. The final leg of the runs home from Calcutta in 1854 and 1855 were 107 days and 115 days to New York and Boston, respectively. As the difficulty of obtaining a cargo at an oriental port developed (because the supply of available floating tonnage was far in excess of demand), some American clippers sailed from an Australian port home via Cape Horn, but they made the run via a West Coast South American port, usually loading guano at Callao. The advantage of the around-the-world course of the British-Australian sailing packet lines for their Australian voyages is evident when it is noted that the American clipper *Red Jacket*, under charter to the British White Star Line on her maiden voyage from Liverpool to Melbourne and return to Liverpool, occupied only 142 days on her two passages (out and home); whereas the fast *Whirlwind* averaged 147 days on her sea runs on her return passages via Calcutta or Manila. Moreover, the *Red Jacket* covered only 28,743 miles on her voyage around the world, which occupied only 5 months 10 days 22½ hours, including port detention at Melbourne. The *Whirlwind*, with a fine passage of 75 days from New York to Melbourne in 1855, was 9 months 15 days away from home on her voyage, and in 1857 she was 9 months 20 days, when her outward passage occupied 79 days.

The *Swallow* (Capt. Benjamin W. Tucker), on her maiden voyage in 1854, was chartered to sail from London to Melbourne, getting £5,500 sterling (about \$26,750) for the run; returning, the contract called for £6 per ton of 40 cubic feet (or about 73 cents per cubic foot) for carrying freight from Shanghai to London. The *Swallow*, a well-built fast ship (which saw "hard deep-sea service" for thirty-one years), was not known in England in 1854, and she obtained "an ordinary prevailing rate of charter" for a ship of her size (i.e.,

1,435 tons American register). Later, however, she was to become one of the best known and most popular of the American clipper fleet in England. On her first passage from a British port, the *Swallow* (constructed by Robert E. Jackson at East Boston, who built the speedy *Blue Jacket*, bought by the British) went from London to Melbourne in 73 days 18 hours, beating, it was claimed, McKay's big *Champion of the Seas* (2,447 tons) of Baines's Liverpool Black Ball Line by sixteen hours and the beautiful and speedy little *Belle of the West* (936 tons) by nine days. Six months before the *Swallow* sailed from London for Australia, the big Yankee clipper *Racer* of 1,669 tons had cleared the port for Sydney with, we are told, "one of the heaviest charters ever recorded in Europe" for a single ship and for a single round voyage, "being £10,000 from London to Sydney and £8,000 for the return from Calcutta to London." Captain Ainsworth was in command, and the ship received \$87,000 charter money for a round voyage, which, however, was not as fast as anticipated, for it occupied from April 12, 1854, to May 15, 1855 (about thirteen months). In the case of the *Swallow*, the British shippers had not paid an extra bonus for speed; for they did not expect it, and good bottoms were plentiful. For the use of the *Racer*, however, there was a good deal of competition, not many fast ships were in port, and the ill-fated clipper of the Red Cross Line, notwithstanding her very slow run to England from China (in a very unfavorable season), was boosted by her agents in London as an exceedingly fast and able ship—"a bigger, finer, and speedier *Dreadnought*." (The Red Cross Line operated the highly publicized *Dreadnought*, "the fastest clipper packet in the North Atlantic ferry.") Moreover, it was known that the *Racer*, in January 1852, had crossed from New York to Liverpool in 14 days, after being delayed ten hours by fog in the Irish Channel, and had made a round Atlantic voyage in only 28 days. On her high-priced charter, however, the *Racer* was a big disappointment to the British merchants and to her commander, Captain Ainsworth. She went out from Portsmouth to Sydney in 106 days, but her total sailing time was 278 days as follows: (1) outbound, London to Sydney, 108 days, port to port; (2) intermediate in ballast, Sydney to Calcutta, 69 days; (3) homebound, Calcutta to London, 101 days. The *Racer* was wrecked near Wicklow, on the east coast of Ireland, on the night of May 6, 1856, when a day out from Liverpool bound for New York. The passengers and crew were returned to Liverpool, and when attempts were made by the owners and underwriters to salvage the ship, her cargo, supplies, and fittings, it was necessary to fire upon and drive off the belligerent, plundering Irish natives who had piratically taken control and assumed rights of ownership of the stricken ship; the *Racer* herself was a complete loss.

Among other good passages credited to American-built clippers in the Australian trade, for which authenticated dates are not readily available, can be mentioned the following:

| Name of Clipper | Built (launched) | Builder | Tonnage | Course | Passage in Days |
|--------------------------|------------------|-------------------------------------|---------|---|-----------------|
| BLUE JACKET | Aug. 27, 1854 | Robert E. Jackson, East Boston | 1,790 | Lyttelton, N. Z., to London dock (1865) | 63 |
| BELLE OF THE SEA | 1857 | Ewall & Dutton, Marblehead, Mass. | 1,255 | London to Melbourne | 64 |
| GAME COCK | Dec. 21, 1850 | Samuel Hall, East Boston | 1,392 | New York to Melbourne (early 1870's) | 75 |
| TORNADO | Jan. 1852 | Jabez Williams, New York | 1,802 | Liverpool to Melbourne | 75 |
| INVINCIBLE | Aug. 6, 1851 | William H. Webb, New York | 1,769 | England to Melbourne | 76 |
| GAUNTLET (renamed SUNDA) | Sept. 5, 1853 | Thomas J. Southard, Richmond, Maine | 1,854 | London to Brisbane (a record) | 76 |

Other Passages by American Clippers in the U.S.A.-Australia Trade

The following American clipper ships also made passages from New York to Australian ports:

| Name of Clipper and Tonnage | Built (launched) | Builder | Original Owner | Dimensions in Feet and Inches | | | Sailing Performance in Australian Run from New York |
|-----------------------------|------------------|-----------------------------------|-----------------------------------|-------------------------------|-------|-------|---|
| | | | | Length | Beam | Depth | |
| EDWIN FORREST (1,141 tons) | 1853 (Oct. 5) | D. D. Kelly, East Boston | Crosby, Crocker & Co., New York | 186-6 | 36-4 | 23 | In 1854, New York to Australia. Return via Calcutta and London. In 1858 was 57 days San Francisco to Melbourne. |
| FLEETWING (896 tons) | 1854 | Hayden & Cudworth, Medford, Mass. | Howes & Crowell, Boston | 167 | 34 | 21-8 | New York to Melbourne (arrived Feb. 25, 1874). Returned to New York via Newcastle, Hong Kong, and Manila. Again went to Australia and was sold to go under British flag. |
| GALATEA (1,041 tons) | 1854 (Mar. 16) | Joseph Magoun, Charlestown, Mass. | W. F. Weld & Co., Boston | 182 | 36-6 | 23 | In 1873, New York to Melbourne. Returned via Bombay and Havre. |
| GAME COCK (1,392 tons) | 1850 (Dec. 21) | Samuel Hall, East Boston | Daniel C. Bacon, Boston | 182 keel | 39-10 | 22 | New York, May 2, 1863, to Melbourne. Newcastle to San Francisco (with coal), 60 days (lost all three topmasts in hurricane). In early 1870's, New York to Melbourne, 75 days. |
| GOLDEN WEST (1,441 tons) | 1852 (Nov. 16) | Paul Curtis, East Boston | Glidden & Williams, Boston | 196 deck | 39 | 23-4 | New York, Feb. 25, 1858; Sydney, Aug. 8, 1858; passage of 164 days, port to port. Lost rudderhead and put into Simon's Bay for repairs. Thence Sydney to Hong Kong, 40 days, and Hong Kong to San Francisco, 60 days. In 1860, London to Melbourne, 100 days. Sold British, 1863. |
| MONSOON (773 tons) | 1851 | Trufant & Drummond, Bath, Maine | George Hussey, New Bedford, Mass. | 158 | 32-7 | 21 | Left New York July 26, 1856. Arrived Hobson's Bay Nov. 11, 1856. Reported "hove to off Sydney and driven into a cove, where she lost anchors and substituted a cannon." Returned from Melbourne via China, Singapore, and Calcutta. From New York to Australia, arriving Newcastle Jan. 19, 1863. Return via Shanghai and Manila. |

(Continued on next page)

| Name of Clipper and Tonnage | Built (launched) | Builder | Original Owner | Dimensions in Feet and Inches | | | Sailing Performance in Australian Run from New York |
|--------------------------------|-------------------|--|--|-------------------------------|------|-------|--|
| | | | | Length | Beam | Depth | |
| RATTLE (1,121 tons) | 1852 (Oct. 15) | George Thomas, Rockland, Maine | W. Whitlock, Jr., New York | 185 | 35 | 21 | New York to Melbourne (Jan. 27, 1872); passage, 83 days. Operated 1869-1871 in Pacific—China, Manila, and Australia. |
| SIMOON (1,436 tons) | 1852 (Dec. 4) | J. Williams, Williamsburg, N. Y. | B. A. Mumford, New York | 205-7 | 38-8 | 22-6 | Second voyage, New York-Melbourne, 1854. Return via Peru, reaching New York Feb. 5, 1855, 65 days from Callao. |
| STAR OF EMPIRE (2,050 tons) | 1853 | Donald McKay, East Boston | E. Train, T. Hall, and B. Bangs, Boston | 220 | 43 | 27-6 | After a few voyages as a transatlantic packet in Enoch Train's White Diamond (Boston-Liverpool) Line, was placed in the Australian trade. Put into Algoa Bay June 28, 1856, bound from Rangoon for Falmouth, England, and condemned. |
| WEBFOOT (1,091 tons) | 1856 | Shiverick Bros., East Dennis, Mass. | P. S. Crowell, Boston | 180 | 37-6 | 22 | In 1863, New York to Melbourne; return, Callao to London. |

Another little clipper, the *Gem of the Sea* of 372 tons (length 116 ft., beam 26.2 ft., depth 13.5 ft.), built by Chase & Davis, Warren, R. I., in 1853, was reported as "promptly sold to a New York house for Australian trade." In the fall of 1853 (August-December), she made a slow run of 105 days from Boston to Sydney, but the "*Gem*" was evidently a very fast ship for her size. She is credited early in 1854 with making a record run of 35 days from Port Phillip, Australia, to Callao, Peru, and this is a trade route that generally favored big ships. On this splendid passage, the *Gem of the Sea* traveled 5,325 nautical miles in twenty-two consecutive days, an average of 242 miles per day and an average speed of over 10 knots per hour for over three weeks.

The *Wings of the Morning* was a small vessel of 915 tons, built by Edwin Achorn at Waldoboro, Maine, in 1852, and she arrived at Melbourne October 25, 1854, with "a fanciful name which promised a speed that was far from being realized in her slow run of 102 days from New York to Melbourne." George Francis Train (formerly of Enoch Train & Company, of Boston, the original financial and moral backer of Donald McKay as a shipbuilder), then engaged in the shipping business at Melbourne, wrote to HUNT'S MERCHANTS MAGAZINE on October 28: "The *Wings of the Morning* came in day before yesterday from New York, but the Utter-Most-Parts-of-the-Sea has not yet been heard from. Snail, Tortoise, or Drone I would suggest for the next clipper, just for a change. I am tired of these always-a-little-faster names."

Outside of the fact that Melbourne business houses had cause to be disgruntled at the poor sailing performances of a reputed clipper with a name "that suggested quality and speed," Train personally was in no position to criticize the nomenclature of American-built clippers. He himself is authority for the written statement that he selected the name *Sovereign of the Seas* for a McKay-built clipper, and in conversations he claimed having had "something to do with the naming of the *Flying Cloud*." Train was enthusiastic about the McKay-built *Lightning*, which had arrived at Melbourne a little less than three months before he wrote his "humorous sarcastic squib," and evidently he thoroughly approved of

the name of the second of the Black Ball Liverpool-Australia liners—the *Champion of the Seas*—which at the time of his writing was on her maiden voyage to Melbourne. It would seem that *Wings of the Morning* was a much more modest and artistic name than one which proclaims itself as “sovereign” or “champion,” and, as far as suggesting speed is concerned, it would be difficult to find a more boastful name for a ship than *Lightning*.

The *Wings of the Morning*, on the homeward section of her New York-Australia voyage, went from Melbourne to Peru, where she loaded with guano and sailed March 31, 1855, from Callao to Hampton Roads in 85 days, reaching Philadelphia to discharge on June 30.

The *Flying Dragon* (1,127 tons; built at Bath, Maine, in 1853) left Baker’s Island with Peruvian guano February 7, 1860, for Hampton Roads and got into trouble in the South Pacific. A mutiny followed, and the ship proceeded to Sydney, N.S.W., for repairs and to straighten out difficulties with the crew. From Sydney, the “*Dragon*” sailed to Hampton Roads, where she arrived November 1, 1860, after a fast passage of 75 days.

The following American clipper ships, other than those already mentioned, made passages from Boston, Mass., to Australian ports:

| Name of Clipper and Tonnage | Built (launched) | Builder | Original Owner | Dimensions in Feet and Inches | | | Sailing Performance in Australian Run from Boston |
|-----------------------------------|------------------|---|-----------------------------------|-------------------------------|------|-------|--|
| | | | | Length | Beam | Depth | |
| EUREKA (1,041 tons) | 1851 (Feb. 9) | J. A. Westervelt, New York | Chambers & Heiser, New York | 171 | 36-5 | 21-6 | In 1863-1864, ran from Boston to Melbourne; under British ownership. Ran from San Francisco to Melbourne in 1861 in 61 days. |
| GEM OF THE OCEAN (702 tons) | 1852 | Hayden & Cudworth, Medford, Mass. | William Lincoln, Boston | 152 | 31 | 20-6 | Boston, Oct. 4, 1853, for Port Phillip, Australia. During 1854-1855, in Boston - Australia - Calcutta trade, making passages from Calcutta home in 108 and 105 days. |
| JOSEPH PEABODY (1,178 tons) | 1856 (June 7) | E. & H. O. Briggs, South Boston | Curtis & Peabody, Boston | 186 | 38-1 | 23-6 | In 1859 went out to Australia from Boston, thence to Callao, arriving Apr. 11, 1860, 39 days from Melbourne. |
| RADUGA (587 tons) | 1848 | Currier & Townsend, Newbury, Mass. | H. Prince et al., Boston | 149 | 29 | 19 | Under command of Captain Lamson, went from Boston to Melbourne (1853-1854), Calcutta, Mauritius, and back to Boston. |

Notwithstanding the gradual shifting of the shipbuilding center of the United States eastward during the clipper ship era of the fifties, New York became increasingly important as a port not only for transatlantic packets (which business she virtually monopolized) but also for trading with the Orient, India, and the antipodes. In 1860 the tonnage that cleared U.S.A. ports for Australia aggregated 54,000 tons, and of this, 19,000 tons sailed from New York and 13,000 tons from Boston. By this time, trade had developed between California and the antipodes, and 19,000 tons (the same as the New York tonnage) cleared San Francisco for Australia.

*Clipper Ship Trading between Australia and
West Coast U.S.A. Ports*

For many long years, the Australian trade, like the Californian, was a one-way trade except that Melbourne gave the British colonial clipper packets some gold and well-paying passengers for the homeward passage. As time progressed, Australia exported wool, tallow, and grain, but it took a long time before there was ever any freight movement between Australia and the United States. During the Gold Rush, however, occasional passages were made carrying passengers between Australian ports and California. The 520-ton Baltimore clipper *Architect*, in the fall of 1851, ran from San Francisco to Sydney in the fast time of 46 days and, in May 1852, returned to San Francisco, making a passage of 77 days from Hobart Town. This was followed by a run of 54 days to Sydney and a passage to Hong Kong, where the little American clipper loaded tea for London and in 1854 was sold to the British.

The small clipper *Rover's Bride* of 376 tons (length 135 ft., beam 29 ft., depth 11.4 ft.), built by Foster & Booz, Canton, near Baltimore, in 1853 for J. D. Nason, San Francisco, was sold in Australia in 1854. She was abandoned at sea December 24, 1856, when making a transatlantic passage from Savannah, Ga., to Liverpool.

In later years, trading between the northwest coast ports of the United States and Australia became fairly brisk at times, but was always within narrow limits, consisting primarily of the exchange of Puget Sound lumber for Australian (Newcastle) coal. Australia had plenty of wool and grain to export, but San Francisco also became a great grain port and did a relatively large business with Europe, the British California grain fleet being quite sizable in addition to the large tonnage of American wood grain carriers that operated in that trade. In addition to the clippers previously mentioned as participating in the U.S.A.-Australia trade, the following clipper ships, at sometime in their career, made passages between either San Francisco or Puget Sound (lumber port) of the West Coast, U.S.A., and Melbourne, Sydney, or Newcastle (coal port), Australia:

| Name of Clipper and Tonnage | Built (launched) | Builder | Original Owner | Sailing Performance in Australian Run from West Coast Pacific Ports (San Francisco and Puget Sound) |
|------------------------------|-------------------|---|--|---|
| DASHING WAVE (1,180 tons) | 1853 (July 15) | Fernald & Pettigrew, Portsmouth, N. H. | Samuel Tilton & Co., Boston | In 1855, San Francisco to Melbourne in 55 days. In 1863, San Francisco to Sydney in 46 days. |
| FAIR WIND (1,299 tons) | 1855 (Oct. 12) | E. & H. O. Briggs, South Boston | H. Hallet & Co., Boston | In winter 1857-1858, ran from San Francisco to Melbourne. |
| FLYING ARROW (1,092 tons) | 1852 (Dec.) | Isaac Dunham, Frankfort, Maine | Manning, Stan- wood Co. and Thomas Gray, Boston | In 1855, ran from San Francisco to Melbourne. Leaving Melbourne Nov. 9, 1855, in ballast for Batavia, was totally dismantled, towed back to Melbourne, and sold Jan. 16, 1856, for \$15,000. Became WINGS OF THE WIND and was owned by G. Duncan & Co., London. |

(Continued on next page)

| Name of Clipper and Tonnage | Built (launched) | Builder | Original Owner | Sailing Performance in Australian Run from West Coast Pacific Ports (San Francisco and Puget Sound) |
|--|-------------------|---|--|--|
| FLYING DRAGON (1,127 tons) | 1853 (June) | Trufant & Drummond, Bath, Maine | Reed, Wade & Co., Boston | Put into Sydney for repairs in 1860 and made run from there to Hampton Roads in 75 days. San Francisco Aug. 11, Melbourne Oct. 4, 1861; record passage, 53 days. Return, Newcastle (with coal) Dec. 5, 1861, San Francisco Jan. 29, 1862. Struck Arch Rock entering harbor and foundered after 55½-day passage. Claimed a 45-day run from Australia to San Francisco (not verified). |
| MARY ROBINSON (1,371 tons) | 1854 (early) | Trufant & Drummond, Bath, Maine | E. M. Robinson, New Bedford | In 1858, ran from San Francisco to Melbourne in 58 days; thence 40 days to Honolulu. |
| MIDNIGHT (962 tons) | 1854 (Apr. 17) | Fernald & Pettigrew, Portsmouth, N. H. | Henry Hastings, Boston | San Francisco June 24, Melbourne Aug. 18, 1860; passage of 54 days. From Melbourne proceeded to London via Calcutta. |
| SEA SERPENT (1,337 tons) | 1850 (Dec.) | George Raynes, Portsmouth, N. H. | Grinnell, Minturn & Co., New York | In 1872, San Francisco to Newcastle, N.S.W., in 55 days; then 30 days to Hong Kong and continued to New York. |
| STARR KING (1,171 tons) | 1854 | George W. Jackman, Jr., Newburyport, Mass. | Baker & Morrill and Bates & Thaxter, Boston | Left San Francisco Oct. 2, 1855; was 58 days to Melbourne, then 34 days to Hong Kong and 44 days to San Francisco, arriving June 26, 1856. Continued from San Francisco to Sydney in 64 days, then to Hong Kong and returned to San Francisco Dec. 4, 1857. On last voyage, Puget Sound to Sydney (Feb. 10, 1862); thence to Melbourne (to discharge); proceeded to Hong Kong and went ashore en route to Singapore. |
| THATCHER MAGOUN (1,248 tons) | 1856 | Hayden & Cudworth, Medford, Mass. | T. Magoun & Son, Boston | In 1872, two round voyages (San Francisco and Newcastle, N.S.W.) in 4 months 15 days and 5 months 25 days, respectively, including detention in antipodes. |
| DEFENDER (1,413 tons) | 1855 | Donald McKay, East Boston | Kendall & Plympton, Boston | Wrecked, Elizabeth Reef, South Pacific, Feb. 27, 1859, carrying lumber from Puget Sound to Sydney. |
| ELECTRIC SPARK (1,216 tons) | 1855 (Nov. 17) | Hayden & Cudworth, Medford, Mass. | T. Magoun & Son, Boston | In 1862, carrying lumber Puget Sound to Melbourne. In 1858-1859, ran from London to Sydney in 105 days and returned to New York. |
| PANTHER (1,278 tons) | 1854 | Paul Curtis, Medford, Mass. | R. C. Mackay & Sons, Boston | Sold 1869 to Pope & Talbot, San Francisco, for carrying lumber from Puget Sound to Pacific ports. First return from Australia, 62 days from Newcastle, N.S.W. (with coal); ran to within 800 miles of Golden Gate in 48 days. |

*The Canadian-built MARCO POLO and the Black Ball Line
of British-Australian Packets*

The clipper ship boom developed rapidly around the middle of the nineteenth century under the unprecedented urge for marine transportation and speed which followed the finding of gold in California and Australia, the settling of the American Pacific Coast, and the British colonization of Australia and New Zealand. The British could not compete with the United States in the building of wood ships—in either size or quality—to meet the demand for floating mercantile tonnage, and America quickly moved to a dominant position in the world's marine construction and carrying trade. The English did nothing willingly to acknowledge or support the leadership of the United States in the merchant service on the Seven Seas, but, on the other hand, expressed jealous enmity and sought to discredit the wonderful achievements of the young republic. Canada, having generally the same kind of timber resources as the United States and being part of the British Empire, was appealed to for help by England in the emergency, which was yearly causing Britannia to become less of a factor in marine commerce and permitting her to retain her proud title of "Mistress of the Seas" only in a military naval sense.

Canadian-built tonnage had never been considered highly in Britain, and all American ships, whether built in the United States or Canada, were contemptuously referred to by British shipbuilders and the biased British marine fraternity as "softwood" ships. This term, denoting inferiority to British-built "hardwood" ships, has been steadily used by British historians, but it is difficult to understand the mental quirk of a patriotic Britisher who classifies a ship built with oak framing and hard pine planking (although sometimes with a splendid, clear and tough white pine decking) as "softwood" if constructed in America and as "hardwood" if built in Britain. English oak suitable for shipbuilding had been pretty well used up by 1850, and all the planking and most of the framing of British-built wooden ships had to be imported. Later, British composite ships with iron framing and teak planking were to be built, but such tonnage consisted of relatively small craft, and in the fifties, wood ships of size, wherever built in quantity by the highest class of shipbuilders, were hardwood ships with oak framing and timbers and hard pine planking, ceiling, and decking.

James Baines, of Liverpool, the founder of the British colonial Black Ball Line of passenger and cargo sailing packets running between England and Australia (which line, we are told, "in 1860 possessed 86 ships and employed 800 officers and 3,000 seamen"), commenced the service "by scraping together what little money he had" and buying in 1851 "a dirty-looking ship with stumpy-masts and apple-cheeked bows which lay in the Queen's Dock, Liverpool, with a broom at her masthead, thus indicating that she was for sale." This ship "had been cheaply built at Miramichi," Canada, and was deemed by English seafaring men to be such an inferior and unsightly product that Baines had no difficulty in buying her "for a song." The nucleus of the James Baines & Company packet fleet consisted for a few years of Canadian-built vessels, and it is surprising that, when the originators of the service selected a name for their line, they should pirate the one used by the longest established and most famous packet line in the world, the Black Ball Line of the United States, which had been running between New York and Liverpool since 1818 and was to continue to operate in transatlantic service to the end of Western Ocean packet sail. This stealing of an American name, with an endeavor to obtain, by reflected glory, a measure of its good will due to the splendid reputation it had built up (by unequalled regularity of sailing, the quality of its ships, and the superiority of its management), caused much confusion in Liverpool business circles, and both London and New York contemporaries referred to it as "a dirty Lancashire trick." Comparatively modern British historians have even had the audacity to

quote the old sailors' chanties, referring to the "Black Ball" Line of New York-Liverpool sailing packets, and infer that they refer to the British Black Ballers trading between Liverpool and Australia.

The real pioneer quality and sizable ship of the James Baines British colonial Black Ball Line was the *Marco Polo*, built by Smith, of St. John, New Brunswick, in the winter of 1851-1852. She was described by the ILLUSTRATED LONDON NEWS as a three-decker of 1,625 tons register with a length of 185 ft. (inside measurement), beam 38 ft., and depth of hold (from the coamings) 30 ft. What this leading English publication has to say of her construction is of interest, as it differs from the writings of prejudiced historians who refer to her as "a common six-year Quebec timber ship":

In strength she could not well be excelled. Her timbering is enormous. Her deck beams are huge balks of pitch [hard] pine. Her timbers are well formed and ponderous. The stem and stern frame are of the choicest material. The hanging and lodg-

ing knees are all natural crooks and are fitted to the greatest nicety. The exterior planking and ceiling is narrow, and while there has been no lack of timber, there has been no profusion of labour.

The bigoted English critics of Liverpool, who pounded down the value of the ship so that Baines was able to purchase her for a very low price, described her "as square as a brick fore and aft, with a bow like a savage bulldog"; but the ILLUSTRATED LONDON NEWS saw her quite differently, for this authoritative magazine type of paper, describing the model of the *Marco Polo*, says:

Her lines fore and aft are beautifully fine, her bearings are brought well down to the bilge; thus, whilst she makes amidships a displacement that will prevent unnecessary "careening," she has an entrance as sharp as a steamboat and a run as clean

as can be conceived. Below the draught line her bows are hollow; but above she swells out handsomely, which gives ample space on the topgallant foc's'le—in fact, with a bottom like a yacht, she has above water all the appearance of a frigate.

The London paper describes an ideal model combining speed and seagoing qualities, and this description is very different from that of the Liverpool marine fraternity, who saw in her when she first arrived at that port merely an "ugly shapeless, big thick lump of a beamy black ship." Yet, after completing her maiden voyage, Liverpool-Melbourne and return, the *Marco Polo* anchored in the Mersey December 26, 1852 (having left port for her outward passage on July 4, 1852), and when she hauled into the Salthouse Dock before a crowd of people in the quays, after completing a round voyage from Liverpool to Melbourne and return in the unprecedented time of 5 months and 21 days (including detention in the Australian port), a huge strip of canvas suspended between her fore- and mainmasts had painted on it in large and heavy black letters the words, "The Fastest Ship in the World."

On her first voyage to Australia, the *Marco Polo* is credited with "beating every other vessel in the trade, steamers included, on both the outward and homeward passages"; also, with beating her particular rival, the new steamer *Australian*, from port to port each way "by a clear week." The best four consecutive days of sailing in the Roaring Forties, generally reported by historians as occurring on this maiden voyage of the "*Polo*" during the run east to Melbourne (i.e., 1,344 miles in four consecutive days), were actually realized on Voyage No. 2, when in the vicinity of Cape Horn, homeward bound. On her maiden voyage, the "*Polo*" covered 940 nautical miles in three consecutive days during her run to Cape Horn (an average of 313 miles per day), and on November 3, 1852, when 23 days out, she made her best day's run of 353 miles—an average speed of 14.7 knots per hour for twenty-four hours and showing by taffrail log "a speed of 17 knots an hour for hours together."

The hidebound, self-satisfied, and outrageously conceited British shipbuilders and critical, "patriotic" marine writers must have been chagrined to find that a ship dubbed by them as a scow that could not possibly sail was heralded, after a period of a few months, by captain, crew, and owners as the fastest of all merchant vessels sailing the Seven Seas. The performance of the *Marco Polo* and other Canadian-built vessels caused James Baines in the late summer of 1853—about half a year after the return of the "*Polo*" to Liverpool after com-

pleting a round voyage, Liverpool to Australia and return, in only 5 months and 21 days—to contract with Donald McKay (who was Canadian-born) for three big, fast clippers and commence business arrangements that in about a year's time caused six large ships to be launched from McKay's East Boston yard for service in the British-Australian Black Ball Line.

James Baines undoubtedly had "a good eye for a ship," and he also was determined from the start of his career as a packet shipowner to copy the Americans in the management and operation of his ships and "in preparing them properly to carry emigrants." Baines wanted captains who would drive his ships night and day like the American transatlantic packets, so he selected Capt. James Nicol ("Bully") Forbes for the command of the *Marco Polo*. That Forbes was a driver and "devilishly resourceful" (at least until he tried to sail the only big wood sailing ship—the *Schomberg*—ever built in Britain) is proved by the fact that, when he arrived with the *Marco Polo* at Hobson's Bay on her maiden run to Australia and found "some forty or fifty ships waiting to sail, held up for want of crews," he promptly had his own crew arrested by the authorities and clapped into prison on a charge of insubordination, and he kept them locked up until the "*Polo*" was ready to sail for home. This unscrupulous act permitted the voyage to be completed in many weeks, and possibly months, shorter time than if Forbes had followed the usual procedure and given his crew an opportunity to desert and go off to the mines.

The second point that Baines copied from American ships was the preparation of 'tween deck space for the carrying of emigrants. He had sense enough to know that in regard to emigrant stowage, arrangement of space, facilities, and ventilation, a three-month voyage on which the equator had to be crossed was a very different matter from a 30-day passage across the North Atlantic—usually made against strong "but healthy and cleansing" westerly winds. Baines and Forbes co-operated well in making the arrangements for and the carrying of emigrant passengers to Australia in the *Marco Polo*, and the result was so outstandingly gratifying that it made news. The British Government Emigration Commissioners contracted with the Black Ball Line to carry 930 emigrants out to Australia on the *Marco Polo*, and a great record was made when the ship reported only two deaths of adults during the voyage out, "both from natural causes," and "only a few deaths of children from measles." Historians tell us that at the time that Baines and Forbes made this "record" on the *Marco Polo* for the safe transportation of emigrants, ships carrying about half the number of emigrants as the "*Polo*" had been and were at that time arriving in Hobson's Bay from England "with from 50 to 100 deaths aboard."

It is of interest to record that the *Marco Polo*, described by British anti-American critics as "a cheap and poorly constructed softwood contraption" that was "a disgrace to send across the Atlantic," proved to be a fast sailer and an admirable sea boat, being "renowned for her steadiness and comfort for passengers." This "common six-year Quebec timber ship" lasted not only the stated six but also actually thirty-two years in hard ocean service. When her end came in August 1883, she was not worn out, but was lost through faulty navigation, being wrecked on Cape Cavendish, Prince Edward Island.

Capt. "Bully" Forbes is credited—as is Capt. "Bully" Waterman of *Sea Witch* fame—with "padlocking his sheets, overawing his terrified crew from the break of the poop with a pair of levelled revolvers," occasionally taking a "pot shot" when sailors were not hustling enough either on deck or up aloft, and with carrying sail to the greatest possible maximum without losing his masts and spars and driving relentlessly night and day. Capt. "Bully" Forbes, who had previously commanded an old British brig in the Argentine trade and the early Black Ball ships *Maria* and *Cleopatra*, had a brief and meteoric career. It was said that "he was a man who could not be kept down," and he "astonished everybody by the way in which he forced indifferent ships to make unusually good passages." As a matter of fact, Captain Forbes rushed to the head of his profession as a British master of colonial sailing packets by two excellent voyages in the Canadian-built clipper *Marco Polo* and one still more wonderful in the U.S.A.-built clipper *Lightning* (both were new and excellently

modeled vessels for speed). Forbes had a mercurial temperament, was excessively egoistic and unbalanced, and his success turned his head. His next command, the British-built big wood clipper *Schomberg*, finished his career as a sea captain of note in whom the public and owners had confidence; he rose to fame with the *Marco Polo* during the last half of 1852, and he plunged into failure and disgrace following his contemptible conduct on the *Schomberg* during the late months of 1855. Capt. "Bully" Forbes was a hero for the short time of three years, but after this brief period in which he considered himself as a superman (and evidently made his employers and the general public think so too), he abruptly sank into obscurity.

Captain Forbes announced when commencing his second Australian voyage in the *Marco Polo*, "Last trip I astonished the world with the sailing of this ship. This trip I intend to astonish God Almighty." She went out with 648 passengers aboard, but she was relatively light in draft and laden so that she was said to be "ripe for speed." Whereas she made a return voyage in exactly six months, it took her 75 days out and 95 days back, or 160 days at sea, as compared with 68 days out and 76 days back, or 144 days, on her first voyage. "Man proposes, but God disposes." The best week's work of the *Marco Polo's* second voyage was 2,100 miles outbound (maximum, 314; minimum, 285; average, 300 miles per day) during May 1-12, 1853, and 2,152 miles homebound (maximum, 324; minimum, 260; average, 307½ miles per day) during June 15-21, 1853. The best sailing of the "*Polo*" also occurred on this second homeward passage, for during the four consecutive days July 2-5, 1853, inclusive, she covered 303, 332, 364, and 345 nautical miles, respectively, when in the vicinity of Cape Horn—a total of 1,344 miles in four days and an average of 336 miles per day and 14 knots per hour; her best average speed for twenty-four hours was 15⅓ knots per hour, and the maximum speed logged was "over 17 knots."

On her first return passage, Melbourne to Liverpool, the *Marco Polo* had a small list of cabin passengers and £100,000 in gold dust aboard; also a nugget of 340 ounces purchased by the government of Victoria as a present for the queen. On the homeward stretch of her second voyage, she carried forty cabin passengers and £280,000 in gold dust (about \$1,360,000). On this second homeward passage of the "*Polo*," she left Melbourne at 5:00 P.M. on June 10, and Money Wigram's famous London Blackwall packet *Kent*, one of Britain's very finest sailing packets, had sailed from the same port at midday on June 5. The *Marco Polo* passed the *Kent* and soon ran her out of sight astern in Long. 141° W. on June 26, when the "*Polo*" was 16 days and the *Kent* 21 days out from Melbourne. This episode eloquently tells the story of the difference in the sailing qualities of ordinary American-built ships (for the Canadian-built *Marco Polo* was not in the class of the finest U.S.A.-built clippers) and Britain's finest sailing vessels in the early fifties.

The *Marco Polo* is credited with a run from Melbourne of 72 days, and one authority states that during her career she made three very fast runs of 72, 75, and 77 days, respectively, from Melbourne to Liverpool. After the notorious Capt. "Bully" Forbes left her, the "*Polo*," under command of the promoted chief mate, Charles McDonnell, on her third voyage (and the first and only one with Captain McDonnell as master), ran out to Melbourne in 72 days 12 hours (claimed 69 days, land to land) and returned home in 78 days. The combined time of the outward and homeward passages of the two voyages of the *Marco Polo* under Captain Forbes was 144 days and 170 days, respectively—an average of 157 days; that of the one voyage with Captain McDonnell in command was 150 days, which is seven days better than the average of Capt. "Bully" Forbes's two much-heralded and highly advertised voyages. Evidently, Captain McDonnell was a good driver and an able navigator and commander. Under later commands (Captain Wild and Captain Clarke), the *Marco Polo* did not do so well. Her No. 4 voyage, under Captain Wild, consisted of passages of 95 days outward and 85 days homeward, a total of 180 days at sea; her No. 5 voyage, with Captain Clarke in command, resulted in an outward run of 81 days and a return passage of 86 days, a total of 167 days at sea (actually three days

better than Captain Forbes's second voyage with the ship, although Clarke did not turn her round anywhere near as fast as Forbes at the Australian end). It was said of Captain Wild that he was "no driver" and far too hidebound with English marine tradition to make good time; but Captain Clarke was also evidently no "sail carrier," and the *Marco Polo* does not seem to have been "pressed" after Captains Forbes and McDonnell left her. However, the "*Polo*" apparently retained her speed if her command was sufficiently competent and desirous of getting it out of her, for in 1867, when over fifteen years old, she made a passage of 76 days from Melbourne to Liverpool, leaving port at the same time as the steamship *Great Britain*. Captain Labbet, of Brisbane, Australia, a passenger on the *Great Britain* (as reported by Captain Coates in his GOOD OLD DAYS OF SHIPPING), says:

The *Marco Polo*, leaving at the same time, was soon lost sight of. A week later, the lookout man of the *Great Britain* reported a sail right ahead, and shortly afterward expressed his belief that it was the *Marco Polo*, in which ship he had previously sailed. His opinion, however, was scoffed at; on the ship being neared, he proved to have been

right. She was again distanced, and the *Great Britain* made what was esteemed a good passage. On taking the pilot off Cork [Queenstown, Ireland], the first question asked was:—"Have you seen the *Marco Polo*?" The reply came:—"Yes, she passed up 8 days ago."

British-Australian Sailing Packet Lines

The Gold Rush and government-encouraged boom in emigration to Australia, with an associated demand in the colonies for British goods, caused a great stimulation in British shipping trade, and many sailing packet lines were organized to run from England (generally Liverpool) to Australia, in addition to James Baines & Company's Black Ball Line, of which the following were the most prominent: the White Star Line (Pilkington & Wilson); the Fox Line (Henry Fox); the "B" (or Golden) Line (James Beazley); the Golden Line (Miller & Thompson); and the Red Cross Line (Ferne Bros.).

The White Star Line, the great rival of the Black Ball Line in the Australian trade both in size and quality of competition, was started by two Liverpool shipbrokers, John Pilkington and Henry Threlfall Wilson. The firm of Pilkington & Wilson, as owner of the White Star Line of Australian-British colonial packets, not only gave James Baines & Company of the Black Ball Line (also of Liverpool) real competition in the England-Australia sailing packet trade but also was conspicuous in the use in that service of the finest, largest, and fastest U.S.A.-built clippers. In February 1854, the White Star Line chartered with the option to buy and, after one voyage, promptly exercised its option and purchased, for the goodly sum of £30,000 sterling, the Pook-designed and Maine-built clipper ship *Red Jacket*—a ship believed by many authorities to be the finest and fastest clipper ship ever built. The *Red Jacket* flew the White Star flag and sailed from Liverpool for Australia as a chartered White Star Line packet on May 4, 1854, ten days before the first of the Baines Black Ball McKay-built liners, the *Lightning*, could be got ready in Liverpool to sail on her maiden voyage to Melbourne. The *Lightning* had been built in the United States to the order of James Baines & Company and was the first of all U.S.A.-built ships to be owned by that company and its British-Australian line of packets.

The Black Ball Line had been a pioneer in putting an American ship of its ownership in the Australian run, but the vessel—the *Marco Polo*—was Canadian- and Empire-built and was not a U.S.A.-built clipper. James Baines & Company had also been a leader in chartering a U.S.A.-built and owned clipper for a voyage in the British-Australian trade, but the McKay-built *Sovereign of the Seas*, making a voyage in 1853-1854, was not optioned

and was not purchased; neither was she continued in the service by the Black Ball or any other British line. However, Baines and the Black Ball Line were the pioneers in contracting to build a fleet of big clippers (or even a single ship) in a United States shipyard and were, moreover, pioneers in building a British-Australian packet in Canada when they arranged in the winter of 1852-1853 for the construction in New Brunswick of the *Indian Queen* of 1,041 tons, which was advertised as a "sister ship to the *Marco Polo*."

Pilkington & Wilson, of the Liverpool-Australia White Star Line, acquired the Canadian-built 1,420-ton *Ben Nevis* in 1852, and she sailed for Melbourne on her maiden voyage in that service on September 27, 1852. James Beazley bought the Canadian-built *Star of the East* (1,219 tons) and the *Miles Barton* (963 tons) in 1853 and promptly loaded them for Australia in the Golden Line, which also chartered the Canadian-built *Guiding Star* in October 1852 and paid, it was said, "the huge sum of £12,000." This Liverpool "White Star Line," which operated first in the Australian and later in north transatlantic service, should not be confused with George Thompson's Aberdeen "White Star Line," one of the pioneers in the Australian trade, which started its long career of service in 1825 and for many years was popularly called the "Aberdeen Clipper Line." James Baines was rightly criticized for his adoption of the American name of "Black Ball Line" when he inaugurated his Australian packet service, and his action led to what the British termed "befuddlement" on the part of shippers at Liverpool, which became a terminus of two different Black Ball lines: (1) an American transatlantic line that had been in steady, successful operation since January 1818; (2) a new British colonial line, with sailings to and from Australia, organized over thirty-two years later. Pilkington & Wilson, however, pirated the name "White Star" from Geo. Thompson & Company, of Aberdeen, Scotland, and actually had the audacity to use it when the Pilkington & Wilson firm organized a fleet of sailing packets to run from Liverpool in direct competition with a line that had been established a quarter of a century earlier and had built up a good reputation for reliability and quality of service in competition with other organized London lines and frequent Liverpool sailings to Australia. The flag of Thompson's Aberdeen "White Star" fleet, or "Aberdeen Clipper Line," was rectangular in shape; the field of the upper half was in red and the lower half in blue, and in the center was a large, six-pointed white star. The flag of the White Star Line of Pilkington & Wilson was a burgee with red field, on which was a large, six-pointed white star.

The Liverpool White Star Line of colonial (Australian) clippers changed ownership in 1867. The wood ships of Pilkington & Wilson were sold, but the house flag was turned over to T. H. Ismay for the sum of a thousand pounds. Ismay joined Imrie and started the White Star Line (which continued until recently), with iron sailing ships for the Australian trade, as Pilkington & Wilson retired from the field. It was this White Star Line, operating under the old red burgee with large white star, before described, that made a splendid record for years, becoming famous not only in the Australian trade and on the trade routes of the Seven Seas but also with a fleet of crack transatlantic express and intermediate liners, which finally merged about the middle of the 1930's with its greatest British competitor to form the Cunard-White Star Line—owner and operator of the *Queen Mary*, *Queen Elizabeth*, the first and second *Mauretania*, etc.

The original White Star Line, of Aberdeen, Scotland, built its first vessel, the small "clipper-brig" *Childe Harold* of 116 tons, in 1825. Between 1842 and 1870, the Aberdeen White Star Line built twenty-six wooden and three composite vessels of from 343 tons (*Neptune*, built 1842) to 1,192 tons (*Kosciusko*, built 1862), and the undisputed queen of the fleet was the *Thermopylae* of 948 tons, built in 1868. The Aberdeen, and pioneer, White Star Line gave its first order for an iron ship in 1869 (*Patriarch*; 1,339 tons), followed by the *Miltiades* of 1,452 tons in 1871 and the *Samuel Plimsoll* of 1,444 tons in 1873; all were built in the yards of Walter Hood, of Aberdeen, where the wood and composite vessels, including the *Thermopylae*, had been constructed.

Canadian-built Clippers in the British-Australian Trade

In the last quarter of 1854, when James Baines & Company was obtaining and commencing to put into the British-Australian Black Ball Line service its big, new clippers built by Donald McKay, Pilkington & Wilson acquired for its rival White Star Line not only the Maine-built clipper *Red Jacket* but also the Canadian-built clipper ships *White Star* and *Shalimar*. These two New Brunswick-built (but designated by the British as "Nova Scotian") ships, with the *Marco Polo*, built by Smith, of St. John, New Brunswick, are believed to have been the fastest of the Canadian clippers, and whereas each made claims of outstanding sailing performances, the *White Star*, built in 1854 by Wright, of New Brunswick, was probably the fastest of all the Canadian-built clippers. She was a big ship of 2,339 tons register, 213.3 ft. keel (with a stated length of 288 ft. over-all, which seems incorrect if the length of keel is accurately given), 44 ft. beam, and 28 ft. depth. The maiden voyage of the ship resulted in a passage out of 79 days and a slow run home of 88 days, but in 1856 she went out in 75 days (claimed 67 days, land to land) and returned to Liverpool in 76 days. It is said that her outward passage in 1858 was made in 72 days (pilot to pilot) and that in 1860 she went out in only 69 days, during which run, it was claimed, she covered 3,306 miles in ten days (i.e., an average of 330½ miles per day and about 13¾ knots per hour) under ideal sailing conditions in the Roaring Forties between the Cape of Good Hope and Melbourne. During the first part of 1860, the *White Star*, leaving Melbourne February 25, claimed a run of 65 days to Cape Clear.

The *Shalimar* was a fast but much smaller ship and measured 1,557 tons register; she was 195.8 ft. long, 35.2 ft. beam, and 23 ft. deep. This Canadian-built clipper sailed from Liverpool for Hobson's Bay on her maiden voyage and reported that she was off Cape Northumberland in 67 days (after dropping her British pilot), but head winds then caused an annoying delay, and the total length of passage, port to port, was stated as 77 days. The return passage was reported as 75 days, and the whole round voyage—including port detention—occupied 197 days, or 6 months and 14 days.

Newspapers at times carried yarns of big day's runs for these Canadian-built clippers in the Australian trade while running their easting down, but these claims were never substantiated by log records and official reports. Passengers told the press that in January 1854 the *Marco Polo*, under Captain McDonnell, traveled 428 miles in one day, and the same source of nonauthoritative information was responsible for the statement that the *Shalimar* in 1855, on her first passage to Australia, under Captain Robertson, had a day's run of 420 miles. If such runs were ever made (and they were never officially claimed), the miles referred to, it has been said, "were undoubtedly statute and not nautical miles, as such figures were often given to passengers who were acquainted with land miles as a measure of distance and speed."

Pilkington & Wilson and the White Star Line, of Liverpool, made the claim that their three American-built clippers *Red Jacket*, *White Star*, and *Shalimar* (the first constructed in the United States by George Thomas, Rockland, Maine, and the other two in Canada) were the fastest trio of clipper ships in the Australian trade and were unsurpassed by the Black Ball Line ships built for James Baines & Company by Donald McKay, of East Boston. Leaving Liverpool near the close of 1854, the *James Baines* beat the *Shalimar* (sailing seventeen days before the "*Baines*") by twelve days on the run to Melbourne, but in early 1856 the U.S.A.-built *Blue Jacket*—later owned by the White Star Line—beat the Black Ball "crack flyer" *Lightning* by four days on the outward passage; a little later in the year, it is claimed, the *White Star* ran out in 79 days, whereas the *Donald McKay* (sailing thirty-seven days after her) took 81 days. In September 1855, both the *Red Jacket*

and the *Lightning* sailed from Liverpool bound for Melbourne, and the *White Star* liner ran out in 75 days while the *Black Baller* required 81 days. On the homeward-bound passage, the *Shalimar*, leaving Melbourne in March 1855, is credited with a run of 75 days to Liverpool, and the *Lightning*, clearing in April, made a passage home of 79 days; but the *James Baines*, according to British records, clearing Melbourne on March 11, 1855, was at Liverpool on May 20 after a passage of 69 days.

Another large and fast Canadian-built clipper ship, the *Morning Light* of 2,377 tons, was launched at New Brunswick in the spring of 1856 and made her maiden voyage in the *Black Ball* Line from Liverpool (July 6) to Melbourne (September 17). This fast passage of 73 days (probably from pilot to pilot) was beaten during the great competitive years of 1854-1856 inclusive, according to British records, only by the *James Baines* (64 days), *Red Jacket* (67 days), *Blue Jacket* (69 days), *Lightning* (69 days), and *Champion of the Seas* (72 days)—all United States-built clippers. This *Morning Light* should not be confused with two United States-built clippers of the same name built in 1853—one of 1,713 tons, launched by Tobey & Littlefield, Portsmouth, N.H., for Glidden & Williams, of Boston, and the other of 938 tons, built by William Cramp, Philadelphia, Pa., for Bucknor & McGammon of that city.

The following is a list of the most important Canadian-built clippers constructed during the years 1851-1855 inclusive that were acquired by the British and operated in the Australian packet service by regular lines:

| Name of Clipper | Built | Ton-nage | British Owner (Line) | Name of Clipper | Built | Ton-nage | British Owner (Line) |
|------------------|-------|----------|-----------------------------|-----------------|-------|----------|----------------------|
| MARCO POLO | 1851 | 1,625 | Black Ball | INDIAN QUEEN | 1853 | 1,041 | Black Ball |
| BEN NEVIS | 1852 | 1,420 | White Star | MERMAID | 1854 | 1,200 | Black Ball |
| GUIDING STAR | 1852 | 1,000 | James Beazley's Golden Line | MORNING STAR | 1854 | 1,534 | Fernie Bros. |
| GOLDEN AGE | 1853 | 1,241 | Tyson & Co. | WHITE STAR | 1854 | 2,339 | White Star |
| SALDANHA | 1853 | 1,257 | Black Ball | SHALIMAR | 1854 | 1,557 | White Star |
| STAR OF THE EAST | 1853 | 1,219 | James Beazley's Golden Line | FLORENCE | 1855 | 1,362 | Brocklebank |
| MILES BARTON | 1853 | 963 | James Beazley's Golden Line | NIGHTINGALE | | | |
| | | | | MORNING LIGHT | 1855 | 2,377 | Black Ball |

The *Hibernia* of 1,065 tons, built at St. John for British owners, also achieved a measure of popularity among the early Canadian-built British-Australian passenger packet ships. The *Elizabeth Ann Bright* (ex-*Tam O'Shanter*) of 1,920 tons, built in 1856 at St. John, New Brunswick, was also acquired and operated in the British-Australian service by the *Black Ball* Line.

The *Ben Nevis* was the pioneer ship of Pilkington & Wilson's *White Star* (Liverpool-Melbourne) Line, and she proved to be too short and deep for her length. She left Liverpool September 27, 1852, with 600 passengers aboard and cargo in the hold, but had a slow passage of 96 days out to Melbourne. The *Star of the East*, built "on spec" by W. & R. Wright at St. John, New Brunswick, reached Liverpool March 5, 1853, after a transatlantic passage of 20 days. She was promptly bought by James Beazley, an experienced ship operator, for the Australian packet trade and his new colonial Golden Line. Her cost ready for sea was reported at £22,683, which was a goodly sum for a Canadian-built ship of 1,219 tons, as it figures about \$90 a ton. The clipper measured 206 ft. long on the keel, 237 ft. over-all, 40 ft. 10 in. beam, and 22 ft. depth of hold; she had a mainmast 84 ft. long over-all and 41 in. diameter, a main yard 89 ft. long, and spread 5,500 yards of canvas for her main sails, excluding studding sails. The *Star of the East* (Captain Christian) reported 76 days from pilot to pilot on her maiden voyage (Liverpool to Melbourne). Returning, she did not travel east around the Horn, but went to Shanghai for a cargo and, sailing with the favorable monsoon, reported a run home of 104 days, pilot to pilot. Beazley announced to his shareholders that the maiden voyage of the "*Star*"

occupied only 9 months and 27 days, and "the ship cleared £8,018 clear profit"; on her second voyage in slower time over the same route, the profit was stated at £8,920.

The *Miles Barton*, a ship 21 per cent smaller than the *Star of the East*, also bought by James Beazley upon her arrival at Liverpool from New Brunswick, was said to be fast and lucky with winds in the Atlantic on her early voyages. She went out to Melbourne on her maiden voyage in 82 days, but a passage of 79 days (and even of 78 days) was claimed. Lubbock says that she made "two trips of 76 days each," which is questionable.

The *Guiding Star*, which arrived at Liverpool in October 1852 and was chartered by James Beazley for a large sum (reported at £12,000), was an unlucky ship and "went missing" early in 1854; it is believed that she was a victim of ice and became embayed and "back-strapped" by a huge ice island in about 44° S. and 25° W.

The *Indian Queen*, acquired by James Baines for the Black Ball Line, was obviously not a sister ship to the *Marco Polo* as advertised, for she was 36 per cent smaller. The "*Queen*," although small for the trade, proved to be a fast and a lucky ship. On her maiden voyage, which occupied only 6 months and 11 days, she left Liverpool on January 29, 1854, and went out to Melbourne in 84 days. In the winter of 1854-1855, the ship was reported to have made a fast run of 80 days out to Melbourne and a return home of 78 days from Hobart Town. The British records show, however, that she left Hobart Town March 17, 1855, and arrived at Liverpool June 5, which is an 80-day passage. On her run out, her claimed passage of 80 days can be compared with a reported run of 76 days by the Canadian-built White Star-owned *Shalimar*, a 72-day passage by the U.S.A.-built *Champion of the Seas*, and a record run of 64 days by another McKay clipper, the *James Baines*, all of which sailed within a month of the *Indian Queen* and arrived at Melbourne between December 22, 1854, and February 12, 1855. That the *Indian Queen* was a lucky ship is proved by the fact that on March 31, 1859, when between Australia and Cape Horn in about 60° S. and 150° W., while proceeding at a speed of 12 knots, she sideswiped an immense iceberg to the north of her, lost many spars (bowsprit, foremast, all yards above the lower masts, and the main yard), and suffered much deck damage. The cowardly captain, first mate, and fifteen men, in a panic, deserted the ship and took to a lifeboat, and it is evidently just as well that they were lost; but the second mate, carpenter, and eight of the crew left behind succeeded in getting the crippled ship with her forty passengers (thirty men, three women, and seven children), besides the doctor, purser, stewards, and cooks, into Valparaiso. The *Indian Queen* was chafed but not damaged enough below water to leak. If she had been a few feet farther to the north, she would have crashed and gone down with the loss of all hands.

The British-Australian sailing packet lines built some ships in Canada for "patriotic" and "British Empire policy" reasons after they had discontinued placing orders with United States builders. Among ships operating as British colonial passenger and freight packets in the sixties were the *Prince of the Seas* (1,316 tons), built in 1858, and the *Legion of Honour* (1,219 tons), built by McDonald, New Brunswick, in 1863, which sailed under the White Star Line flag; the *Empress of the Seas II* (1,243 tons), built by Hilyard, New Brunswick, in 1863, and the *Sunda II* (1,556 tons), built by Desmond at Miramichi, New Brunswick, in 1865, both of which were Black Ballers. Wright & Company operated in the Australian trade the *Dawn of Hope* (1,215 tons), built by Nevins, New Brunswick, in 1859, and the big *Mistress of the Seas* (1,740 tons), built by Gass, New Brunswick, in 1861. The *Southern Empire II* (1,142 tons), built by Baldwin, Quebec, in 1863, was operated as a colonial packet by Cannon & Son, and the *Palm Tree* (1,473 tons), built by Smith, New Brunswick, was put in the trade, J. Smith being the accredited managing owner. Another *Blue Jacket* (No. 2), a relatively small craft of 986 tons, built in 1858 by McLachlan, St. John, New Brunswick, was operated by the Liverpool-Australia White Star Line, and among other Canadian-built ships in the British-Australian trade were the *Conway*, *Wansfell*, *Utopia*, *David MacIver*, and several smaller and less important vessels.

*The RED JACKET—an American-built Clipper Bought by the Liverpool
White Star British-Australian Packet Line and Proclaimed the
Handsomest and Fastest Big Merchant Ship of Her Day*

The extreme clipper ship *Red Jacket* is entitled to much more recognition than she has received at the hands of historians in general, for she was probably the best as well as the handsomest of all the clipper ships built. Several international authorities, both contemporary and of a later date, have referred to her as "the fastest ship in the world," "the fastest of the big wood clippers," "the handsomest and speediest of the American clippers engaged in British trade," and "the fastest ship of her day." American writers have had but little to say about her, for, although built in the United States for American owners, she was promptly sold abroad and never entered the California Cape Horn trade or, after her maiden voyage, sailed from or to a United States port. Moreover, in 1854, when she first hoisted her canvas and made a sailing record unequalled to this day, the Boston propagandists were concentrating on boosting the Donald McKay ships, and they had no incentive or inclination to publicize the quality and performance of a Maine-built ship—forgetting or ignoring the fact that she was designed by a young Boston naval architect. British marine writers also failed to give the *Red Jacket* her just due, for they considered her an alien vessel—the product of an American designer and builder. Although her entire sea life after her maiden transatlantic eastbound passage was spent under the British flag, the prejudiced English historians were too busy writing in an exaggerated and often untruthful as well as bigoted fashion of the beauty and wonderful achievements of 100 per cent British-built clippers to pay much, if any, attention to the appearance, quality, and performance of an American-created vessel.

The *Red Jacket* was a big ship for her day, measuring 2,305 tons. She was launched November 2, 1853, by her builder, "Deacon" George Thomas, from his yard at Rockland, Maine, and was designed throughout by Samuel H. Pook, of Boston, the designer of many of America's finest clippers, such as the *Surprise*, *Game Cock*, *Northern Light*, *Herald of the Morning*, *Ocean Chief*, *Fearless*, *Ocean Telegraph*, *Challenger*, etc. Samuel H. Pook, of Boston, and William H. Webb, of New York, were America's outstanding naval architects in the early fifties and the clipper ship decade, for John W. Griffiths did not live up to his early promise as expressed by the modeling of the *Rainbow* and the *Sea Witch*. With the passing of Smith and Dimon, the once prominent New York shipbuilders (with whom he was employed as draftsman), Griffiths drifted into oblivion notwithstanding his persistent efforts to publicize himself. Although an editor of a marine publication and the writer of a book on naval architecture, he never gained the confidence of shipowners and shipbuilders and neither designed nor built any outstanding vessel in the busy fifties. William H. Webb, the talented naval architect of New York, owned and operated his own shipyard and designed only vessels that he himself built. Donald McKay, of East Boston, Mass., the famous builder of big and powerful clipper ships, was no naval architect or technical designer, but as an excellent practical builder shaped his own models and had the lines used in building taken off from his "whittled models." Samuel H. Pook was a well-educated theorist, mathematician, calculator, and technician. He—like Webb—designed his vessels on paper and modeled his ships from lines taken from his drawing board, not from a wood model. Pook is of importance not only because of his achievements and versatility (for he designed, as did Webb, all classes of ships—both sail and steam; mercantile and naval—and not merely clippers) but also because he was the first naval architect in the United States who was not connected with a shipbuilding yard.

The English marine historian, Basil Lubbock, says that the *Red Jacket* was more beautifully modeled than the Donald McKay clippers and that her "strength was disguised under

graceful curves." Arthur H. Clark, who was prejudiced in favor of McKay's Boston-built clippers, writes that the *Red Jacket* "attracted a great deal of attention at Liverpool, being an extremely handsome ship." Howe and Matthews, in *AMERICAN CLIPPER SHIPS*, gave a great ship and her designer a measure of credit due when they wrote:

The extreme clipper ship *Red Jacket* was justly celebrated for the delicate beauty of her graceful lines throughout. Her arched stem was as pleasing to the eye as was her powerful but exquisitely modeled stern, while her spars and rigging were perfectly proportioned. To the end of her days as a sailing ship, she was everywhere considered as the handsomest of the large clipper ships put afloat by American builders.

There is an old saying that "handsome is as handsome does," and in this respect the *Red Jacket* did not disappoint her friends and admirers. She made an all-time record transatlantic crossing on her maiden voyage, a record complete round voyage between Britain and Australia on her first sailing under the British flag, and another sailing record on her second outbound passage from England to Australia—her first voyage under British ownership. Again, the *Red Jacket* proved her sturdy construction and excellent design by a long and useful life. She was not worn out after a few years of strenuous service as were most of the extreme, sharp-lined, and overcanvased clippers of the fifties. After about fifteen years of service in the British-Australian and later Indian trade and some fourteen years in the transatlantic timber trade between Quebec and London, her hull was sound. However, British ocean transportation using fine-lined models under canvas could no longer be made to pay, so when about thirty years of age, she sailed to Cape Verde, where she was cut down to serve as a coal hulk.

On her maiden voyage under canvas, the *Red Jacket* sailed from New York January 10, 1854, and arrived at Liverpool on January 23 after an all-time record transatlantic passage of 13 days 1 hour 25 minutes, dock to dock. She was commanded on this crossing by Capt. Asa Eldridge, of Cape Cod, formerly of the Atlantic Dramatic Line sailing packet *Roscius* and one-time commander of Commodore Vanderbilt's steam packet yacht *North Star*. (Later, Captain Eldridge went down with the ill-fated Collins transatlantic steam packet *Pacific*.) On this maiden run across the Atlantic, the *Red Jacket*, built "Down East" and both designed and commanded by Massachusetts men, performed splendidly in disagreeable North Atlantic winter weather for the first week out, during which period the sailing conditions were good for about two and a half days and very poor for three days. During the first seven days out, the ship covered 1,185 miles, or about one-third of the expected logged total passage distance, and the average speed was 7 knots per hour (the best day averaged 11 knots, and for three days the speed averaged only 4½ knots per hour). During the last six days of the crossing, with more favorable winds (blowing for over three days at gale force), the *Red Jacket* did some remarkable sailing, covering 2,083 miles according to her log—an average of 347 miles per day and about 14½ knots per hour. Captain Eldridge's abstract log for the crossing reads as follows:

| Date | Latitude | Longitude | Distance | Wind | Course | Remarks |
|---------|----------|-----------|----------|---------------|---------------|---|
| Jan. 11 | 40-33 | 71-45 | 103 | S. by E. | E. ½ N. | Rainy unpleasant weather |
| Jan. 12 | 41-03 | 68-30 | 150 | S. by E. | E. by N. | Rain, hail and snow |
| Jan. 13 | 42-19 | 62-41 | 265 | S. S. E. | E. by N. ½ N. | " " " " |
| Jan. 14 | 44-25 | 58-20 | 232 | S. E. by E. | N. E. by E. | " " " " |
| Jan. 15 | 46-35 | 54-15 | 210 | S. E. by E. | N. E. ½ E. | Rain |
| Jan. 16 | 46-13 | 51-52 | 106 | S. S. E. | E. by S. | Snow and hail |
| Jan. 17 | 45-55 | 49-03 | 119 | S. S. E. | E. ¾ S. | " " " |
| Jan. 18 | 50-39 | 47-00 | 300 | E. by S. | N. by E. ½ E. | " " " |
| Jan. 19 | 51-58 | 35-55 | 417 | W. by S. ½ S. | E. by N. | Terrific gale and high seas |
| Jan. 20 | 50-39 | 27-00 | 364 | W. by S. ½ S. | E. by S. ¼ S. | " " " " " |
| Jan. 21 | 49-27 | 18-35 | 342 | W. by S. ½ S. | E. by S. | Fresh gale and high seas |
| Jan. 22 | 51-07 | 11-21 | 300 | W. S. W. | E. by N. ½ N. | Snow, strong wind, heavy squalls |
| Jan. 23 | 53-27 | 4-11 | 360 | South | Up channel | Snow, strong wind, squally, dirty weather |

Carl C. Cutler, in *GREYHOUNDS OF THE SEA—THE STORY OF THE AMERICAN CLIPPER SHIP*, gives the time of the crossing of the *Red Jacket* as 13 days 1 hour 25 minutes, the acknowledged all-time record, and says that "in six consecutive days her poorest run was 300 miles, while her average for the period was slightly over 343 miles" (or 14.3 knots per hour). However, he affirms that on January 19 it was reported, "The main brace was spliced on the strength of 413 miles, being the greatest distance ever run in 24 hours by anything afloat." Forty-one days later (March 1, 1854), another American-built clipper, the *Lightning*, said to be "the sharpest clipper ever built," claimed to have beaten the *Red Jacket's* record day's run of 417 miles (as per log) or 413 miles (as stated above) and reported a day's run of 436 miles. The log reads, "March 1—Wind south; strong gales; bore away for the North Channel; carried away the fore-topsail and lost jib; hove the log several times and found the ship going through the water at the rate of 18 to 18½ knots; lee rail under water and rigging slack. Distance 436 miles." Whereas the extract from the *Lightning's* logbook as published in the *Liverpool ALBION* following her arrival at the British port gives the position of the clipper—latitude and longitude—at noon for each of the days February 20 to 28 inclusive, no position is stated for noon of March 1 or for any of the following days of the passage. This is surprising and invites suspicion as does the fact that the mileage was given for each of the eleven days prior to and including March 1, but no mileage figures are given for March 2, 3, and 4. (For the first ten days of the *Lightning's* crossing, the maximum day's run was stated at 328 miles; minimum, 110 miles; average, 235½ miles, or 9.8 knots per hour.) The ship was reported to have made the transatlantic passage from Boston Light to Rock Light (a much shorter course than that from New York to Liverpool, either anchor to anchor or dock to dock) in 13 days 20 hours. Lubbock writes that "doubts have been cast on these big 24-hour runs made by the McKay clippers" and with reference to the *Lightning's* claims says: "The run to noon 1st March, of 436 miles, is difficult to check, as the ship's log is needed to note the different courses sailed and the exact position of the ship on the chart, when she bore away for the North Channel." Howe and Matthews, writing of the record-making transatlantic crossing of the *Red Jacket*, have said:

Uncoppered and manned by a very indifferent crew, she left New York January 11, 1854, and with snow, hail or rain almost every day of the run, she arrived at Liverpool on the 23rd, her elapsed time from dock to dock being 13 days 1 hour and 25 minutes, a record passage that stands to the present day. Her three poorest days were 106, 119 and 150 miles and her three best days, 413, 374 and 371 miles, respectively.

These figures for day's runs do not agree with the ship's log, but the time of the passage checks, and evidently that has not been questioned by any authority. Some of the English papers were not inclined to accept Captain Eldridge's verbal report of a record day's run and the complete length of the crossing as correct, but the American skipper, in a letter to the editor of the *TIMES*, offered his logbook, charts, and full recorded details of the passage for exhibition and referred to the difficulty encountered in sailing his vessel up the River Mersey: "I took pilot off Point Lynas at noon of the 23rd inst.; thence to the Bell Buoy was 2 hours and 20 minutes, the weather being thick and squally; no steam tug was to be found and the pilot refused to take the ship up the river." The *Red Jacket* made history on her maiden voyage, and even though steamships had been engaged in transatlantic packet service for some eighteen years and the American Collins Line of steam packets had recently established a record of a 10-day crossing, more than a generation was to elapse before the record day's run for a sailing vessel was to be equaled by a steamship.

The *Red Jacket* attracted so much favorable attention upon her arrival in Liverpool that the firm of Seccomb & Taylor, of Boston, found it to its advantage to accept an offer for her charter as made by the management of the British "White Star Line," who desired her for the English-Australian service. Captain Eldridge turned over the command to Capt. Samuel Reid, and the *Red Jacket* sailed from Liverpool May 4, 1854, on her first voyage to Australia. The day before (May 3) the new "Nova Scotia-built" colonial Black Ball clipper liner *Mermaid*—reputed to be "a very fast ship"—had sailed from the same port for the

same destination, and ten days after the *Red Jacket* had cleared for Melbourne, Capt. James Nicol ("Bully") Forbes took the new Donald McKay-built extreme clipper *Lightning* out from Liverpool bound for the same port. He announced, "The *Lightning* will make Port Phillip Heads ahead of the *Red Jacket* and will prove on this voyage that she is the fastest ship in the world." Captain Forbes did not make good his boast as the following record of the maiden voyages of the three clippers (all American-built) sailing from Liverpool between May 3 and 14, 1854, for Melbourne clearly shows:

| Name of Clipper | Line | Dates — 1854 | | Length of Passage in Days |
|-----------------|------------|--------------------------|----------------------|---------------------------|
| | | Departure from Liverpool | Arrival at Melbourne | |
| MERMAID | Black Ball | May 3 | July 17 | 75 |
| RED JACKET | White Star | May 4 | July 12 | 69 |
| LIGHTNING | Black Ball | May 14 | July 31 | 78 |

The *Mermaid* claimed a passage out in 74½ days, but the *Red Jacket* beat her by six days on the run out, port to port, and Captain Forbes, of the *Lightning*, said that his ship made the run from Liverpool to Port Phillip Heads in 77 days. The *Red Jacket's* log shows a length of passage of 69 days 11 hours 15 minutes, a total time under sail of 67 days 13 hours, a distance sailed of 13,880 miles, and an average speed of 8.6 knots per hour. From the Mersey to the Cape of Good Hope, the *Red Jacket* experienced light winds and poor trades, took 25 days to reach the equator, and was on the meridian of the Cape in Lat. 45° S. on the 51st day out; but her run from the Cape to Melbourne in less than 19 days has never been equaled in the annals of sail. The *Red Jacket* caught up with the *Mermaid* off the Spanish coast; the Pook clipper crossed the equator ahead of the Canadian-built ship and, steering a more westerly course than her rival, lost the wind. The *Mermaid* reached the latitude of the Cape five days ahead of the *Red Jacket*, which was held back by light and variable winds, while the *Mermaid* had been benefiting by stronger and favorable winds. It was reported that on June 15 she was actually 1,397 miles ahead of the *Red Jacket*, but after passing the Cape of Good Hope on June 24, the Maine-built ship got some wind. On the 26th, running far south in the depth of winter, she experienced intense cold, but felt the benefit of the westerlies. The log from June 26 to July 12 shows remarkable sailing over a course that went as far south as Lat. 52° and was south of 48° for eleven days:

| Date 1854 | Latitude South | Longitude East | Distance | Weather |
|-----------|----------------|----------------|----------|--|
| June 26 | 48-06 | 34-44 | 315 | Var. and stiff rain and sleet. |
| June 27 | 50-06 | 42-19 | 330 | Wind N.W., fresh and squally with hail, very cold weather. |
| June 28 | 50-54 | 49-16 | 263 | Wind W.N.W., squalls with hail showers. |
| June 29 | 50-34 | 56-34 | 286 | Wind N.N.W., squalls, entire fore part of ship covered with ice. |
| June 30 | 52-03 | 63-50 | 287 | Wind N.N.W., fresh with hail squalls; very cold, air 19°. |
| July 1 | 51-39 | 71-21 | 286 | Wind N.N.W., fresh, with hail squalls, latter part light, air 19°. |
| July 2 | 50-29 | 72-26 | | Wind S.W., first part calm, latter part heavy gales and heavy sea. |
| July 3 | 50-12 | 80-30 | 312 | Wind W.S.W., first part heavy gales, latter part fresh breezes, high sea, freezing. |
| July 4 | 49-25 | 88-30 | 300 | Wind variable, fresh gales and heavy sea, freezing, rain and sleet. |
| July 5 | 49-13 | 95-00 | 288 | Wind N.N.W., first part light and heavy rain, latter stiff, with heavy squalls. |
| July 6 | 48-38 | 104-15 | 400 | Wind W.N.W., strong gales and squalls, heavy sea. |
| July 7 | 47-25 | 112-44 | 299 | Wind variable in strength and direction. |
| July 8 | 46-38 | 119-44 | 350 | Wind N.N.W., stiff and squalls, with rain. |
| July 9 | 45-09 | 129-18 | 357 | Wind N.N.W., strong and squally, with rain. |
| July 10 | 42-42 | 134-38 | 334 | Wind N.N.W., fine weather. |
| July 11 | 40-36 | 139-35 | 245 | Wind N.W., heavy squalls and rain. |
| July 12 | | | 300 | Wind N.N.W., fine weather. Made King's Island at 10.50 p.m., crossed bar at 11.50 p.m. |

For the greater part of a week "the weather was so cold that the ship was put down by the head by the frozen spindrift, which covered her to the mainmast in an icy mantle." This run of the *Red Jacket* for seventeen consecutive days, during the bitterly cold midwinter weather, in the Roaring Forties and fifties in the Southern Hemisphere has been said to be "the finest bit of sailing of any clipper ship at any time and in any waters"; moreover, as on her record-breaking passage on the North Atlantic, the superior quality of design and construction of the Pook-designed and Maine-built ship was emphatically demonstrated in the "terrific," strong gales and heavy seas encountered. The *Red Jacket* lost no spars, shipped no seas, and suffered no damage during her ordeals in the severe winter weather in either the North Atlantic or the South Pacific when she was making sailing history and showing amazing performances that have never been equaled by any vessel propelled by canvas. On her run in the Southern Hemisphere, the *Red Jacket* covered 400 miles in twenty-four hours ($16\frac{2}{3}$ knots per hour) and traveled 1,740 miles in five days—an average of 348 miles per day and $14\frac{1}{2}$ knots per hour. This practically equaled her record sailing on her maiden voyage on the North Atlantic, when she covered 1,783 miles in the same period of time—an average of $356\frac{1}{2}$ miles per day and $14\frac{7}{8}$ knots per hour. On the day ending at noon on July 6, the log at times showed a speed "in excess of 18 knots per hr.," and for fifteen days the average daily speed did not fall below 10 knots per hour.

On her return passage, the *Red Jacket* did some magnificent sailing in the Southern Hemisphere, and although handicapped and seriously delayed by solid field ice and icebergs for four days (August 24-27) off Cape Horn, the ship made a phenomenal run of 41 days to the equator, crossing the line on September 13 and having sailed 10,423 nautical miles from Melbourne to this point—an average of 254 miles per day and 10.6 knots per hour. Outbound, she had sailed from the Atlantic equator to Melbourne around the Cape of Good Hope in 44 days, thus making the complete run from the equator eastbound to Australia and back to the Atlantic equator in 85 days. However, it is said, "The *Red Jacket* actually circumnavigated the globe in 62 days 22 hours between June 11 and September 2, 1854, running 15,991 miles in that time and averaging 254 miles per day and 10.6 kts. per hr.—a record." The British composite clipper bark *Berean*, launched by Pile, of Sunderland, in August 1869 for the Australian and Tasmanian trade and noted for her speed, consistently good passages, and good luck, boasted of her time in sailing around the world traveling east from 30° S. and 20° W. in the Atlantic and back again. She is said to have had a yearly average of from 80 to 85 days, and her fastest circle of the globe was 76 days. In comparison, the around-the-world sailing performance of the *Red Jacket* in less than 63 days is significant, and on her maiden voyage she ran from line to line in the Atlantic in 84 days under sail.

When the *Red Jacket* sailed from Melbourne August 3, 1854, on her homeward passage, she was "badly laden and in poor trim, being too light, with cargo poorly stowed, and the ship very much down by the stern." Captain Reid declared, "This vessel, as laden, is in no condition to carry sail and show the speed of which she is capable, but I will do the best I can with her, but such lading can be expected to lengthen her run home anywhere from five to ten days." Notwithstanding this handicap, the *Red Jacket* ran from Melbourne to Cape Horn in 20 days, "constantly logging 17 or 18 knots in fresh breezes and 14 or 15 knots when close-hauled," and "only once did she ship any water." No damage was sustained on the entire run home "to spars, hull or gear." The record of the first six weeks' sailing of the *Red Jacket* on her run from Melbourne to a point one day's sailing north of the Atlantic equator is stated herewith:

| Week | Distance Traveled | Average Mileage per Day | Average Speed Knots per Hour | Week | Distance Traveled | Average Mileage per Day | Average Speed Knots per Hour |
|--------|-------------------|-------------------------|------------------------------|--------|-------------------|-------------------------|------------------------------|
| First | 1,625 | 232 | 9.7 | Fourth | 1,440 | 206 | 8.6 |
| Second | 2,158 | 308 | 12.8 | Fifth | 1,665 | 238 | 9.9 |
| Third | 1,785 | 255 | 10.6 | Sixth | 1,570 | 224 | 9.3 |

During the first three weeks, on the run to Cape Horn in the Roaring Forties, the *Red Jacket* covered 5,568 miles and averaged over 265 miles per day and 11 knots per hour. Rounding the Horn and running north in the South Atlantic during the second three weeks (to a point one day's sailing north of the equator), the ship covered 4,675 miles and averaged 223 miles per day and 9.3 knots per hour. The total distance traveled during six weeks of steady sailing, under all sorts of weather conditions, was 10,243 miles—an average of 244 miles per day for forty-two consecutive days and an average speed for the period of 10.2 knots per hour. The best day's run of the *Red Jacket* in the South Pacific running to the Horn was 376 miles, an average of $15\frac{2}{3}$ knots per hour, but during one watch she covered 70 miles at the rate of $17\frac{1}{2}$ knots per hour.

In the vicinity of Cape Horn, the *Red Jacket* encountered a good deal of heavy ice and had to shorten sail and dodge the bergs and floes. As night approached on October 24, the ship was compelled to put about and furl sail for the night; for two days progress was retarded by day, and the ship did no sailing in the dark. The big clipper was virtually imprisoned in the ice for three whole days, keeping clear of bergs and grinding through floes. Considering the delay caused by ice off Cape Horn, the run of the *Red Jacket* from Melbourne to the Atlantic equator was a remarkable bit of sailing, and hopes ran high of making a great record passage home. However, north of the equator the ship "had nothing but calms and light head winds, which drove her across into 43° W.," and she took $31\frac{1}{2}$ days from the line to Liverpool. (Outbound, she had covered the distance in 25 days under unfavorable sailing conditions and under good conditions could have been expected to make the run between the points in about 20 days.) The *Red Jacket* reached Liverpool on October 15, on the 73rd day out from Melbourne, after a passage of $72\frac{1}{2}$ days. Lubbock, the English historian, writes: "This was considered an extraordinary performance, when allowance was made for the light weather experienced after crossing the line. During one whole week in the doldrums, she averaged under 100 miles per day, and the two following weeks she averaged only 142 and 106 miles, respectively." To this could be added that the light winds were generally head winds and that, furthermore, the ship was held back three days by ice in the South Atlantic off Cape Horn. After averaging 244 miles per day and 10.2 knots per hour for six consecutive weeks in the South Pacific and South Atlantic, the *Red Jacket*, because of unfavorable sailing conditions, covered only 2,414 miles for three consecutive weeks in the North Atlantic and averaged for this period only 105 miles per day and less than 4.4 knots per hour. On the return passage of her maiden colonial voyage, the ship ran 14,863 miles at an average speed of over $8\frac{1}{2}$ knots per hour; she covered on an average 205 miles per day. The *Red Jacket* made a fine record in completing a round voyage between Liverpool and Melbourne of 5 months 10 days $22\frac{1}{2}$ hours, including detention in port. At sea, it is said, "she averaged 203 nautical miles per day for the entire voyage—out and back—an average speed of 8.46 knots per hour."

On the homeward run, the *Lightning*, leaving Melbourne August 20, 1854, was much more fortunate than the *Red Jacket*, for she experienced strong, favorable westerly and southwesterly winds all the way from Melbourne to Cape Horn, which she rounded on the 20th day out, and was not held back off the Cape (or elsewhere) by ice. For two days (September 13 and 14) in the South Atlantic, she had strong southerly winds and averaged $352\frac{1}{2}$ miles per day and 14.7 knots per hour over a part of the course where the *Red Jacket* had encountered "light breezes" and poor sailing conditions. The *Lightning* passed the equator September 30 in the splendid time of 41 days from Melbourne, but her round voyage from the Atlantic equator to Melbourne and return had required 94 days as against only 85 days for the *Red Jacket*. Capt. "Bully" Forbes, chagrined at being so badly beaten by the *Red Jacket* on the outbound passage, was evidently determined to get his revenge on the homeward run, and luck was with him. However, whereas wonderfully favored by the elements and by unusually good, maintained sailing conditions, Captain Forbes was taking no chances, but drove the *Lightning* relentlessly for twenty-four hours a day and arrived at

Liverpool October 23, 1854, after a marvelous, fast run claimed as "63 days, pilot to pilot, and 64 days 3 hours, port to port." Lubbock writes of this passage: "Forbes carried on in the most daring manner, and on the *Lightning's* arrival at Liverpool the passengers told weird stories of Bully Forbes' keeping his station at the break of the poop with a pistol in each hand in order to prevent his scared crew from letting go the royal halliards." On the run eastward from Australia to the Cape, the *Lightning* (on August 28) lost her fore-topmast stunsail boom; this was quickly followed by the loss of the fore-topmast, which went over the side, and "the foreroyal, fore-topgallant sail and fore-topsail were blown out of the bolt ropes."

It was north of the equator that the *Lightning* was favored by sailing conditions in comparison with those of the *Red Jacket* on their maiden homeward runs from Australia in 1854 as the following record shows:

| Name of Clipper | Date of Crossing Atlantic Equator | Date of Arrival Liverpool | Elapsed Time Days |
|-----------------|--------------------------------------|------------------------------|----------------------|
| RED JACKET | Sept. 13 | Oct. 15 | 32 |
| LIGHTNING | Sept. 30 | Oct. 23 | 23 |

This difference of 9 days (said to be 8 days 15 hours) added to some 3 days' detention in ice off Cape Horn accounts for the fact that the *Lightning* made her complete homeward run in some 8 days 8 hours shorter time than the *Red Jacket*, which was the better ship of the two American-built clippers.

The round voyage of the *Red Jacket*, notwithstanding the unfavorable weather encountered north of the equator and a three-day delay in the ice off Cape Horn, occupied 141½ days and that of the *Lightning* 142 days—when driven to the limit by Capt. "Bully" Forbes. The command and owners of the *Lightning* claimed a record round voyage for that vessel, port to port, of "5 months 8 days and 21 hours" (recorded as 162 days), and the *Red Jacket's* time as given by historians is said to have been 5 months 10 days and 22½ hours (recorded as 163½ days), but the *Lightning* was at Melbourne only twenty days whereas the *Red Jacket* was held in port twenty-two days.

Capt. Arthur H. Clark, in *THE CLIPPER SHIP ERA*, says that the *Red Jacket* made the round voyage from England to Australia, around the globe, in 5 months 4 days in 1854 and on her homeward passage carried 45,000 ounces of gold and beat the fast clipper *Guiding Star* by nine days notwithstanding that she lost considerable time among field ice and icebergs off Cape Horn. Howe and Matthews, in *AMERICAN CLIPPER SHIPS*, write that the maiden Britain-Australia voyage of the *Red Jacket* "excited considerable interest not only for its unprecedented rapidity but also on account of the dangerous position in which the vessel was placed in the ice off Cape Horn, when homeward bound, and the *London News* published some views showing her entirely surrounded with field ice; many icebergs were also met with." On this passage, the *Red Jacket* carried gold dust "to the value of about £208,044 sterling"—approximately a million dollars.

Another record "never equalled, much less surpassed," made by the *Red Jacket* on her maiden round voyage in the Australian trade was a run from the Cape of Good Hope to Cape Horn via Melbourne in 39 sailing days. This winter passage from about Long. 18° E. to 67° W., in the Roaring Forties of the Southern Hemisphere (about seventy-seven per cent around the globe at that latitude), would probably have been made in about 37 sailing days if the stop at Melbourne had not been required and a complete circular course had been sailed between the world's two greatest capes—or the southern tips of Africa and South America.

George Francis Train, of Boston, Mass., acting as agent for the British "White Star Line" and for Duncan, Sherman & Company, of London and New York, and a representative of the Boston underwriters, had trouble—according to his memoirs—in getting the *Red Jacket* out of Melbourne in August 1854. Captain Reid had been unwarrantedly arrested at

the instance of one of the passengers, and the ship was libeled on account of the claim. Captain Reid, ashore and evidently in hiding, was not available to sign the bills of lading, which included one for the million dollars worth of gold put aboard. Train signed the bills "for the captain" and shocked the British by doing so. This was followed promptly by the sailing of the ship. Train writes:

The *Red Jacket* was the fastest clipper that had visited Melbourne, and it occurred to these [Melbourne] bankers that I was going to run off with this gold and become a Captain Kidd or a buccaneering Morgan. They grounded their fears upon the facts that my wife was aboard; that Captain Caldwell, my partner and friend, was also a passenger, and they believed that Captain Reid was on board, although under arrest. To suspicious bankers, here

was a really strong case against me. In the meantime the *Red Jacket*, with her trim sails bellied with the wind and sweeping along in a way of her own that nothing in the South Seas could imitate or approach, was passing down Hobson's Bay. The Government and the Melbourne authorities despatched two men-of-war after her. There was no possibility of her being overhauled by these craft.

The *Red Jacket* made for Point Nepean, where the sheriffs aboard from Melbourne, who wrongly thought that Captain Reid was on the ship, were put on a tug and taken back to Melbourne; they could not act for the Australian authorities at sea under the Stars and Stripes. A little later, the yacht *Flying Eagle*, in harmony with a prearranged plan, came alongside the *Red Jacket* and placed Captain Reid aboard his ship "just outside the jurisdiction of Australia." The American clipper showed her clean heels to all pursuit. Evidently, both the bankers and the colonial authorities were worried until it was learned that the *Red Jacket* had made "a great run to England and landed the million dollars of gold in Liverpool without the loss of a farthing." Train says that he was heartily congratulated on the outcome of his initiative, "although the British spirit never forgave the taking of matters into my own hands and making the best of a bad situation; their conservatism had received a bad shock."

At the completion of the first voyage of the *Red Jacket* from Britain to Australia and return, the ship, on her record of sailing during this voyage and her transatlantic passage from New York to Liverpool, was declared by a British authority to be "the handsomest of all American clippers and the fastest ship that has sailed under our flag." Upon arrival at Liverpool, the *Red Jacket* was purchased by the firm of Pilkington & Wilson for continued operation in its "White Star Line" of Australian passenger ships, the reported price paid being the good sum of thirty thousand pounds sterling. We read of her many years later: "The *Red Jacket* was always a favorite with the travelling public, and she was the handsomest as well as the fastest ship in the British merchant service."

In 1855 the *Red Jacket* demonstrated her superiority to all other clippers—American-, Canadian-, and British-built—in their outward passages from England to Australia. The following records the sailing performances of the most prominent and fastest vessels in this service with sailings from June to September inclusive and arrivals from August to December:

| Name of Ship | Builder | Sailing Date | Arrival Date | Passage in Days |
|----------------------|---------------------------------|--------------|--------------|-----------------|
| RED JACKET | Geo. Thomas, Rockland, Maine | Sept. 20 | Dec. 4 | 75 |
| INVINCIBLE | W. H. Webb, New York | Sept. 30 | Dec. 18 | 79 |
| JAMES BAINES | D. McKay, East Boston | Aug. 5 | Oct. 23 | 79 |
| LIGHTNING | D. McKay, East Boston | Sept. 5 | Nov. 25 | 81 |
| DONALD McKAY | D. McKay, East Boston | June 6 | Aug. 26 | 81 |
| CHAMPION OF THE SEAS | D. McKay, East Boston | July 5 | Sept. 26 | 83 |
| EMMA | Britain | Aug. 21 | Nov. 17 | 88 |
| SHALIMAR | Canada | July 20 | Oct. 16 | 88 |

On this passage, the *Red Jacket* made another speed record that has never been equaled. After her usual bad luck with light and contrary winds in the North Atlantic and calms in the doldrums and after requiring 31 days to reach the equator, the Maine-built clipper crossed the line on October 21, 1855, and reached Melbourne on December 4—a run from the equator to the Australian port of destination in the unprecedented time of 44 days.

Captain Milward was in command of the *Red Jacket* on this voyage, and it will be noted that on the outbound run to Melbourne she beat four of Donald McKay's crack new clippers—*James Baines* (2,515 tons) by four days, *Lightning* (2,083 tons) by six days, *Donald McKay* (2,614 tons) by six days, and *Champion of the Seas* (2,447 tons) by eight days. Returning to Britain, the *Red Jacket*, *James Baines*, *Lightning*, and *Donald McKay* all made the passage in 85-86 days, with the run home of McKay's *Champion of the Seas* taking 90 days.

At this time, Capt. "Bully" Forbes was no longer the skipper of the *Lightning*. After one round voyage in that American-built ship, as commodore of the English Black Ball Line he was assigned to the command of the big, new but ill-fated British clipper *Schomberg*, built by Hall, of Aberdeen, which was designed on order of James Baines & Company and its British colonial Black Ball Line to be "equal in size and superior in quality and speed to any American-built ship in the Australian trade." From the start of her maiden voyage to her destruction (before she completed an initial outward passage from Liverpool to Melbourne), the *Schomberg* was "a miserable failure," an unquestioned deflator of British egoism, and such a shock and humiliation to Captain Forbes that he went berserk, lost all semblance of mental equilibrium, and emerged from the ordeal a disgraced and broken man.

The *Red Jacket* continued in the Australian service as a British colonial clipper packet until the decline in passenger traffic on sailing ships caused her owners to send her on voyages to Indian and other ports. Although her spars and canvas were cut down and the number of crew greatly reduced in the early sixties, the ship continued to make fast passages. In 1865 she was running to Calcutta and in 1868 is listed as owned by Wilson & Chambers, of Liverpool. Shortly afterwards, the ship was sold and went into the transatlantic timber trade between Quebec and London. In 1871 she figured in a collision in the Downs, suffering minor injuries to her headgear, and in 1878 she ran into the *Eliza Walker* and sent her to the bottom without material damage to herself. She saved the entire crew of the sunken vessel.

The *Red Jacket* was not—as the British popularly supposed—named after the garb of a British soldier, the traditional Tommy Atkins, but was named after the American Indian chief of the Wolf clan of the Seneca, by name Sagoyewatha (meaning "he who keeps them awake"), who, during the time of the American Revolution, wore a brilliant red jacket that he had obtained from a British officer.

*James Baines, of Liverpool, Founder of the Black Ball Line of British-
Australian Packets, a Patron of Donald McKay, 1853-1855,
and an Admirer of Big American Clippers*

James Baines, the head of the firm of James Baines & Company, was generally acknowledged to be "a man of foresight, enterprise and courage," with "an uncanny sense of feeling for a ship." He was the founder of the British Black Ball Line, said to have been "the most celebrated line of passenger ships" in its heyday, when it was operating with American-built

ships and copying, with success, American methods of management—afloat and ashore. James Baines's success was meteoric, but it was of short duration. He was practically unknown in 1850, and by 1860, after a few brief years of "unprecedented prosperity," his star began to set. The statement has been made that Baines's "connection with McKay and his use of big American wooden ships that were short-lived and too expensive to operate caused his undoing." This is obviously ridiculous, for the ships built by McKay for Baines were all launched during the period from January 1854 to January 1855, and we are told that "to the end of the fifties Baines flourished exceedingly." Moreover, the loss by fire of the *James Baines* in 1858 was covered by insurance, and the total remaining ships produced by Donald McKay for James Baines & Company—five in all—represented only 5.8 per cent of the total number of bottoms that are said to have been operating under the Black Ball Line flag in 1860, which year marks the end of the clipper ship decade and the threshold of the American Civil War. Undoubtedly, James Baines made a lot of money with his wood sailing ships throughout the fifties, but like several other leading shipowners he was tempted to go into steam and, as the British say, invest in "steam kettles." He amalgamated with Gibbs, Bright & Company, which had already deserted sail for what was known as "auxiliary steam" and had started a service to Australia with the ill-fated *Royal Charter* and the equally well-known *Great Britain*. The packets and steamers of the combine provided a service to Australia from Liverpool with two sailings a month.

It has been said that all Baines's ventures into the realm of steam were unfortunate and that he persisted in the acquiring and use of wooden vessels when his rivals were building and operating iron ships. The investments made in the field of building and operating full-rigged ships with auxiliary steam power proved unprofitable. It was said by a contemporary, "For every pound that the Baines firm make with sail, they lose three with their combination steam and sail." Later historians wrote that it was "doubtful if the Black Ball and Gibbs, Bright & Company amalgamation proved a success financially because of the losses sustained in operating the ships equipped with steam power"—to be used intermittently, with the prime dependence for propulsion being on sail. The cause of James Baines's downfall was not the choice of ships or the operation of them (for Baines could have weathered any mistakes made in endeavoring to operate auxiliary steam with success); it came from the failure of Barnard's Bank. Yet, British historians blame the financial collapse of Baines on his preference for, his investments in, and his use of American wood ships—not on the extremely heavy losses sustained when a British institution closed its doors and the bank's depositors lost their money and had their loans called at a most inopportune time.

Basil Lubbock, the British marine writer, in his historical sketch of James Baines written in 1920 for his work *THE COLONIAL CLIPPERS*, says that as a young man Baines had the courage of his convictions and that his big McKay-built clippers "really made the reputation of the Black Ball Line." We are also told of Baines:

Of an eager, generous disposition, his hand was ever in his pocket for those in trouble; and he was far from being the cool, hard-headed type of business man. He was as open as the day and hail-fellow-well-met with everybody; nevertheless, his

farsightedness and his eager driving power carried him to the top in so phenomenally short a time that his career has become a sort of romantic legend in Liverpool.

James Baines, with all these admirable qualities, was deemed to be too pro-United States by the "powers-that-be" in England, and he was never knighted as he undoubtedly would have been had he made his wonderful record of the fifties with British-built ships. The last days of this brilliant man, following the collapse of a British banking institution and caused by conditions over which he had no control, were pathetic. "Poor old James Baines, for some years before his death, had to depend for his subsistence on the charity of his friends. Indeed, he was absolutely penniless when he died of dropsy on 8th March 1889 in a common Liverpool lodging house. He was only 66 years of age at his death. Yet it will be a very long time before he and his celebrated ships are forgotten in Liverpool." Lubbock,

while admitting that the failure of Barnard's Bank and unsuccessful investments in steam were the principal causes for the overthrow of Britain's greatest shipowner of the fifties, in true British fashion gets in this dig at American-built wood ships:

It must be remembered that his [Baines's] soft-wood ships, many of which were old Yankee clippers already past their prime when he bought them, were becoming more and more strained and water-soaked, with the result that his repair bill was ever on the increase, and this just when other firms were building iron ships on purpose to compete with his wooden ones.

Evidently, Lubbock and other British writers on marine history brand all ships not built with English oak or Indian teak planking as "softwood" vessels, and the term is used deprecatingly in an attempt to place them definitely as of inferior, cheap, and short-lived construction. How a vessel built in America with oak framing and timbers and hard pine planking could with any degree of accuracy or fairness be termed a "softwood" ship is not only difficult but also impossible for an American to understand. Moreover, it would seem that a ship built in America with an oak frame, the best of hardwood knees and timbers, and superior hard pine planking, ceiling and decking was, according to the British, a "softwood" ship even if no softwood was used in her hull construction; whereas a vessel built in Britain of the same materials—of either similar or inferior quality—was classed as a first-class ship without the onus of "softwood" being applied to denote inferiority to all oak construction, which Britain sought to use in the building of warships, but did not use generally in the production of sizable merchant vessels after the forties. However, such British merchantmen in the London-Australia trade as the *Norfolk* and *Lincolnshire* (built and owned by Money Wigram & Sons) and the *Kent*, *Trafalgar*, and *Renown* (built and owned by R. & H. Green) were constructed of "teak, oak and elm, copper-fastened and sheathed with red copper." These ships carried the old British East Indiaman tradition and resembled frigates more than merchantmen; they were much smaller and slower than American clippers, and Britishers generally asserted that "much of the speed of American ships in the Australian service is due to their greater tonnage." For longevity in maintained sea service on the world's most severe trade routes (westbound Cape Horn and westbound North Atlantic), there is no record of British construction, wood or iron, equaling that of American wood ships, and United States-built clippers and packets were declared to have sound hulls and to be in first-class physical condition after thirty years of regular service in bucking the gales and tremendous seas off the Horn or in fighting the westerlies in the Atlantic "ferry."

Many American wood ships have seen service at sea for an incredible number of years. The *Truelove*, built at Philadelphia in 1764, was first a merchantman, then a privateer, following which (when 20 years old) she became a successful British whaler for eighty-four years. Reverting to general trade when 104 years old, she was operated for six years, during which she crossed the Atlantic at least twice, and was broken up by her English owners in 1874, when 110 years old. The American whaler *Charles W. Morgan*, built in 1841, is a marine exhibit at Mystic, Conn., having been towed to her present berth in 1941, when just a century old. The *Rousseau* and *Triton* were venerable American whalers, the former seeing ninety-seven years and the latter seventy-nine years of service on the Seven Seas. The New Bedford whaler *James Arnold*, built in 1852, after forty-two years' service in hunting whales under the American flag, was sold in 1894 to the Chileans and was known to have been operating at sea with profit to her owners in 1925, when 73 years old, and she probably continued to do so for many years. The American wood ship *Maria* was operating as a deep-sea whaler in 1872, when 90 years old, the *Pacific I*, an old North Atlantic packet, was sunk by an accident when 75 years of age, and the old transatlantic packet *Desdemona* was still registered as a New Bedford whaler when 72 years old. The clipper *Syren*, built in 1851, was operating under canvas when 70 years old, and the Yankee clipper *Dashing Wave*, built in 1853, when surveyed in 1920 after sixty-seven years of steady, severe ocean service, was found to have a hull "in first-class condition from stem to stern." Another American-built wood clipper, the *Simoon*, built in 1852, was being pounded in the turbulent North

Atlantic trade as the Norwegian bark *Hovding* when 60 years old, and several American wood clippers and packets were still in service when they were around half a century old.

Lubbock refers to American-built wood vessels as "soft-wood ships," but it is interesting to note that in writing of the British-built pioneer real clippers, the *Stornoway* and *Chrysolite*, which were constructed by Alexander Hall, of Aberdeen, in 1850 and 1851, respectively, and described as "hard-wood ships" (supposedly superior in construction to any American wood merchant vessels), Lubbock says that in the late fifties and when only a few years old, "with new captains and water-soaked hulls, the careers of the first British clippers, *Stornoway* and *Chrysolite*, were about over." It would seem that Lubbock, in writing disparagingly of the life of American ships is, in fact, denouncing all wood ship construction, both British and American, and indirectly boosting either British iron or composite ships, provided the composite ships were "planked with imperishable Indian teak and coppered."

Whereas James Baines gave Donald McKay no more contracts for the building of ships after the autumn of 1854 and his biggest clipper, the *Donald McKay*, named in honor of the East Boston shipbuilder and launched in January 1855, was the last of the clippers built in the United States for the Australian packet service or for any British owners, the termination of business relations between James Baines and Donald McKay was evidently not due to dissatisfaction on the part of the Black Ball Line management with McKay and his ships—as it was rumored in England—but to political and economic pressure exerted in Britain, which under the guise of "patriotism" made it unwise and unprofitable for any British shipowner to patronize United States shipbuilders. That James Baines was not only satisfied but also pleased with the six vessels that he ordered or bought on the stocks from Donald McKay, within the period of a year, is evidenced by the fact that Baines later wrote McKay after all the ships were engaged in service: "In these ships you have given us all and more than we expected."

Later, the British policy changed somewhat in regard to United States-built ships, and it was argued openly by British shipowners that, as Britain could not compete with America in the building of wooden ships, it would be better for Britishers to own and operate American ships and, by so doing, keep the trade British rather than see the cream of ocean commerce falling more and more into the hands of the United States. During the panic of 1857, several British shipowners moved boldly "to pick up fine American clippers at very cheap, distress prices," and the British Government was sympathetic toward the move. Later, the British saw in the disunity of the North and the South, which culminated in the American Civil War of 1861-1865, a great chance to wreck the powerful United States merchant marine—built, owned, and operated almost entirely by the North, or Union States. They, therefore, continued to acquire the best of the United States-built large wood clippers that came on the market during a very turbulent and uncertain period in American history, when United States shipowners had more ships than they could carry and operate at a profit; moreover, during the war, the British supported the South and put the resources of the vast British Empire behind the Confederacy, with the selfish intent of weakening the young but great American republic and of ruining the shipping of the North—which, in the forties, had successfully challenged the supremacy of the British on the Seven Seas and, during the clipper ship era of the 1850's, had made the United States the unquestioned commercial Mistress of the Seas. While the British were "gobbling up" the cream of the American floating wood tonnage, they were also demanding that British ships be built of iron and not of wood and preaching the doctrine that the future of Britain depended on the successful development of iron and steam for service on the trade routes of the world.

The following record regarding the life of certain famous American-built wood clippers that participated in the British-Australian trade is of interest:

Lightning—Burned at Melbourne, Australia, October 31, 1869, after fifteen years of splendid service.

Champion of the Seas—Lost off Cape Horn January 3, 1876, when twenty-two years old.

- James Baines*—Lost by fire at Liverpool dock, England, April 22, 1859, after five years of service. Hull used later as a landing stage.
- Donald McKay*—After many successful years in Australian service, was used in the Quebec lumber trade. When very old, was taken to Madeira and later to Bremerhaven, Germany, and used as a barge.
- Sovereign of the Seas*—Sold to Hamburg owners in 1854 and, when seven years old, was wrecked (through no fault of the ship) in Straits of Malacca on August 8, 1859.
- Flying Cloud*—Destroyed by fire after having been wrecked near St. John, Canada, in June 1875, when twenty-four years old.
- Invincible*—Burned at New York in 1867, after sixteen years of service.
- Comet* (renamed *Fiery Star*)—Burned at sea in 1865, when fifteen years old.
- Tornado*—Burned at New Orleans, La., after twenty-three years of service.
- Wizard* (renamed *Queen of the Colonies*)—Wrecked, through no fault of the ship, when twenty-one years old.
- Empress of the Seas*—Burned at Port Phillip, Australia, December 19, 1861, after eight years of service.
- Chariot of Fame*—Disappeared from lists in 1874, when twenty-one years old. End not known.
- Red Jacket*—Sold to British in 1855. Ended her days "at a ripe old age" in Quebec lumber trade.
- Blue Jacket*—Burned off Falkland Islands in 1869, when fifteen years old.
- Ocean Telegraph* (renamed *Light Brigade*)—Made into a coal barge at Gibraltar in 1883, when twenty-nine years old.
- Sierra Nevada* (renamed *Royal Dane*)—Wrecked (through no fault of the ship) on coast of Chile in 1877, when twenty-three years old.

These sixteen leading United States-built clipper ships that engaged in the British-Australian trade—eleven at sometime or other under the flag of the Black Ball Line (Liverpool to Melbourne), four under the White Star Line, and one under the Fox Line—are not especially selected vessels, but happen to be the American clippers engaged in the Australian run whose end is definitely a matter of record or whose career is known over a term of years. Six of these ships, or 37.5 per cent, were burned while in port (one after being wrecked on a bar off port), and this after they had averaged fifteen years of sea service; two, or 12.5 per cent, were burned at sea, making eight vessels of the group, or 50 per cent, destroyed by fire. Four of the clippers, or 25 per cent, were wrecked while engaged in trade, and this after an average of eighteen and a half years' sea service, through no fault of the ship and through no developed weakness of any kind. Three of the ships are known to have been in useful service at a ripe old age; i.e., twenty-five years and over. One disappeared from the lists after twenty-one years of known service, but the end, or final age, is unknown, and the only one of the clippers that was lost at sea (actual cause unknown) disappeared after twenty-two years of sea service. Notwithstanding the loss of half of these ships by fire, the average life of all of the sixteen in clipper ship service (ignoring the time that two of the ships were used as barges) was about eighteen and a half years. The *Flying Cloud* was deliberately burned for her copper and metals after being wrecked on Beacon Island bar through faulty navigation and due to no fault of the ship. Many of the destructive fires were caused by spontaneous combustion, and the wool cargoes as carried by the American-built clipper ships engaged in the Australian trade in the fifties and sixties were handled most ignorantly by British stevedores and ship operators. Evidently, the hazard of stowing damp wool in a vessel was either unknown or ignored. Some of the fires were positively of incendiary origin and reflect the lawlessness and belligerency of the crews. That the ships were built of wood was not the cause of the large number lost by fire, for iron ships have been destroyed about as readily as wood ships under the same conditions of fires originating in the cargoes. This record positively and conclusively repudiates the frequently mentioned British statement that American clippers generally, but with special reference to those that were engaged in the Australian service and other British runs, being "softwood" ships (which false statement is vigorously denied), became "strained, with mounting repair bills," were "water-soaked, heavy sailers," and had "a short sea life." It was the size of the American clippers and general trade conditions that put them in the Australian service in the first place and that later forced them to drop out of it as time caused changes in the

nature and amount of cargo to be handled and passengers to be carried and as British prejudice against American or any foreign ships developed to the point of fanaticism.

The British Government and public—and, of course, British shipbuilders—never took graciously to the building of ships in America, particularly in the United States. During the days of the Australian gold boom, British shipowners were virtually compelled to charter and buy "Yankee" clippers and change their registry from American to British if they were to continue in business. In 1852 many of the Blackwall frigates, built for and operating in the London-India trade, were diverted to the Australian run, and as a result the frigate-clipper type of sailer was developed by the British for that service, but such ships were never competitive prior to the Civil War with either the United States- or Canadian-built wood clippers.

*The United States-built Clippers OCEAN CHIEF and BLUE JACKET, Bought
When New for the British-Australian Packet Trade*

The United States-built, Pook-designed fast clipper *Ocean Chief*, bought by James Baines & Company soon after her launching at the J. & C. Morton yard, Thomaston, Maine, in 1854 for a reported \$85,000 (about \$70 a ton), was described—as was the Pook-designed and Maine-built *Red Jacket*—as "a handsome ship and much more beautiful than the vessels built by Donald McKay." The *Ocean Chief* was a moderate-sized ship, but "on the small side for her day" and measured 1,228 tons, being 190 ft. long, 39 ft. beam, and 23 ft. deep. She was only 53 per cent of the tonnage of the *Red Jacket*, but like all the clippers that came from the board of Samuel H. Pook, the young naval architect of Boston, she was a fast ship and an excellent sea boat. On her first passage out to Australia, the *Ocean Chief* ran from Liverpool to Hobart Town in 72 days—the fastest passage on record to that time; returning, she was 84 days from Sydney (June 3) to Liverpool (August 26, 1855). The next two voyages included outward passages of 80 and 75 days, respectively, from Liverpool to Melbourne. The clipper maintained a consistently good sailing record until she was destroyed when in port by fire—evidently of incendiary origin—at Bluff Harbor, New Zealand.

The *Blue Jacket*, built by Robert E. Jackson at East Boston and launched August 27, 1854, was not an extreme clipper, and although she had a good model for speed, she was not as sharp as the "out-and-out" clippers of 1851-1853. She was described by contemporary authorities as "a fine-looking powerful ship with a model that should prove fast, carry well and make a good sea boat; she has a half poop deck, double topsails on fore and main, and does not cross skysail yards." The clipper was of 1,790 tons register and was 235 ft. long (over-all of hull proper), with a keel 205 ft. long and a beam of 41 ft. 2 in.; the depth of hold was 24 ft. and the stated load draft 22 ft. Built for Seccomb & Taylor, of Boston, "on spec," the ship was sent to England and promptly sold to John James Frost, of London, for his Fox Line of Australian packets. He outbid Pilkington and Wilson, who wanted the clipper to run as a mate with the *Red Jacket* in their White Star Line of Liverpool-Melbourne packets. (Several years later, the White Star Line obtained possession of the vessel.)

The *Blue Jacket* was described by the British as resembling generally the ships built by Donald McKay. She was not a "handsome marine spectacle" such as the *Red Jacket* and *Ocean Chief*, built in Down East shipyards from designs by the talented Samuel H. Pook. Lubbock says that the American ships (built in the United States and Canada) that were in the British-Australian trade in 1853-1855, other than such vessels as the Pook ships and

Webb's *Invincible*, "had more the appearance of strength and power than of grace and beauty"; he refers, however, to the Pook-designed ships as being exceptional and admits that "the famous *Red Jacket*," notwithstanding her size, strength and power, was "an extremely taking ship to the eye." Lubbock describes the *Blue Jacket* as a clipper "of the powerful type designed to stow a large cargo, having a full midship section, but her bow was long and sharp enough." On her initial passage, the *Blue Jacket* (Captain Eldridge) left Boston October 2, 1854, and reached Liverpool on October 20 after a crossing, port to port, of 18 days, but her run from land to land was made in 12 days 10 hours. On her initial outward passage to Melbourne, the ship, under the command of Captain Underwood, made a fast run of 68 days (or 69 days, port to port), beating the times of the maiden voyages of the McKay-built clippers *Sovereign of the Seas*, *Lightning*, *Champion of the Seas*, and *Donald McKay*; i.e., all of the McKay-built clippers excepting the *James Baines*. English historians tell us that the *Blue Jacket* "further distinguished herself at a later date by making the homeward run [Melbourne to London] in 69 days," thus equaling the fast March-May 1855 passage of the *James Baines*. After the first run of the *Blue Jacket* to Australia, the vessel went to Madras, India, loaded for London, and engaged for a while in the Indian trade. After a passage of 92 days from London to Madras, she went to Mauritius, and the press, announcing her arrival at that port, said:

The splendid *Blue Jacket*, now owned in London, arrived yesterday, landing 600 coolies from Madras at three pounds a head. Is now loading for London with sugar at three pounds, ten shillings per ton. The Immigrant Agents prefer American

clippers because they make the shortest voyages and deliver the coolies in better condition than vessels of other nations. The model, finish and build of this vessel, with her cabin arrangements, have completely astonished the people of this island.

In 1865 the *Blue Jacket*, when eleven years old, made a passage from Lyttelton, New Zealand, to the East India docks at London in only 63 days. Capt. Joshua N. Taylor, of Massachusetts, was sailing master during this run under Capt. James White, an Englishman, and in the report of the passage we read:

A heavy south-west gale followed us for several days, and running our easting down, we averaged 20 knots at times with all sails set; at times the patent log even showed 23 knots. These gales carried us until we had passed Cape Horn and hauled up

'norrard, and up to this time we had averaged 384 nautical miles per day, beating all records ever made by a sailing ship up to that time. We crossed the equator on our 42nd day from New Zealand and were in the East India docks on the 63rd day.

This was not a passage whose length was timed to arrival off some port or point in the English Channel, such as Falmouth, Plymouth, Start Point, Portland, Southampton, Portsmouth (the transatlantic packet port for London), or even Deal or the Downs, but covered the entire run under canvas up the English Channel around Kent, up the North Sea, and a considerable distance up the estuary and the River Thames to the city of London. The *Blue Jacket's* claim of a spurt speed of 23 knots per hour, it has been said, "is the all-time record for a sailing vessel." The *James Baines*, on her passage to Melbourne leaving Liverpool April 7, 1856, did some good sailing. On May 8, she covered 404 miles in one day (16.8 knots per hour; maximum, "a scant 20 knots"). The log entry of June 18 reads: "Wind freshening; at 8 p.m. took in all starboard stu'nails; main skysail set; ship taking out 21 knots." This record of 21-knot spurt speed of the *James Baines* seems to have been the maximum officially claimed for any wind-propelled vessel until the *Blue Jacket* reported that "at times the patent log even showed 23 knots."

The *Blue Jacket* was destroyed by fire at sea in March 1869, when homeward bound from New Zealand with a cargo of flax and colonial produce and thirty-two passengers in addition to a crew of thirty-nine aboard. She ran to Cape Horn in 20 days, and when off the Falklands, fire was discovered in the hold. After taking to the boats, all the passengers and crew were rescued by the American-built bark *Pyrmont*, then operating under the German flag.

*United States Builders and Owners of Newly Constructed Clipper
Ships Sell Them to the British in 1853-1854 for the
Australian—or Colonial and Empire—Trade*

Seccomb and Taylor, of Boston, who as shipowners seem also to have built more clipper ships during the shipbuilding boom than they desired to hold and operate, disposed of several of them promptly to other owners while making a good profit for themselves. In addition to selling in December 1852 the newly launched clipper *Winged Racer* (1,767 tons; built by Robert E. Jackson, East Boston) to Sampson & Tappan, Boston, they sold the *Red Jacket* (2,305 tons; built by George Thomas, Rockland, Maine; launched November 2, 1853) and the *Blue Jacket* (1,790 tons; built by Robert E. Jackson, East Boston; launched August 27, 1854) to the British for the White Star (Liverpool) and the Frost "Fox" (London) Australian packet services, respectively. They sold the *Queen of Clippers* (2,361 tons; built by Robert E. Jackson, East Boston; launched March 26, 1853) to Zerega & Company and associates, owners of the New York-Liverpool "Z" Line of transatlantic packets, the stated price being \$135,000. Another clipper ship, the *King Lear*, was ordered by Seccomb & Taylor and built in 1854 by Robert E. Jackson, East Boston. But little is known concerning the trade in which she operated and her sailing performances. This ship was of 1,936 tons; 231 ft. 10 in. long, 42 ft. 2 in. beam, and 29 ft. 3 in. deep. She was placed in the command of Capt. Asa Eldridge, who had brought out the *Red Jacket*, but was promptly sold to London shipowners. Of the six big clippers ordered from New England shipbuilders (all during the years 1852-1854), Seccomb & Taylor sold three to the British, one to Boston and one to New York shipowners, and this firm maintained an operating interest in only one of them—the *Swallow* of 1,435 tons, built by Robert E. Jackson, East Boston, and launched April 4, 1854. The *Swallow* was principally owned by Dugan & Leland, of New York (Seccomb & Taylor maintaining a minority interest), and in her early days she was better known and more often seen in British than United States ports; her maiden voyage, aside from a transatlantic run from New York to London, was as a chartered ship under the British flag in the Australian trade.

The *Mystery* of 1,155 tons (length 185 ft. on deck, beam 37 ft., depth 23 ft.), launched January 11, 1853, by Samuel Hall at East Boston for Crocker & Sturgis and D. C. & W. B. Bacon, Boston, made only one voyage under the American flag and was then sold at London in March 1854 to British shipowners for the sum of £17,000 sterling—a very high price and representing \$71½ per ton U.S.A. register. The *Mystery* was placed in the British-Indian trade, although in 1855 she went from London to Sydney, Australia (92 days from Deal), returning by way of Calcutta. In 1861 the *Mystery* was owned by W. Coltart, of Liverpool, but from 1863 to 1871 she is listed as owned in London by J. M. Walsh.

Two other United States-built clippers constructed in 1853 were rather promptly acquired by British owners, and the change of their names as they were put under British registry is of interest. The *Pride of America*, built on the Kennebec River at Richmond, Maine, was of 1,826 tons (length 213 ft., beam 38 ft., depth 22 ft.); she was sold to the British in March 1854 and renamed *Pride of the Ocean*. Another clipper, built by Daniel Foster, Warren, R. I., for Cady, Aldrich & Reid, Providence, R. I. (1,525 tons; length 197 ft., beam 42 ft., depth 24 ft.), was christened *Pride of the Ocean* when launched, but when she was sold and went under British ownership in April 1854, she could not retain her old name, as another British-owned, United States-built ship had taken it a month before. This Rhode Island-built clipper, therefore, was renamed *Belgravia* by her new English owners.

Two other United States-built clippers were purchased by the Greens, of London, direct from the American shipbuilders. These ships can be described as follows:

| Name of Clipper | Original Captain | Built | Builder | Ton- nage | Dimensions in Feet and Inches | | | Remarks |
|-----------------|-------------------------------|-------|------------------------------|--------------|----------------------------------|------|-------|---|
| | | | | | Length | Beam | Depth | |
| AMPHITRITE | Oliver Eldridge | 1853 | Samuel Hall, East Boston | 1,687 | 206 | 39 | 24 | Boston register gives dimensions as 221' x 40.4' x 26.3'. |
| FATHERLAND | Gardner (packet master) | 1854 | William Hall, East Boston | 1,180 | 194-3 | 38-6 | 23-7 | Renamed SWIFTSURE (Lloyd's Register, 1865). |

The *Amphitrite* was sold in September 1853 to Richard ("Dicky") Green, of Blackwall, London, a notoriously prejudiced booster of "British ships" not only for British but also for world ocean trade. Originally ordered by Boston shipowners, the *Amphitrite* was turned over to Green at a good profit to both the builder and owners, and on being given British registry her name was changed to *Result*. The *Fatherland* was sold by the builder to Green, of London, in October 1854.

The NIGHTINGALE of Boston, Pioneer Clipper in the U.S.A.-Australia Trade

Following the discovery of gold in California and the call for American ships to take passengers and freight to San Francisco in the quickest possible time, "speed was king," and whereas the Panama route was favored by some, the delays, lack of accommodations, and hardships experienced at—and in crossing—the Isthmus, with a shortage of ships to transport both passengers and freight on the Pacific side, caused the Cape Horn route for some time to be deemed the best, most comfortable, and quickest from a North Atlantic port to San Francisco. The demand was not only for ships but also for fast sailing ships that could make the run to California in substantially less than "the usual 200 days" and were big enough to weather Cape Horn successfully and to carry a good number of gold seekers and a sizable quantity of freight (which, with the rates in effect, was most profitable to handle). The California trade was a one-way business, and the ships engaged in it had either to return eastward around the Horn light or to make the very much shorter run across the Pacific light and load at Manila, Hong Kong, or Shanghai for a U.S.A. East Coast port (or, if necessary, for a British or other European port). Thus, most of the best—largest and fastest—American clippers for years, in making their passages from an East Coast port (generally New York or Boston) to the Golden Gate, continued their voyages by proceeding from San Francisco across the Pacific to China or the Philippines. After loading in the Orient with a paying cargo, they sailed for home around the Cape of Good Hope, making about one complete voyage per year and that a journey around the world with the ships sailing westward. By choice of route in the Pacific and Indian Oceans, they avoided the necessity of battling the prevailing heavy winds in the Roaring Forties of the Southern Hemisphere except over the short distance involved in rounding Cape Horn outbound against the westerlies. The much less hazardous sailing around the southern end of the African continent (Cape of Good Hope), which is not as near the antarctic as the tip of South

America, is on the average a much easier and less turbulent point to round as well as being free of the ice hazard and extreme cold weather experienced during the midyear winter season off Cape Horn.

When clipper ships appeared in quantity to meet the demand for transport to California and gold was discovered in Australia, two profitable trade routes were offered to American shipowners, for Australia called for supplies in quantities far beyond what British ships could handle. Some American vessels of the smaller type took discouraged gold miners from San Francisco to South Australia, but California, when it was itself clamoring for supplies, could ship no goods. For years, several enterprising American firms used their inferior vessels, which they did not want to send around Cape Horn to California, in the Indian, East Indian, and Australian trade, making both the outward and homeward voyages via the Cape of Good Hope. Later, as Australia developed and had some cargo such as wool, tallow, and hides to exchange for needed supplies, New England shipowners engaged in a profitable barter business. Henry W. Peabody and other Massachusetts men operated "lines" of Australian packets for years. The Boston DAILY ADVERTISER of March 7, 1853, announced sailings of six different "lines" of this type, none of which, however, operated clipper ships or vessels of the large and fast modern type that were in demand for the Cape Horn California service. In the same Boston paper that announced the sailings of great numbers of ships appeared advertisements of Massachusetts-made products for export. Oak Hall, for instance, advertised "Clothing Manufactured Expressly for the Australian and California Markets."

In the autumn of 1851, Sampson & Tappan, of Boston, bought the Portsmouth, N. H.-built 1,060-ton clipper *Nightingale*, which had been designed and constructed more like a yacht than a merchant vessel, for she was planned as the world's first cruise ship to take passengers on a "Grand Transatlantic Excursion to the World's Fair" held in London in 1851. The builder of the *Nightingale*, Samuel Hanscomb, Jr., had failed, and after many delays and controversies, the ship was finished, towed to Boston, and ultimately sold on September 6, 1851, by auction. The original plan of sending the ship on a transatlantic excursion had to be abandoned, as she was not ready for sea and clear of attachments and litigation until fall, or four months after her advertised sailing date of June 10, when she had been scheduled to take 250 passengers on a cruise to spend the best part of the summer in England. Sampson & Tappan put the *Nightingale* on the berth for Sydney, Australia, and, by doing so, became the pioneer firm in the clipper ship trade (with direct sailings of sizable ships) between U.S.A. Atlantic ports and Australia. The *Nightingale*, which was more the type of a China clipper designed for Cape of Good Hope service and sailing in the tropics rather than for the Cape Horn route, cleared Boston October 17, 1851, for "Oceania and China" under command of Capt. John H. Fiske. The route planned was, out-bound, to Australia sailing east, thence a run to the China coast, where a return cargo would be picked up, and the homeward voyage was to be made by sailing westward through the Indian and Atlantic Oceans with a second rounding of the Cape of Good Hope.

Carl C. Cutler, in GREYHOUNDS OF THE SEA (1930), says:

With the sailing of the *Nightingale*, the rush to the new gold fields was on, a rush that was to develop, among others, the firm of R. W. Cameron & Company, the only one of all the great clipper ship houses now left in America. Many, alas! were to fall by the wayside during the dark days of

"57." The Civil War and '73 took their toll, although many of the houses, of course, retired voluntarily from the field, as the old men grew weary and the young heeded the call of the new west.

Whereas it is true that R. W. Cameron, of New York, like James Baines, of Liverpool, England, was an Australian specialist and that both names are associated in a large way "not only with the earliest but also with the fastest passages of the period and the most famous clipper ships," it should be borne in mind that Sampson & Tappan, of Boston, and not R. W. Cameron & Company, of New York, was the real pioneer as regards clipper ship sailings from America to Australia.

The *Nightingale* (Captain Fiske), on her first passage to "the land down under," in common with all other vessels sailing about the same time from U.S.A. East Coast ports, encountered adverse winds and unfavorable weather in the North Atlantic and experienced such sailing conditions as caused "Pathfinder" Maury to declare that, "owing to prevalence of more favorable winds in the early part of the voyage, Liverpool is 10 days nearer Melbourne or Sydney than New York." The accuracy of the ten-day differential may be questioned, but not the fact that sailing ships departing from English ports had a greater advantage in making time over the upper Atlantic part of the course to the Southern Hemisphere than a ship sailing from any North American East Coast port. On her maiden voyage, the *Nightingale* had such bad luck in the North Atlantic that she was not up to Cape St. Roque (about two days beyond the equator) until the 39th day out, and then one-half the time of the hoped-for length of passage to faraway Australia had passed. The ship passed the Greenwich Meridian (in 39° 50' S.) 17 days from St. Roque and on the 56th day of the passage, experiencing very variable weather south of the equator (best day's run, 263 miles; i.e., 11 knots per hour); but of Lieutenant Maury's list of 268 voyages over this particular route, this 17-day run of the *Nightingale* was beaten only four times and equaled but twice, and of these better or equal runs only one was made during a corresponding season of the year. The *Nightingale* ran from the Greenwich Meridian to Sydney in 34 days and from Cape St. Roque to port in 51 days. This was good sailing and should be considered remarkable because of the fact that Captain Fiske made this initial clipper run from the U.S.A. to Australia without the benefit of Maury's sailing directions. If he had had them aboard and followed them, the length of the passage from the Atlantic equator to the port of destination would have been reduced many days; it was said by "a week or more." Lieutenant Maury's advocated course from a North Atlantic port to Australia cut out a stop at Table Bay or a close rounding of the Cape of Good Hope, followed by a run east in latitudes north of the forties. His track called for a wide sweep in the South Atlantic, keeping 600 to 800 miles west of the southern tip of the African continent and continuing down to around Lat. 48° S., where a ship "would fall in with prevailing westerly gales and long, rolling seas in which to run her easting down." The *Nightingale*, on her maiden voyage, did not get the full possible benefit of Lieutenant Maury's "brave west winds" on her run from the South Atlantic to Sydney, even if Captain Fiske, after rounding the Cape, did take his ship on a circular course and run "pretty well south to save mileage and get more wind." When the *Nightingale* arrived at Sydney January 15, 1852, 90 days out from Boston, the Australians heralded the performance as "an amazing fast passage," and the next year (before the *Marco Polo*, following Maury's sailing directions, made her record run), the press referred to a 102-day passage from London to Sydney of the "Quebec-built" wood clipper ship *Gipsy Queen* as "one of the shortest runs known."

The *Nightingale* returned to the North Atlantic, loading tea at Shanghai for London, and on the homeward legs of her maiden voyage, she experienced "outrageous sailing conditions" in the China Seas; but after passing the Sunda Straits she did some brilliant sailing, running from the Cape of Good Hope to Deal in 39 days (the same time as it had taken her to go from Boston to Cape St. Roque on the outbound passage). Her time of 72 days from the Sunda Straits to London (or the English Channel and pilot) beat decisively the new British clippers *Stormoway*, *Chrysolite*, and *Challenger*, built expressly for this tea trade, and all other British and American ships making the run except W. H. Webb's new, big, superb clipper *Challenge* (from Whampoa to London), which sailed even with the *Nightingale* on the entire Atlantic section of the passage (which each ship covered in 39 days), but beat her by a few days from the Sunda Straits.

In the spring of 1854, the *Nightingale*—with Capt. Samuel W. Mather in command—made her second passage to Australia, but this time she sailed as one of the vessels of R. W. Cameron & Company's Australian "Pioneer Line." With her holds filled with paying freight, some 125 passengers, and mail aboard, the ship sailed from New York on May 20, 1854,

and anchored in Hobson's Bay, Melbourne, on August 2 after a record passage of 74 days (stated as 75 days, port to port). She ran from New York to the Atlantic equator in 29 days, which was eight days better than on her maiden voyage, but, nevertheless, slow time; however, her run of 45 days from the line to Hobson's Bay was excellent. Her best day's run in the Roaring Forties was 365 nautical miles, a stated average of 15.55 knots per hour, and she showed 17 knots at times by log and averaged 16 knots for several watches.

The year (1854) of the *Nightingale's* fast passage from New York to Melbourne is an important one, for during that year the original trio of the four big clippers built by Donald McKay for James Baines & Company and the British Black Ball Line—the *Lightning*, *Champion of the Seas*, and *James Baines*—sailed from Liverpool for Melbourne on their maiden voyages on May 14, October 11, and December 9, respectively. In this same year, the big pioneer U.S.-built clipper *Red Jacket* of the British-Australian White Star Line cleared Liverpool on May 4 and reached Melbourne on July 12 after a record run of 69 days (67½ days under sail), or eighteen days ahead of the *Lightning*, having sailed ten days before her and made an eight-day faster passage. With an arrival on August 2, 1854, the *Nightingale*, on her second passage to Australia, reached Melbourne three weeks after the *Red Jacket* and three days after the *Lightning*. On her pioneer run from the United States to Australia, the *Nightingale* reached Sydney on January 15, 1852, or 2 years 6 months 18 days ahead of her next entry to an Australian port. This second date of arrival, with Melbourne as the port of destination, can be compared with that of the initial arrivals at Melbourne of the first three big U.S.A.-built ships in the British-Australian packet line service with sailings from Liverpool, England:

| Name of Clipper | From | Line | Arrival at Melbourne | Name of Clipper | From | Line | Arrival at Melbourne |
|-----------------------|-----------|------------|----------------------|-----------------|-----------|-------------------------------------|----------------------|
| SOVEREIGN OF THE SEAS | Liverpool | Black Ball | Nov. 25, 1853 | LIGHTNING | Liverpool | Black Ball | July 30, 1854 |
| RED JACKET | Liverpool | White Star | July 12, 1854 | NIGHTINGALE | New York | Cameron's Australian "Pioneer Line" | Aug. 2, 1854 |

The *Nightingale*, leaving Melbourne after her second passage from the United States to Australia, proceeded in ballast to Hong Kong, loaded a cargo (principally sugar), and with a number of passengers aboard went up the coast to Shanghai. After discharging and taking a cargo of tea aboard, the ship cleared for London and was at Beachy Head the morning of May 18, 1855, after a passage of 91 days from Shanghai to London, pilot to pilot, and "only 70 days from Batavia Roads." The *Nightingale* evidently continued in the North Atlantic, antipodes, and oriental service for some time, averaging very good passages, and in 1856 she ran from Shanghai to New York in 88 days, which was excellent time considering her sailing chances. On May 18, 1859, the *Nightingale* made her first visit to San Francisco after a passage around the Horn from Boston. She then crossed the Pacific to China, loaded tea at Foochow, and reached New York January 30, 1860. Shortly thereafter the speedy yacht-like clipper was sold to a Captain Bowen and mysterious "unknown parties" and degenerated to a slaver. She was seized off the African coast by the U.S. sloop-of-war *Saratoga* on April 21, 1861; at the time she had 961 slaves aboard and was planning to take on more. She was condemned and sold at marshal's sale July 6, 1861, to the U.S. Government, which converted her into a cruiser for service during the Civil War. After a most eventful and extremely varied career of forty-two years, the *Nightingale*, operating as a Norwegian bark, was lost in the North Atlantic.

R. W. Cameron & Company and the New York-Australia Trade

Following the 1851-1852 pioneer clipper ship run of the *Nightingale* from a U.S.A. East Coast port to Australia, both Boston and New York sent out medium-sized sailing craft of moderate speed to share in the Australian trade, and following the early British and American custom, the ships returned home by way of China, the East Indies, or India. In 1852, William H. Webb, New York, built the fast trader *Royal Saxon* of 759 tons for "R. W. Cameron, Sydney, Australia." This ship, described by the builder as "of the compromise packet-clipper type," was 152 ft. long, 33 ft. beam, and 19 ft. depth of hold. In 1853 the transatlantic sailing packet *Bavaria* (908 tons; length 160 ft., beam 35.5 ft., depth 21 ft.) of the Havre Whitlock Line, which had been built in 1846 by W. H. Webb, cleared New York for Australia. The next year (1854) saw R. W. Cameron & Company, of New York and Sydney, N.S.W., Australia, definitely entering the U.S.A.-Australia trade in a big way with fast American clipper ships, and it was soon operating, we are told, "a line from New York to Melbourne which employed eight or ten fine, fast ships." Among the sailings of such craft to the developing new continent of the Southern Hemisphere, the following can be given prominence:

| Name of Clipper | Built (launched) | Builder | Ton-nage | Dimensions in Feet and Inches | | | Date Leaving New York | Arrival at Australian Port | Length of Passage in Days |
|-----------------|------------------|---------------------------------------|----------|-------------------------------|------|-------|-----------------------|----------------------------|-----------------------------------|
| | | | | Length | Beam | Depth | | | |
| FLYING SCUD | Nov. 2, 1853 | Metcalf & Norris, Damariscotta, Maine | 1,713 | 220-6 | 40-9 | 23-9 | Sept. 29, 1854 | Melbourne Dec. 14, 1854 | 76 |
| FLYING DUTCHMAN | Sept. 9, 1852 | William H. Webb, New York | 1,257 | 190 | 38-6 | 21-6 | Sept. 15, 1854 | Melbourne Dec. 5, 1854 | 81 |
| WHIRLWIND | Sept. 13, 1852 | James O. Curtis, Medford, Mass. | 960 | 185 | 38 | 21 | Mar. 28, 1855 | Melbourne June 11, 1855 | 75 |
| WHIRLWIND | Sept. 13, 1852 | James O. Curtis, Medford, Mass. | 960 | 185 | 38 | 21 | Feb. 29, 1856 | Melbourne May 19, 1856 | 80 |
| WHIRLWIND | Sept. 13, 1852 | James O. Curtis, Medford, Mass. | 960 | 185 | 38 | 21 | Jan. 21, 1857 | Melbourne Apr. 10, 1857 | 79 |
| WHIRLWIND | Sept. 13, 1852 | James O. Curtis, Medford, Mass. | 960 | 185 | 38 | 21 | Jan. 18, 1858 | Melbourne Mar. 31, 1858 | 72 |
| MANDARIN | June 1850 | Smith & Dimon, New York | 776 | 151-6 | 33-6 | 19-3 | Dec. 21, 1855 | Melbourne Feb. 29, 1856 | 70 days 9 hrs. (anchor to anchor) |
| SNOW SQUALL | 1851 | Alfred Butler, Cape Elizabeth, Maine | 742 | 157 | 32 | 16-6 | 1854 | Sydney 1855 | 85 |
| SNOW SQUALL | 1851 | Alfred Butler, Cape Elizabeth, Maine | 742 | 157 | 32 | 16-6 | 1861 | Melbourne 1861 | 82 (81, pilot to pilot) |
| SNOW SQUALL | 1851 | Alfred Butler, Cape Elizabeth, Maine | 742 | 157 | 32 | 16-6 | Dec. 2, 1862 | Melbourne Feb. 15, 1863 | 75 |
| PANAMA | Oct. 11, 1853 | Thomas Collyer, New York | 1,139 | 192-4 (overall) | 35-7 | 19-4 | 1856 | Melbourne 1856 | 74½ (pilot to pilot) |

The *Flying Scud* (Capt. Warren Bearse) was chartered by R. W. Cameron & Company for the large sum of \$30,000, which covered a voyage from New York to Melbourne, Australia,

and return via Calcutta and England. This ship gained a reputation for great speed following her initial run under canvas from her builders' yard at Damariscotta, Maine. We are told that on this maiden run, her officers decided that the vessel's chronometers were out of order, "being of the opinion that no ship could have run down the river and gotten to sea in the time they indicated." R. W. Cameron advertised the sailing of the *Flying Scud* as the "18th ship for Melbourne" in his Australian Pioneer Line, but in the autumn of 1854, Cameron was either ignorant, careless, or too grasping for high freight revenue to control properly the loading of his ships. We are told: "The *Flying Scud* left New York badly laden. She was in wretched trim for sailing, was much too deep in the water and carried some freight on deck." Cutler says that Cameron "sent the *Scud* on her way with her scuppers almost awash, a heavy deck load and trimmed two feet by the head," and he adds, "She was, therefore, extremely crank, and in view of all the circumstances it is remarkable that she made the passage at all." Sailing on September 28, 1854, the *Flying Scud* was struck by lightning in the North Atlantic and was delayed several days by having her compass deranged. The passage was in many ways "a most difficult one"; yet on November 6, 1854, the Maine-built clipper is reported to have made a world's record day's run for a sailing vessel (449 nautical miles), and later, during sixteen consecutive days, November 24-December 10, 1854, she covered 4,620 miles—an average of $288\frac{3}{4}$ miles per day and over 12 knots per hour. Captain Clark, in *THE CLIPPER SHIP ERA*, credits the *Flying Scud* with a 75-day passage from New York to Melbourne, but it was stated by contemporaries that R. W. Cameron & Company was "greatly disappointed in the run out"; this was evidently due to its absurd optimism in promising a "60-day passage" to prospective passengers and shippers of freight. It would seem that Capt. "Bully" Waterman's boast of "sixty days to Melbourne" had impressed R. W. Cameron & Company as a ship operator, but this British slogan—never realized in the entire history of sail—referred to a passage from Liverpool and not to one originating at New York (which Lieutenant Maury said should have a ten-day handicap). Moreover, in the fall of 1854, Cameron evidently did not have the knowledge of ships or the good judgment that he acquired later by experience, or he would never have sent the *Flying Scud* to sea laden as she was, not to mention the making of absurd statements of the anticipated length of voyage.

The *Flying Dutchman*, on her 1854 passage from New York to Melbourne, was badly handicapped (as were so many of the ships sailing from a U.S.A. East Coast port to Australia) in the North Atlantic, and she required $40\frac{1}{2}$ days to reach the equator and 42 days to be off Cape St. Roque. From this point, however, she did some magnificent sailing, requiring only 39 days from St. Roque to Melbourne and making an 81-day passage. She completed her voyage by returning to New York via China and London, leaving Shanghai October 8, 1855, and arriving in London January 9, 1856, after a passage of 93 days, port to port; it is said that she passed Anjer October 31, 1855, making a run from there to the port of destination in only 70 days. On her last passage out to California, the *Flying Dutchman*, leaving New York May 30, 1857, had a freight list of only \$18,275; whereas on the run from New York to Australia (leaving New York September 15, 1854), she had received 60 cents per cubic foot. The clipper piled up on Brigantine Beach, New Jersey, on February 12, 1858, when returning to New York from San Francisco loaded with a good cargo of "produce, principally wheat and hides, valued at \$150,000"; she was a total loss.

The Medford-built clipper *Whirlwind* made four consecutive voyages from New York to Melbourne and return. On her first outbound passage in this trade, she was 26 days to the Atlantic equator and 42 days to the Greenwich Meridian; she ran from St. Roque to Port Phillip in 48 days (an excellent sailing performance, seldom equaled, between the points). The return leg of the voyage consisted of a 40-day run from Melbourne to Calcutta; thence 94 days back to New York, where she arrived January 12, 1856, after an absence of 9 months 15 days. On her second and third voyages to Australia, the *Whirlwind* returned to New York via Manila, making passages from the Philippine port home in 116 and 113

days, respectively. The fourth outward passage of the *Whirlwind* was a run from New York to Melbourne of 72 days and is the second fastest passage on record between the points; she returned to New York via Calcutta. The average of the four passages of the *Whirlwind* between New York and Melbourne, made in four consecutive years, was only 76½ days, which is a splendid and apparently an unequaled sailing record for a ship of her tonnage. She averaged about 7½ knots per hour for 306 consecutive days at sea running toward the east.

The wonderful passage of the *Mandarin*, 70 days and 9 hours (anchor to anchor) from New York to Melbourne, made in the winter of 1855-1856, is an all-time record between U.S.A. East Coast and Australian ports. She was at the line in 21 days, passed Cape St. Roque on the 23rd day, crossed the Greenwich Meridian on the 39th day, and enjoyed a run of relatively low mileage (13,000), averaging 186 nautical miles per day and a speed of 7¾ knots per hour. The previous year, however, it was a different story. She sailed from Norfolk, Va., on September 13, 1854, for Melbourne, but encountered severe weather in the North Atlantic which crippled the mainmast and necessitated "nursing" the ship's spars and rigging throughout a long passage of 106 days, port to port, during which adverse sailing conditions were experienced. The *Mandarin* was generally considered an unlucky ship as to her sailings, for she seldom was benefited on her passages by favorable sailing conditions. Her record run of only 70 days from New York to Melbourne was an outstanding exception, for Dame Fortune smiled upon her throughout that passage. On her ten passages from China home, nine were made during the season of the unfavorable monsoons, and on the one passage where favorable winds were expected, they did not materialize. The *Mandarin*, in making an 89-day run from Woosung to New York in 1853, is credited by some authorities with making a passage equal to the best ever made over that course—considering the season of the year and the sailing chances.

The 1854-1855 voyage of the little Maine-built *Snow Squall* between New York and Australia was continued by a run from Sydney to China, and on the final leg of the return passage, a run of 78 days was made from Anjer to New York. On her second voyage to Australia in 1861-1862, the *Snow Squall* ran out to Melbourne in 81 days, pilot to pilot, and on this passage she beat the ship *Jack Frost* (sailing from New York) by twenty-five days and the *Dirigo* (sailing from Boston) by fourteen days. After unloading, she went from Melbourne to Singapore in 30 days; thence to Penang and was 100 days to New York, where she arrived September 5, 1862. The return passage of the 1862-1863 voyage was also made via Singapore and Penang; the ship was 35 days to Singapore and arrived at New York September 15, 1863, 94 days out from Penang. On the run home, the *Snow Squall* narrowly escaped capture off the Cape of Good Hope by the Confederate privateer *Tuscaloosa*, but the speed and handiness of the little Maine clipper and the courage and nerve of her commander (Capt. James S. Dillingham, Jr.) saved her.

The *Panama*, built in 1853, was the third ship of that name that had been owned by the New York firm of N. L. & G. Griswold (and when *Panama III* was condemned in 1867, the Griswolds promptly built their fourth *Panama*, deeming the name to be "a fortunate one"). The *Panama III* was a fast sailer and carried about her registered tonnage (1,139 tons) in deadweight and about 1,450 tons in measurement freight. In San Francisco, she was publicly advertised as "the fastest ship afloat," and her officers persistently maintained that "she had never met her match at sea." The vessel holds the record from San Francisco to Liverpool—86 days 17 hours; also from Tome, Chile, to Liverpool—56 days. In addition to fast runs in the California and China trade, the *Panama* ran in 1856 from Sandy Hook to Melbourne in 74 days 8 hours, thence to China, sailing from Shanghai December 12, 1856, and reaching New York March 19, 1857, after a passage of 97 days and 77 days from Anjer. On February 18, 1858, she left Hong Kong for Melbourne, arriving after a run of 52 days, and she then returned to Hong Kong, having been 4 months and 4 days on the round voyage. In 1866 the *Panama* carried wheat from San Francisco to Sydney, reaching that port

on October 17 after a passage of 49 days. The ship was condemned at Bahia in the fall of 1867, when fourteen years old; she was purchased by Buenos Aires parties and operated in trade for many years thereafter between the Argentine and the United States. Early in 1867, when at Hong Kong, the *Panama* had the unusual experience of having an organized band of Chinese harbor pirates quietly strip a large amount of copper from her exposed sides one night while floating light.

It would seem that R. W. Cameron & Company, unlike James Baines & Company, of Liverpool, put little, if any, of the shipping firm's money into the actual ownership of vessels, and possibly this is one of the prime reasons why the company weathered all the storms and periods of depression that drove other shipping companies on the rocks and into either insolvency or retirement. Many American clippers were registered at sometime or other during the clipper ship decade of 1850-1860 as R. W. Cameron & Company, Agents, and it would seem that, of the score or more of first-class clippers that the firm operated on one or more voyages from New York to Australia, it did not actually hold title to a single one, preferring to pay a price for chartering. As the Cameron company entered the Australian service with clipper ships when the California and national shipbuilding boom had spent itself and was on the wane, it was in a position to barter to its own economic advantage when the supply of first-class available ships greatly exceeded the trade demands on the Seven Seas. The following is a list of clipper ships registered at sometime during the fifties and early sixties as R. W. Cameron & Company, Agents:

| Name of Clipper | Built (launched) | Builder | Ton- nage | Dimensions in Feet and Inches | | | Owner |
|-----------------|------------------|--|--------------|-------------------------------|-------|-------|---|
| | | | | Length | Beam | Depth | |
| GREY FEATHER | 1850 | C. S. Husten, Eastport, Maine | 587 | 138-4 | 30- 5 | 19 | L. H. Sampson & Co., New York; sold Bremen, 1862. |
| FLYING SCUD | Nov. 2, 1853 | Metcalf & Norris, Damariscotta, Maine | 1,713 | 220-6 | 40- 9 | 23-9 | New York owners; sold British, Apr. 1863. |
| WINDWARD | 1854 | Trufant & Drummond, Bath, Maine | 818 | 159 | 35 | 21 | New York owners. |
| MINNEHAHA | Mar. 22, 1856 | Donald McKay, East Boston | 1,698 | 209 | 41-10 | 28-4 | Kendall & Plympton, Boston, Mass. |
| SPORTSMAN | 1856 | Belfast, Maine | 626 | 142-2 | 31 | 21 | J. Pierce & Co., Boston, Mass. |

The *Grey Feather* was put in the Australian trade in early 1854, and under command of Capt. Daniel McLaughlin, she did some good sailing, particularly in such waters where her small tonnage was a benefit rather than a handicap. Returning home on her first voyage to Australia, she left Melbourne on June 8 for Calcutta, discharging her pilot at 6:00 P.M. On July 14, Captain McLaughlin made the following log entry: "8.30 P.M. Seen Fals Point bearing N by W, then shaped a course for the pilot station. At 11.45 took a pilot and proceeded up the River. This ends the abstract and also the quickest passage ever made between the 2 ports [36 days]."

The *Minnehaha*, designed and built by Donald McKay particularly for the Australia and China trades, made her maiden voyage out to Australia and for several years operated in trade routes, around South Africa, between the U.S.A., Australia, and the Far East, with Captain Beauchamp in command. She is said to have had medium sharp lines and, while generally considered "a fast sailer," evidently made no noteworthy passages. In January 1862, when homeward bound, the *Minnehaha* rescued the crew of the bark *Waverley* and landed the men at Cape Town February 4. The *Minnehaha* was sold in May 1862 to Samuel G. Reed & Company, Boston, for \$62,500; she was wrecked by being blown upon a reef when at moorings at Baker's Island, in the Pacific, on December 3, 1867.

The firm of R. W. Cameron & Company continued its connection as specialists in Australian shipping, for when in 1886 the Down Easter *S. F. Hersey* of 991 tons (which had

been launched in 1865 by McGilvery at Searsport, Maine) was acquired by the Cameron company (probably as agents), the press referred to the firm as being "extensively engaged in trade with Australia."

Among the clippers that made several voyages from East Coast U.S.A. ports to Australia were the following three ships:

| Name of Clipper | Built (launched) | Builder | Original Owner | Tonnage | Dimensions in Feet and Inches | | | End |
|-----------------|------------------|-------------------------------------|---------------------------------|---------|-------------------------------|------|-------|---------------------------|
| | | | | | Length | Beam | Depth | |
| MALAY | Aug. 1852 | John Taylor, Chelsea, Mass. | Silsbee, Stone & Pickman, Salem | 868 | 164 (keel) | 33-2 | 19-1 | Condemned, Oct. 1891. |
| COMPETITOR | Feb. 1853 | J. O. Curtis, Medford, Mass. | W. F. Weld & Co., Boston | 871 | 175 (overall) | 33-5 | 20-2 | In 1901, sold to Finland. |
| FLYING EAGLE | Dec. 1852 | William Hitchcock, Newcastle, Maine | Nickerson & Co., Boston | 1,094 | 183-9 (deck) | 36-4 | 23 | Condemned, 1879. |

The *Malay*, after a maiden voyage in the Cape Horn trade (1852-1853) with an outward passage of 116 days from Boston to San Francisco, made four voyages to the antipodes which can be briefly summarized as follows:

| Voyage No. | Departure | | Run to Atlantic Equator | Arrival | | Length of Passage | Return via |
|------------|-----------|---------------|-------------------------|-------------|---------------|-------------------|--------------------------------|
| | Port | Date | | Port | Date | | |
| | | | <i>Days</i> | | | <i>Days</i> | |
| 2 | New York | Oct. 14, 1853 | 35 | Hobart Town | Jan. 12, 1854 | 90 | Calcutta; 107 days to New York |
| 3 | New York | Dec. 2, 1854 | 32 | Sydney | Feb. 21, 1855 | 81 | Calcutta; 115 days to Boston |
| 4 | Boston | Nov. 28, 1855 | 32 | Melbourne | Feb. 25, 1856 | 89 | China |
| 5 | Boston | Nov. 30, 1856 | 23 | Melbourne | Feb. 18, 1857 | 80 | China |

The last of the four outbound passages of the *Malay* gave promise of being an unusually fast one, as she was within 950 miles of Melbourne when only 69 days out; however, she then encountered a belt of calms and took 11 days to make port, averaging only 86 miles a day and about 3½ knots per hour during this tedious ending of a fast run. The average of the four outbound passages of the *Malay* was 85 days—an excellent performance.

The *Competitor* had a varied experience in the California, China, and East India trades during her first eight years of service, in which she operated as a Cape Horner, carried tea from Whampoa and Shanghai to New York and Boston and a cargo from Manila to Boston, crossed the Atlantic, traded between England and China, and carried coolies from Swatow to Havana. In 1861 the *Competitor* went out to Sydney from New York in 96 days and traded on the Asiatic coast for about two years (with a round voyage between Hong Kong and San Francisco, 53 days east and 59 days west). She sailed from Manila July 27, 1863, for New York, which she reached November 20 after a passage of 116 days. The ship was then sold to the Germans by Weld & Company for \$31,100, her age being ten and a half years. She was operated in the North Atlantic for several years as the *Lorely*, but was later bought by the British, given her original name, and for four years (1869-1873) ran between New York, Australia, and the Orient. In 1874 she was owned by the Swedes and was again put in transatlantic trade. In 1901 the *Competitor* (then bark-rigged and named the *Edward*) was libeled for damages resulting from a collision and was sold to parties in Finland when forty-eight years old.

The *Flying Eagle* did not appear in the Australian trade until she had passed her prime, as she was primarily a Cape Horner and made twelve westbound passages sailing from New York or Boston to San Francisco during the period February 1853-November 1869. In the fall of 1865, when about thirteen years old, the clipper made her first passage to Australia, sailing from Boston, and she returned home via the Orient. In late 1867, she went from New York to Australia and then carried coal from Newcastle, N.S.W., to San Francisco, where she arrived June 18, 1868. In 1870 she again traveled over this course, then made a round trip between California and Australia, and on the return leg of her voyage went from San Francisco back to Newcastle, thence to Hong Kong, Manila, and home, arriving at New York in the late spring of 1873. The *Flying Eagle* was then sent out to Melbourne, and after discharging she went to Newcastle and took coal from there to Hong Kong; in May 1874 she was at Iloilo loading for New York. The ship continued in the New York-Australia-Orient trade until 1879. On July 22 of that year, she put into Mauritius in distress and was condemned and sold in September when approaching twenty-seven years of age.

The Donald McKay-built Big Clippers in the British-Australian Trade—the World-famous Quartet Built for James Baines & Company's Liverpool-Australia Black Ball Line, 1853-1855

In 1853, Donald McKay seriously turned his attention to the British-Australian colonial trade, for which, it was evident, there was a crying need for large and fast British-owned ships. When McKay laid down the *Sovereign of the Seas* in early 1852 (launched in June), he was building her "on spec" for the California trade as "a bigger and better Cape Horner than the *Flying Cloud* or any other American clipper" and for possible use in the Australian trade. However, when McKay conceived the idea, whittled the model, and laid the keel of the mammoth *Great Republic* (launched October 4, 1853)—a vessel planned "to dwarf and outsail any ship afloat"—he had the British-Australian trade primarily in mind, and he hoped to sell his tremendous four-masted shipentine, which registered 4,555 tons as completed, to the British.

The following is a list of the largest merchant sailing ships afloat when the *Great Republic* caught fire on December 26, 1853, and was scuttled at her loading dock in New York before she sailed on her planned initial passage under canvas to England, where the builder-owner hoped to sell her to the British for service in their Australian colonial trade:

| Name of Ship | Built (launched) | Tonnage | Builder | Owner |
|-----------------------|------------------|---------|------------------------------|--------------------------|
| GREAT REPUBLIC | Oct. 4, 1853 | 4,555 | D. McKay, Boston | Builder |
| SOVEREIGN OF THE SEAS | June 1852 | 2,421 | D. McKay, Boston | Builder |
| QUEEN OF CLIPPERS* | Mar. 26, 1853 | 2,361 | R. E. Jackson, Boston | Seccomb & Taylor, Boston |
| RED JACKET** | Nov. 2, 1853 | 2,305 | Geo. Thomas, Rockland, Maine | Seccomb & Taylor, Boston |

*Sold after launching to Zerega & Co. and D. Fowler, New York, for \$135,000.

**Sold in 1854 for £30,000 (about \$146,000) to Pilkington & Wilson for its British-Australian "White Star Line."

(Continued on next page)

| Name of Ship | Built (launched) | Tonnage | Builder | Owner |
|---------------------|---------------------|---------|----------------------|--|
| EMPRESS OF THE SEAS | Jan. 14, 1853 | 2,197 | D. McKay, Boston | Builder; sold to W. Wilson & Co., Baltimore |
| CHARIOT OF FAME | Apr. 1853 | 2,050 | D. McKay, Boston | Train & Co., Boston |
| STAR OF EMPIRE | 1853 | 2,050 | D. McKay, Boston | Train & Co., Boston |
| CHALLENGE | May 24, 1851 | 2,007 | W. H. Webb, New York | N. L. & G. Griswold, New York |

With the keel laid for the *Great Republic* and with the *Sovereign of the Seas* still unsold, Donald McKay sailed for Liverpool on the latter vessel (under the command of his brother Lauchlan) on June 18, 1853. Upon arrival there on July 1, after a fast crossing of two weeks' duration, he unsuccessfully endeavored to sell to the British the completed and ready-to-deliver "*Sovereign*" and to interest them in the possible acquisition of the giant vessel building, which he was later to christen *Great Republic* after all hope of selling the craft to the British had been abandoned. McKay had been told emphatically by them, "Such a ship is far too big for practical operation, and under no condition would we consider the ownership or the charter for our service of such a tremendous deep-draft vessel." McKay was turned down cold by the British-Australian Black Ball and White Star lines when he attempted to interest them in his new 4,500-ton clipper "that will outcarry and outsail any sailing ship in the world," and he could not awaken enthusiasm on the part of any Britisher in his *Sovereign of the Seas*, which he was offering for sale with the ship herself at hand to show a prospective customer. British shipowners merely echoed what American shipowners (Enoch Train, George B. Upton, Sampson & Tappan, Glidden & Williams, etc., of Boston; Grinnell, Minturn & Company, A. A. Low & Bro., N. L. & G. Griswold, etc., of New York) had told him; viz., that they would not care to own and operate the "*Sovereign*," for they could not see how anyone could make money with her over a term of years. However, McKay's product was admired by the British as an exhibit of the builder's art, and his *Flying Cloud*, with "an 89-day record to California," was good advertising. McKay ships built for Enoch Train's "White Diamond" Boston-Liverpool packet line, such as the *Joshua Bates*, *Washington Irving*, *Anglo-Saxon*, *Anglo-American*, *Plymouth Rock*, *Parliament*, and *Daniel Webster* (also the unfortunate *Ocean Monarch* of 1,301 tons, built in 1847, which through no fault of her builder had come to a disastrous end), were well known to Liverpool shipowners as were the big and fast New York-Liverpool Swallow-tail line packet ship *New World* of 1,404 tons, built in 1846, and the McKay-built New York-Liverpool "Z" Line (Zerega & Company, of New York) fleet consisting of the packets *A Z* (700 tons), *L Z* (897 tons), and *Antarctic* (1,115 tons), built in 1847-1850.

Whereas McKay succeeded in chartering the *Sovereign of the Seas* for one complete voyage to James Baines's Black Ball Line operating between Liverpool and Melbourne, Australia, he could not sell the ship to that line, to a competitive line, or to any British shipowner, and she was finally disposed of (at a cut in price of some twenty thousand dollars) to a Hamburg, Germany, firm. However, Donald McKay's visit to England was a profitable one for him, as he entered into a tentative contract to build "three Australian passenger packets of about 2,000 tons" for James Baines & Company, of Liverpool, for its Black Ball Line.

Upon returning to the United States, McKay promptly started work on the first of the "Baines" ships. It was predicted that she would be "the fastest and best of all colonial packets." He modeled "a big 2,000-ton ship" by making a vessel with only two continuous laid decks and a poop deck running 76½ ft. from the sternpost forward and a forecastle extending 48½ ft. aft of the stem at the water line; between them, with a freeboard of

some 6 ft. (or less at the low point of the sheer), was an open deck 102 ft. long, at the forward part of which was a deckhouse 47 ft. long and 18½ ft. wide. Later, the poop, forecastle, and top of the deckhouse were connected, and a complete third deck resulted, which—as a spar, weather, or upper deck—materially improved the seagoing qualities and capacity of the ship, but, of course, increased her measured registered tonnage. Another mistake made in the modeling of the first ship designed and built by McKay for Baines—to be known as the *Lightning*—was in the extreme hollowness of the water lines of the forward body. It was said by contemporaries as well as her builder that she had the sharpest entrance lines of any clipper. Carl C. Cutler writes that her design “was like that of no other large clipper ever built, but it may be noted [from the model] that several features of the entrance and run somewhat resembled lines of the yacht *America*.” The builder was very evidently concentrating on one thing only when he whittled the model of the *Lightning* for the British; that was extreme speed, and to get it he sacrificed, knowingly or unknowingly, other most important qualities. Richard C. McKay describes her as “the fastest ship that ever sailed the seas” and says, “She had sharper ends than any clipper ever built in the world and her lines were decidedly concave. At the load-displacement line, a chord from the extreme of the cutwater to the rounding of her side would show a concavity of 16 inches.” John Willis Griffiths, the designer of the *Rainbow* and *Sea Witch* and an advocate of sharp-lined ships, wrote as editor of THE MONTHLY NAUTICAL MAGAZINE, New York, in the August 1855 issue of that publication: “No timid hand or hesitating brain gave form and dimensions to the *Lightning*. Very great stability; acute extremities, full, short midship body; comparatively small deadrise and the longest end forward, are points in the excellence of this ship.” It would have been truer if he had said, “. . . are conspicuous features of the model of this ship,” but Griffiths himself had for many years urged the use of extremely hollow, sharp forward water lines, and he could not have been expected to criticize or even question a feature of design that he had championed.

The pronounced concavity of water lines forward, with but little flare and a huge well amidships to catch and hold water, made the *Lightning* a very wet ship. Her most capable and enterprising British skipper (Capt. Anthony Enright), after one round voyage in the vessel, it is said, urged the owners to fill in the forward hollowness with timber, which was done at Liverpool; but heavy seas gradually washed the filling away. It was agreed by all the officers aboard that the ship “sailed better and was more buoyant forward and drier on deck” when the extreme concavity of her entrance lines was filled in. When one side of the false bow was washed away, the underwriters caused trouble upon the vessel’s arrival and inspection at Melbourne, for leakage occurred through the fastening holes. All attempts to improve the model, while effective for a while, were impermanent and, therefore, impractical. At the end of a completed voyage, all the filling had to be removed, for such patching would not withstand the action of the sea upon it. Donald McKay was annoyed at any criticism of his model and incensed when the Britishers attempted to remedy shortcomings or faults of design. After his connection with the British was terminated and it was evident that they would give no more contracts for the building of big clipper ships to any United States yard, McKay scathingly referred to the “wood butchers of Liverpool,” and in late 1859 he expressed his views on this matter in a letter which appeared in the SCIENTIFIC AMERICAN.

The two most pronounced defects in the design of the *Lightning* were either overcome or materially improved in the models of the *Champion of the Seas* and the *James Baines*, which followed the *Lightning* and were the other two ships of the Baines trio of fast clippers ordered from McKay in the late summer of 1853. The second and third ships to be built on the contract (also a fourth ship, the *Donald McKay*, which followed a year later) were required by James Baines to be “three-decked ships throughout their length,” with bow lines “not so sharp or hollow as on the first ship” (*Lightning*). The result was that the shipping fraternity in general, on both sides of the Atlantic, considered the McKay-

built Baines clippers that followed the *Lightning* better and more practical ships than the first of the fleet. The first three Baines Australian clipper liners (contracted to be built in 1853) were promised and actually constructed by McKay on a schedule of "three months apart," and that the East Boston shipbuilder estimated closely and showed pronounced resourcefulness, driving power, and ability as an outstanding, practical constructor of large wooden sailing vessels is proved by the following statistics:

| Name of Clipper Ship | Date of Launching | | Date of Completion and Departure | |
|----------------------|--------------------------|---------------|----------------------------------|--|
| | Original Stated Estimate | Actual | Original Stated Estimate | Actual |
| LIGHTNING | About Jan. 1, 1854 | Jan. 3, 1854 | About Feb. 15, 1854 | Sailed Feb. 18, 1854, from Boston for Liverpool. |
| CHAMPION OF THE SEAS | Apr. 15, 1854 | Apr. 19, 1854 | June 1, 1854 | Left Boston May 29, 1854, in tow for New York to load for Liverpool. |
| JAMES BAINES | Aug. 1, 1854 | July 25, 1854 | Sept. 15, 1854 | Sailed Sept. 12, 1854, from Boston for Liverpool. |

The Donald McKay-James Baines contract for the building of three large clipper ships for the British-Australian trade is not only the first time but also, evidently, the only time in history that Britain has ordered a fleet of vessels to be built for its account in a foreign country. McKay was very proud of his contract "to build three for foreign account" representing "about \$350,000," but before the business connection between the East Boston shipbuilder and the progressive Liverpool shipowner was terminated (eighteen months after it originated), Baines had ordered from McKay four vessels to be built as per approved specifications and had purchased two ships that were on the stocks at the McKay yard and being constructed for the builder's account. The total tonnage of the six new ships purchased from Donald McKay by James Baines & Company, of Liverpool (for the Australian Black Ball Line), and delivered in a period that was approximately a year (1854-1855) aggregated 13,579 tons, and the value of contracts was said to represent "over seven hundred thousand dollars." This figures about \$51½ per ton and would seem to be approximately correct, as the *Flying Cloud* sold for \$50 per ton. The asking price of the *Sovereign of the Seas* was around \$53.70 per ton, and she was sold "at a cut price" when two years old for \$45.50 per ton.

It was really the firm of Smith & Dimon, in 1850, that built the first American clipper for foreign account—if one excepts certain early Baltimore-built craft, which, while occasionally referred to by historians as "Baltimore clippers," were not true clippers, either extreme or medium. This original foreign-owned, United States-built clipper was the *Nicholas I* of 596 tons (length 133 ft., beam 31½ ft., depth 17½ ft.). Some historical records state that Richard M. Weston, Robert C. Goodhue et al., New York, were the owners of this clipper, but the little ship was Russian in name and, moreover, was taken from New York to Cronstadt, Russia, in the summer of 1850 by Captain Leach "under orders of her owners, the Russian American Fur Company."

When the clipper ship *Resolute* of 786 tons was launched January 15, 1853, from the yard of Westervelt & Sons, New York, it was announced by the builders that the ship was "the first to be built in the United States for British owners." It was stated that her construction had been ordered by a Mr. Miller, of London, but, apparently, the reputed English owner did not live up to the terms of the contract and was unable to make the payments required to obtain possession. The *Resolute* was operated under the American flag by A. A. Low & Bro., New York, and this firm appears as the owner of record until the ship was sold in 1862 to J. Moorewood & Company, of Bristol, England.

Donald McKay built almost entirely for British account during the year 1854. He launched, all told, eight vessels that year aggregating 14,718 registered tons, and only one of them, the medium clipper *Santa Claus* of 1,256 tons, built for Joseph Nickerson & Company, Boston, was for an American shipowner. Two of the ships, the medium clippers *Commodore Perry* and *Japan* (originally named *Great Tasmania*), representing 3,928 tons, or some 26½ per cent of the total, were laid down for his personal account and were clipper packets of medium fullness intended to operate in a McKay transatlantic line that the East Boston shipbuilder was promoting. These were sold when on the building ways to James Baines, as McKay found it impossible to interest Boston capital in his sailing packet ship venture. In addition to the three clipper ships built by McKay under contract with Baines, which aggregated 7,055 tons (or 48 per cent of the total), the Boston builder during the year launched the extreme clipper *Blanche Moore* of 1,787 tons for Charles Moore & Company, Liverpool, for the East Indian trade and the square topsail schooner *Benin* of 692 tons for Thos. Harrison & Company, Liverpool, for the African trade. Therefore, it will be seen that of the total tonnage launched by Donald McKay in 1854, only one ship, the *Santa Claus*, representing 8½ per cent of the year's tonnage, was for an American owner and intended for the California (and Indian) trade. The other seven vessels built (six ships and one square topsail schooner), aggregating 13,462 tons and 91½ per cent of the total, were for Liverpool owners, James Baines acquiring 10,983 tons, or 74.5 per cent of the total McKay tonnage for the year, and Baines's shipping friends at Liverpool taking 2,479 tons, or 17 per cent. In the autumn of 1854, James Baines & Company contracted with Donald McKay to build for it and its British-Australian Black Ball Line, its fourth American-built full clipper. (The *Commodore Perry* and *Japan* were designated medium clippers and were of more moderate design—both model and rig.) This last ship to be constructed by McKay for the British or any foreign account was named after the builder himself—*Donald McKay*. She was launched in January 1855, about a year after the first of the Baines quartet of fast American-built clippers was put in the water. The *Donald McKay* (2,595 tons) was the largest of the Baines fleet and increased to 13,578 tons the total tonnage of the full-rigged ships, clippers and medium clippers (six in number), acquired by James Baines & Company from Donald McKay; all were launched in the period of approximately a year, viz., January 1854-January 1855.

The four "out-and-out" clipper ships that James Baines and the Liverpool-Australia Black Ball Line ordered from Donald McKay were not a quartet of extreme clippers that were sister ships, for the vessels were all quite different one from the other. The last three were built with three complete planked decks and with less hollow bow lines than the *Lightning*, but each ship was somewhat larger than her predecessor and, when built, was the largest merchant vessel flying the British flag—and, moreover, the largest in the world in active service. McKay's leviathan and "white elephant," the *Great Republic*, the only bigger ship that had been launched, was burned and scuttled at her loading dock in New York on December 26, 1853, prior to embarking on her maiden voyage, and while all of the Baines "Big Four" were being launched and fitted out, she was being reconstructed and cut down; her tonnage was reduced from 4,555 to 3,356 tons (26½ per cent) and her depth lessened from 38 ft. to 29 ft. 2 in. (30 per cent). She actually first put to sea under canvas on February 24, 1855, or three days after the *Donald McKay*—the last of the McKay-built British-Australian Black Ball liners—had sailed from Boston for delivery to her owners in Liverpool.

The following data of the four "out-and-out" clippers built by Donald McKay for James Baines & Company and its Liverpool-Melbourne Black Ball Line and of the McKay-built *Sovereign of the Seas*, which was chartered for one round voyage by that line, covering the vessels' initial passages from the United States to England are of interest:

| Name of Clipper | Captain | Between Ports | Date | Length of Crossing | From | Best Day's Run |
|-----------------------|--------------------|------------------------|-----------------------|---------------------------------|----------------------------|----------------|
| SOVEREIGN OF THE SEAS | Lauchlan McKay | New York and Liverpool | June 18-July 2, 1853 | 13 days 23 hours | Dock to anchorage | 344 |
| LIGHTNING | James Nicol Forbes | Boston and Liverpool | Feb. 18-Mar. 4, 1854 | 13 days 21 hours | Boston Light to Rock Light | 436 |
| CHAMPION OF THE SEAS | Alexander Newlands | New York and Liverpool | June 16-July 15, 1854 | 29 days | Pilot to pilot | 250 |
| JAMES BAINES | Charles McDonnell | Boston and Liverpool | Sept. 12-25, 1854 | 12 days 6 hours | Boston Light to Rock Light | 337 |
| DONALD McKAY | H. Warner | Boston and Liverpool | Feb. 21-Mar. 10, 1855 | 17 days (12 days to Cape Clear) | Pilot to pilot | 421 |

A record of these five big clipper ships' initial round voyages between England and Australia during the period September 1853-December 1855 is set forth comparatively herewith:

| Name of Clipper and Captain | Outward Passage | | | |
|---------------------------------|---------------------|-------------------|--|--|
| | Date | | Length of Passage | Remarks |
| | Departure Liverpool | Arrival Melbourne | | |
| SOVEREIGN OF THE SEAS (Warner) | Sept. 7, 1853 | Nov. 26, 1853 | 80 days (reported 77 days 12 hours) | 1,275 miles in four days; 3,315 miles in twelve days |
| LIGHTNING (Forbes) | May 14, 1854 | July 31, 1854 | 78 days (reported 76 days) | Best day's run, 348 miles |
| CHAMPION OF THE SEAS (Newlands) | Oct. 11, 1854 | Dec. 25, 1854 | 75 days (reported 72 days) | Arrival also stated as Dec. 22 |
| JAMES BAINES (McDonnell) | Dec. 10, 1854 | Feb. 13, 1855 | 65 days 5½ hours; Rock Light to Hobson's Bay, 63 days 18 hours | Covered 423 miles in 24 hours |
| DONALD McKAY (Warner) | June 6, 1855 | Aug. 26, 1855 | 81 days | Average of six consecutive outward passages, 83 days |

| Name of Clipper and Captain | Homeward Passage | | | |
|---------------------------------|---------------------|-------------------|---|---|
| | Date | | Length of Passage | Remarks |
| | Departure Melbourne | Arrival Liverpool | | |
| SOVEREIGN OF THE SEAS (Warner) | Jan. 23, 1854 | Apr. 3(?), 1854 | 70 days; reported 68 days (?)* | Mutiny on board |
| LIGHTNING (Forbes) | Aug. 20, 1854 | Oct. 23, 1854 | 64 days 3 hours 10 minutes (reported 63 days 16 hours to pilot) | Best day's run, 412 miles |
| CHAMPION OF THE SEAS (Newlands) | Feb. 1855 | May 1855 | 84 days | Second voyage, 83 days out and 90 days home |
| JAMES BAINES (McDonnell) | Mar. 12, 1855 | May 21, 1855 | 69½ days | Best day's run, 420 miles |
| DONALD McKAY (Warner) | Oct. 3, 1855 | Dec. 28, 1855 | 86 days | Average of six consecutive homeward passages, 85 days |

*F. C. Matthews, in "Table of Maiden Voyages of the Principal Early Australian Liners," states that this homeward passage occupied 86 days; Richard McKay, in *SOME FAMOUS SAILING SHIPS AND THEIR BUILDER, DONALD McKAY*, seems to confirm this and says that the return passage was to London (not Liverpool) and that the crew, "mostly composed of Australian beach-combers, some of them ex-convicts, who were always ready to undertake anything desperate, . . . arose in mutiny and made a rush aft to seize Capt. Warner and his officers and convert the ship into a pirate."

The *Sovereign of the Seas* of 2,421 tons, launched in June 1852 from the McKay East Boston yard, was "the first of Donald McKay's colossal clippers." As a sample of the propaganda fed to the press by McKay in an endeavor to obtain good and effective advertising for the big ships that he built "on spec" and had to sell, the following from the Boston DAILY ATLAS is of interest:

Behold the modern *Sovereign of the Seas*, the longest, sharpest, the most beautiful merchant ship in the world, designed to sail at least twenty miles an hour with a whole-sail breeze. See her in the "beauty of her strength," the simplicity and neatness of her rig, flying before the gale and laughing at the rising sea. . . . Mr. McKay designed that she should be the swiftest sailing vessel in the world and, what is apparent to all, has made her strong enough to carry shot in bulk. Considering the sharpness of her ends, she has large stowage capacity for a clipper and will be buoyant and easy under canvas. . . . The beauty and strength of her hull are only equalled by her completeness aloft. She has not only the stoutest and most beautifully proportioned set of spars that ever towered

above a ship's deck, but the rigging is the very best that could be procured. . . . She has been inspected by nautical men from all parts of the country and, we believe, has been the object of unqualified admiration. . . . For beauty of model, strength of construction and completeness of equipment aloft she has no superior. It is but reasonable to presume that, with a fair chance, she will make the quickest voyage ever performed under canvas. We consider her not only an honor to her enterprising builder, but to the country at large. Americans on distant seas may refer to her with national pride and challenge a comparison from the commercial navies of the world. She is well named the *Sovereign of the Seas*.

In the "frenzy of building" in the clipper ship era, McKay had the audacity to refer to his ship frequently in conversation as "a twenty-knot ship"—a ridiculous designation for any vessel dependent upon wind and sails for propulsion. Many possible buyers, it is said, "shied away" from the "*Sovereign*" because of her great size, maintaining that a ship of 1,800 to 2,000 tons was the practical maximum and that "no ship should draw more than 20 feet of water when deep laden." McKay exceeded the limit of size set by operating shipowners by about one-eighth, but in this ship he did not go much below the maximum set for draft. When the *Sovereign of the Seas* was launched, she drew 10 ft. 3 in., and she was designed "to draw 20½ ft. forward at her load displacement line." Evidently, she had a drag of a foot aft, for she was sheathed with yellow metal "up to 20½ ft. forward and 21½ ft. aft," and when her builder gave her deep-loaded draft as 21 ft., he evidently referred to the mean draft. (In building the *Great Republic* a year later, McKay apparently threw all restraint to the winds, for that ship was designed "to draw 25 to 26 ft. mean load draft" and on one of her early voyages was loaded to 26½ ft., which caused great annoyance and expense in handling and necessitated discharging into lighters outside of the port of destination.)

Donald McKay designed and built the *Sovereign of the Seas* with the Cape Horn California trade primarily in mind, but when American shipowners were cool to his offering, he assured his brokers, Funch & Meinke, of New York, in whose hands he had placed the vessel for sale, that the "*Sovereign*" was an ideal ship for the Australian trade and should fetch a good price in Liverpool. "Here is a ship," he said, "that would be perfect to run in the trade between England and Australia, for she will outsail anything afloat or now on the stocks, sailing around the two capes and running east in the southern latitudes just as she will sailing east in the North Atlantic." When Meinke was unable to interest American shipowners in the "*Sovereign*" before, during, and after her one voyage in the California trade (in which she did some good sailing), Donald McKay, with his brother Lauchlan in command, took her to Liverpool to sell, having the Black Ball and White Star British-Australian packet lines particularly in mind. Being unable to dispose of the big ship to the British, McKay influenced James Baines & Company to charter her for one voyage and operate her in the Liverpool-Melbourne Black Ball British colonial line. Lauchlan McKay was relieved of his command, and Captain Warner, who had been acting as first mate, sailing master, and chief executive officer aboard, took over. The "*Sovereign*" sailed from the Mersey on September 7, 1853, with sixty-four passengers and a cargo aboard said to have been valued at a million dollars. On arrival at Melbourne after a rather slow passage

out, Captain Warner wrote: "We had a long passage of 78 days with light and baffling winds; 31 days to the line; set skysails on leaving Liverpool and never shortened for 35 days; the crew were insufficiently clothed and one-half disabled." On this voyage, the "*Sovereign*" had two fairly good periods of sailing when running her easting down in the southern latitudes before westerly gales and heavy winds. On one occasion, she covered 1,275 miles in four consecutive days (an average of 319 miles per day and about 13.3 knots per hour), and on another she is credited with running 3,315 miles in twelve consecutive days (an average of 276 miles per day and about 11.5 knots per hour). British historians are much confused regarding the return voyage and tell contradictory stories as to the length of the passage and even the destination. (One "authority" says that she "returned to London in 86 days," which is obviously incorrect.) The consensus of opinion is expressed by Howe and Matthews, who write:

From Melbourne she returned to Liverpool in 68 days, beating the steamer *Harbinger* four days and all other vessels sailing about the same time from 15 to 20 days. She brought back a great deal of treasure and experienced a dangerous mutiny on the passage. March 17, 1854, a quarrel broke out between one of the steerage passengers and a member of the crew. The mate interfered and was resisted by the sailor, who was finally ironed. Fifteen or

twenty members of the crew then surrounded the mate and threatened to seize the ship if their comrade was not released. So serious did the situation become that not only the officers but the passengers, also, were armed and the mutineers driven forward at the mouths of their guns and pistols. Finally the ringleader, Hale, and two others, were ironed and confined between decks for the rest of the passage and the mutiny was quelled.

It was fortunate that Capt. Lauchlan McKay, who was not by any means "a hard-boiled salt," was not in command of the ship, for sailors on the homebound passages of the British-Australian packets were notoriously tough, lawless, and quite capable—as some of them were likely to be hardened criminals—of becoming pirates and capturing a ship on the high seas for the gold she carried, and the shedding of blood would not stand in their way to acquire riches. After the one voyage of the "*Sovereign*" in the Australian trade, the Black Ball Line declined to purchase her, and McKay was determined to sell and not lease her. After some delay, a sale was finally made to the Germans, and J. C. Godeffroy & Son, of Hamburg, became the owners of record, Captain Warner being succeeded by Captain Müller.

On a passage to Sydney under German ownership and command, the *Sovereign of the Seas* showed her old weakness of spars and rigging and lost her topmasts when 40 days out. It is said that "all were replaced and damage repaired in six days" and that the ship reached Sydney after a passage of 84 days, during which a day's run of 410 miles was claimed by Captain Müller, an average of over 17 knots per hour for twenty-four consecutive hours and an asserted maximum speed "occasionally" by log of "22 knots an hour." This is the only passage on which the Germans claimed any high speed for their acquisition, which evidently proved to be "a big and expensive toy for them to play with." On a voyage by way of China, she ran aground near Woosung and had to lighten a good part of her cargo. When floated, she was repaired, and on the passage from Shanghai to England she lost eleven of her crew from cholera; many others were sick, and only fourteen men were well enough to work the big vessel. In 1859, on a voyage from Hamburg bound for China, she ran on the Pyramid Shoal in the Straits of Malacca (August 6) because of faulty navigation and became a total loss. In early 1858, the *Sovereign of the Seas*, after being overhauled by the Germans and conditioned at an expense of about £2,500 (also reported as \$12,000), is said to have been sold to the English for £8,250 (also reported as \$40,000 and as "about 36 per cent of her purchase price of 1854"). However, there seems to be some doubt as to the real ownership of the vessel when lost. Evidently, the reported British owners had not paid cash for her and obtained title, for it is reported that when she was wrecked, she was still under the German flag and being sailed by Germans; J. C. Godeffroy & Son, of Hamburg, employed the American ship *Eloisa* to salvage her and recover a part of the cargo.

The *James Baines* was the best of the McKay-built ships that operated in the British-Australian trade. The *Lightning* was more "ballyhooed" by her builder, her commander,

and the press, but the marine fraternity preferred the "*Baines*" and proclaimed her as the "Queen of the Fleet" notwithstanding one exceedingly slow homeward passage in the fall of 1856. The ship was in no way to blame for this, but was merely unlucky in experiencing light or baffling winds. Capt. James Nicol Forbes, known as "Bully" Forbes, brought out the *Lightning*, and he was "a great publicity hound"—as was evidenced by his speed claims and his slogan on the *Lightning's* maiden passage to Australia, "Melbourne or Hell in sixty days." The Liverpool press acclaimed the *James Baines*, upon her arrival from the United States, as "the finest ship of the Black Ball fleet," which merely substantiates what the BOSTON SEMI-WEEKLY ATLAS of September 2, 1854, said. The English historian, Basil Lubbock, has written:

The *Champion of the Seas* was closely followed by the *James Baines*, considered by most sailormen to have been the finest and fastest of the great McKay quartette. When she loaded troops for India in 1857 and was inspected by Queen Victoria at Portsmouth, the Queen remarked that she did not know she possessed such a splendid ship in her mercantile marine. When she [the "*Baines*"] first arrived in Liverpool, a well-known Liverpool ship-owner wrote to a Boston paper—"You want to

know what professional men say about the ship *James Baines*? Her unrivalled passage, of course, brought her prominently before the public and she has already been visited by many of the most eminent mechanics in the country. She is so strongly built, so finely finished and is of so beautiful a model that even envy cannot prompt a fault against her. On all hands she has been praised as the most perfect sailing ship that ever entered the River Mersey."

It was said by the owners that the *Champion of the Seas*, which Captain Newlands had boasted would prove to be "a faster as well as a better ship than the *Lightning*," was "not quite up to expectations" on her maiden voyage, and this followed "a poor run across the Atlantic of 29 days"—made, however, under "wretched sailing conditions." We are told that "time after time, all her immense canvas yearned for a cupful of wind." Yet the initial run of the "*Champion*" to Australia of 75 days (reported by some authorities, including Lubbock, as 72 days, with the arrival stated as December 22, 1854, instead of December 25) was three days better than the first passage out of the *Lightning* and five days better than that of the *Sovereign of the Seas*. Evidently, what annoyed the Black Ball Line was the comparative sailing performance of the American clipper *Swallow* of 1,435 tons, built by Robert E. Jackson, of East Boston (launched April 4, 1854), which, with Capt. Benjamin W. Tucker in command, sailed from Deal (London) October 12, 1854, and arrived at Melbourne on Christmas Day after a passage reported as "73 days and 18 hours" (from Deal). Tucker claimed that he had beaten the much-vaunted and larger *Champion of the Seas* "by sixteen hours" and the *Belle of the West* (a small clipper of 936 tons built by Shiverick Brothers, East Dennis, Mass.) "by nine days." The relatively slow return passage of the "*Champion*" to Liverpool, occupying 84 days, did not please the owners, but even this run was two days better than that of the *Donald McKay* on her first homeward passage. The *Champion of the Seas*, notwithstanding her round voyage of 159 days (excluding port detentions) as compared with 150 days for the *Sovereign of the Seas*, 142 days for the *Lightning*, and 136 days—the all-time record—for the *James Baines* on their maiden voyages, beat the performance of the big *Donald McKay* on that ship's initial voyage (which required 167 days) by eight days, and the *Champion of the Seas*, we are told, proved to be "a favorite ship among the Liverpool-Australia packets." Other authorities describe her as "a very reliable and popular, fast ship."

The *James Baines* commenced her career auspiciously by making the fastest transatlantic passage of any McKay-built ship, sailing from Boston September 12, 1854, and arriving off Rock Light, Liverpool, on September 25 after a crossing of only 12 days 6 hours from Boston Light. The "*Baines*," on her initial voyage in the British-Australian service, made a record run from Liverpool to Melbourne. Captain McDonnell, reporting on this passage, wrote to the owners:

I have great pleasure in announcing the arrival of the *James Baines* in Hobson's Bay at 8 P.M. on 12th February, making a run of 63 days 18 hours

15 minutes mean time from passing the Rock till the anchor was down in Hobson's Bay. On leaving Liverpool I had strong head winds to contend

with. The 7th day from Liverpool I touched off St. Ives Head; the 10th day I had to tack off Cape St. Vincent and stood to the N.W. In 19° N. in the middle of the trade winds, I got the wind at S.S.E., got to leeward of Cape San Roque and was 18 hours in beating around. I experienced nothing but light northerly winds all the way across. Sighted

Cape Otway on the 54th day from Liverpool; main skysail off the ship only three days from Liverpool to this port. The greatest distance run in 24 hours was 423 miles, that with main skysail and stunsails set. Had I only had the ordinary run of winds, I would have made the voyage in 55 days.

The Melbourne press said that the ship "sailed from Liverpool December 10, was off Rock Light on the 11th, was held back by head winds and did not clear the land until December 16, following which she made a run to port with a passage of 58 days, land to land, which is the record." British historians say that in the entire history of sail the first passage of the *James Baines* of 63 days from Liverpool to Melbourne Harbor has never been beaten and equaled only once, and that by Britain's fast and much later-built ship *Thermopylae*. In 1858, however, the famous American Cape Horner *Young America* (Captain Babcock) was credited with a passage from Liverpool (April 18) to Melbourne (June 20) of 63 days, "equaling the record made by the *James Baines* in December 1854-February 1855." (Cutler records this fast run of the *Young America* as a passage of 71 days and gives the arrival date as June 29, 1858, stating as his authority the ARGUS, of Melbourne, issue of June 30, 1858.) On this maiden passage from Liverpool to Melbourne, the *James Baines* carried "350 sacks of mail containing over 180,000 letters and newspapers, had a passenger list consisting of 80 first-class and 622 emigrants, and carried 1,400 tons of cargo"; her list of livestock included "a bullock, 75 sheep, 86 pigs, and 1,200 fowls and ducks." Pilkington & Wilson, of the White Star Line, with certain Canadian- and United States-built ships (of which the pride of the fleet was the famous *Red Jacket*), contracted with Earl Canning, the British postmaster general, during the fight of sail against steam "for the carriage of mails to Australia" and agreed "to land them in Australia in 68 days or pay a penalty of £100 sterling a day for every day over that time." With the McKay-built clippers in service, James Baines & Company, of the Black Ball Line, signed a contract with the British Government to deliver the mail in 65 days or suffer the same penalty of £100 per day for longer passages. The *James Baines*, on her maiden voyage, carried the mail as well as passengers and cargo as before stated and "got in under the wire by a day."

The *James Baines* did some fine sailing in the Roaring Forties, and her big day of 423 miles was not the only outstandingly good twenty-four-hour run in a day of about twenty-three and a half hours as the following extract from the log shows:

| Date | Position | | Distance Traveled Twenty-four Hours Nautical Miles | Average Speed in Knots per Hour for the Day | Maximum Speed by Log—Knots per Hour |
|---------|-------------------|-------------------|--|---|---|
| | Latitude South | Longitude East | | | |
| Jan. 26 | 48° 02' | 50° 46' | 391 | 16.3 | 18½ |
| Jan. 27 | 48° 56' | 60° 46' | 407 | 17.0 | 19 |
| Feb. 6 | 50° 09' | 123° 40' | 423 | 17.6 | about 20 |

The *James Baines*, on the last leg of her maiden voyage, made a fine run of 69½ days from Melbourne to Liverpool (reported as 69 days). The claim was made—and is generally stated by historians—that on this completed voyage the ship sailed out (from Liverpool to Melbourne) in 64 days around the Cape of Good Hope and home (from Melbourne to Liverpool) around Cape Horn (eastward) in 69 days, making a complete voyage around the globe in 133 days at sea (excluding port detentions), which, it is said, "is the best authenticated sailing ship record for a round-the-world passage."

The *James Baines* sailed from Liverpool April 7, 1856, on her third outward run to Melbourne. Because of poor winds, she did not clear Cape St. Roque until she was 29 days out, but she ran from there to Cape Otway in 48 days, making a 77-day passage to that point. For a full week, she averaged 325 miles per day when running her easting down.

On May 28, the records show that she made "2 degrees 15 minutes of latitude and 8 degrees 7 minutes of longitude, a distance of 404 nautical miles." The log reads: "Brisk gales with occasional heavy squalls and rain and wind increasing." A log entry on June 15, 1856, reads:

Commenced fresh breezes with rain and sleet; at 8 A.M., more moderate. At noon sighted a ship ahead under double reefed topsails, we having main skysail set and going 17 knots. At 1 P.M. alongside the ship, the *Libertas*. At 2 P.M. she was out of sight astern.

A log entry of June 18 tells us:

Wind freshening; at 8 P.M. took in all starboard stunsails; main skysail set; ship taking out 21 knots. Fine clear night; fresh gale until nearly noon with snow squalls.

On June 22, the "*Baines*" was subjected, without any barometer warning, to a terrific gust of wind such as Captain McDonnell and the officers aboard had never before experienced. In a squall that lasted about three minutes, the ship broached to; all the head sails, the foretop and topgallant sails, two sails on the mainmast, and all the staysails were blown away; and the main and main-topgallant yards were carried away. The disaster came without warning, but speeds of 21 knots per hour, even when realized running before favorable gales in the Roaring Forties, were obtained only by taking a measure of risk, and nature is apt to be freaky and upset the judgment and calculations of the ablest and most experienced skipper.

There was but little to choose between the *James Baines* and the *Lightning* if speed alone were considered; however, it was contended by contemporaries, "The *Lightning* is the luckiest, but the '*Baines*' is the fastest ship." As proof of the *Lightning's* outstandingly good fortune, the homeward-bound passages of voyages No. 4 of the *Lightning* and No. 3 of the *James Baines* are cited. English historians tell us: "In the autumn of 1856 there was tremendous sensation in Liverpool when the famous *James Baines*, considered by many to be the fastest ship in the world, was posted as overdue when homeward bound from Australia." She had sailed from Melbourne for Liverpool on August 7, and anxiety in regard to the ship became evident when no word was received of her by the first of November, but why this was so is difficult to explain. An arrival on November 1 would have been an 85-day passage, which should not have been deemed so long as to start panicky rumors that "spread like wildfire until something like consternation began to reign in shipping circles." The time of the last homeward passages of the leading big, fast clippers in the Australian service, prior to the 1856 runs, had been: *Ocean Chief*, 84 days; *Marco Polo*, 86 days; *White Star*, 88 days; *Donald McKay*, 86 days; *Champion of the Seas*, 90 days; *Lightning*, 86 days; and *Red Jacket*, 86 days. The previous passage of the *James Baines* had occupied 85 days. However, she had made a passage home in 1855 in 69 days, and as she had established a great reputation as a sailer, evidently much was expected of her.

The "*Baines*" sailed from Melbourne and through Port Phillip Heads the morning of August 8, 1856. The following day (the 9th) she ran 356 miles, her best run of the entire passage, and after one other good day, in which the ship covered 340 miles, she experienced in her run east to Cape Horn in the Roaring Forties (where strong and favorable westerly winds were to be expected) nothing but "light airs and calms." It took the ship 36 days to reach the pitch of the Cape. (Two years previously the *Lightning*, sailing under extremely favorable conditions, made this run from the Heads to the Horn in 19 days 1 hour.) Upon arrival off the Cape, the "*Baines*," instead of getting the benefit of the anticipated heavy westerly winds, was held up by northeasterly gales, snowstorms, and high, cross seas. After emerging from this ordeal, she experienced nothing but "light and baffling winds" from September 26 to November 8, which further seriously delayed her passage, and when she crossed the line she was 65 days out from Port Phillip instead of "the hoped-for and expected 40 days."

The *Lightning* sailed from Melbourne (Port Phillip Heads) on August 28 (three weeks after the "*Baines*") and, benefiting by more normal sailing conditions, ran to the Cape in 22 days and to the equator in 44 days. On October 30, she caught up with the "*Baines*,"

having gained 21 days on that vessel and, favored by Dame Fortune, having covered in 63 days a distance that the *James Baines* had required 84 days to traverse against adverse sailing conditions. If the *Lightning*—as her command claimed—was a faster ship than the "*Baines*," she should have passed her rival and continued forging ahead through the balance of the passage. But this she did not and could not do. The ships sailed in company in light and erratic winds for a week. The log of the *Lightning* shows that she sighted the "*Baines*" on October 30 far ahead and, bringing up a breeze, caught up with her and passed her. However, after she had logged 131, 137, 56, 134, 113, and 66 miles in the six days from October 30 to November 4 inclusive (a total of only 637 miles in six days and an average speed of only 4.4 knots per hour), the ships were still in sight of each other, with first one and then the other—benefiting by a slant of wind—being ahead. The McKay-built clippers, with the "*Baines*" more deeply laden and the copper on her bottom needing repairs, continued "to sail even to port." Both arrived in the Mersey on November 20, 1856, three weeks after meeting in mid-Atlantic, but the *Lightning* had made an 84-day passage and the "*Baines*" a 105-day passage, or 21 days (three weeks) longer, through no fault of the ship or her commander. The following comparison of the sailing performance of the two ships tells the story, and it will be seen that the entire 21 days that the *Lightning* gained on the *James Baines* were spent south of the equator, both ships making a uniformly slow run of 40 days in light winds from the line to the Mersey.

| Section of Course | JAMES BAINES | | LIGHTNING | |
|-----------------------------|----------------|-----------------|----------------|-----------------|
| | Number of Days | Date of Arrival | Number of Days | Date of Arrival |
| Melbourne to Cape Horn..... | 36 | Sept. 12, 1856 | 24 | Sept. 21, 1856 |
| Cape Horn to equator..... | 29 | Oct. 11, 1856 | 20 | Oct. 11, 1856 |
| Equator to Liverpool..... | 40 | Nov. 20, 1856 | 40 | Nov. 20, 1856 |
| Total passage | 105 | Nov. 20, 1856 | 84 | Nov. 20, 1856 |

From the LIGHTNING GAZETTE, the official publication circulated among the passengers of that ship (and either written or edited by Captain Enright), are culled the following extracts:

Thursday, 30th October. At 7 A.M. a large ship ahead of us. Great excitement and numerous conjectures. One thing certain that she sailed almost as fast as ourselves. By sunset we had both weathered and gained on our companion.

Friday, 31st October. Early dawn showed our friend much nearer. At 8 A.M. she at last responded to our signals by hoisting the "Black Ball" at the mizzen and a burgee at the gaff with her name—*James Baines*. Great excitement spread throughout the ship and conversation was divided between sympathy for all on board our unfortunate predecessor and conjectures as to the cause of her detainment. All day we were watching her every movement; now she gains, now we near her; now she "comes up" and now "falls off."

Saturday, 1st November. During Friday evening, the wind being still very light, we passed to windward of the unfortunate *James Baines* so closely that we could hear the people on board. Our passengers made amiable offers to take them in tow and promised to "say they were coming" on our arrival at Liverpool. At 9 A.M., the breeze freshening, we all [which included the bark *Cid* and a brig then in sight] started on a race. The clipper sisters were now once more pitted against each

other; the far-famed *Lightning*, with concave lines and breadth of bilge, in our opinion the worthy Donald's brightest idea, and the champion—the ship of 21 knots' notoriety—the *James Baines*. In light winds or airs we had crept by him; now, as the breeze freshens, we behold the little brig and barque going astern, but at 2 P.M. the *James Baines* is just discernible from the deck; at the lowest computation we have beaten her at the rate of 1½ knots per hr. It was generally supposed on board that her copper must have been much worn or rough or we never could have beaten so rapidly a ship of such noble appearance and well-known sailing qualities.

Sunday, 2nd November. Another day of light winds, heading us off to N.N.W. still. Evening a little more wind, ship going about 7 knots.

Monday, 3rd November. In the middle watch wind backed to N.E. and fell light again. At 8 improvement again and by noon we lay N.E. by N., the best we have done for some days, but only going from 4½ to 5 knots. A ship coming up astern, supposed to be the *James Baines*.

Tuesday, 4th November. Very light airs from the north, our ship on the port tack. Our friend *James Baines* again in sight astern.

On Saturday, according to the statement of the command of the *Lightning*, that ship was outsailing the *James Baines* better than 1½ knots per hour, and the "*Baines*" was barely discernible astern; three days later, instead of being hopelessly out of the race and some hundred miles behind, the "*Baines*" had gained on the *Lightning* and was close behind her as they both beat against a light adverse wind.

The McKay clippers did their best sailing with favorable heavy winds and gales if there was not too much of a sea running. Lubbock writes, "Donald McKay's ships were never light weather flyers, in spite of setting every kind of light weather kite, from tiny 'bulldog,' as they called the moonsail on the main, to the lowest watersail that barely cleared the wave crests." He adds that, in comparing the speeds of the rivals *James Baines* and *Lightning*, it is necessary to study their performance in heavy as well as light weather and that under conditions of heavy winds and seas "the *James Baines* had the best of it."

The logs of the *Lightning* give some information of interest in the form of a "table of winds" in relation to the length of the passage, which has been incorporated into the following table:

| | Voyage No. 3 | Voyage No. 4 | Voyage No. 5 |
|---|--------------------------------------|--------------------------------------|------------------------------------|
| Date of passage—homeward run from Melbourne to Liverpool..... | Dec. 28, 1855 to Mar. 23, 1856 | Aug. 27, 1856 to Nov. 20, 1856 | May 6, 1857 to July 31, 1857 |
| Length of passage..... | 86 days | 84 days | 82 days |
| Run from Melbourne to Cape Horn..... | 22 days | 24 days 16 hours | 31 days |
| " " Cape Horn to equator..... | 29 " | 19 " 8 " | 25 " |
| " " equator to Azores..... | 14 " | 29 " 0 " | 15 " |
| " " Azores to Liverpool..... | 21 " | 11 " 0 " | 11 " |
| Fair winds experienced..... | 26 days | 32 days | |
| Light winds experienced..... | 19 " | 23 " | Not stated.* |
| Calms experienced..... | 17 " | 4 " | |
| Head winds experienced..... | 24 " | 24 " | |

*75 days on the starboard tack, or over 90 per cent of the voyage.

Longest day's run, 384 miles; shortest day's run, 25 miles; best week's run, 1,723 miles; best speed for 24 hours, 16 knots per hour; lowest speed for a day, 1.04 knots per hour; best average speed for a week's run (July 11-17 inclusive), 10.25 knots per hour.

The variableness in the length of time required between points on these three consecutive passages of the *Lightning* from Melbourne to Liverpool is very conspicuous. The difference between the fastest and the slowest time between points on these three voyages was as follows:

| | Fastest of Three Runs | Slowest of Three Runs | Ratio Slowest to Fastest Run |
|---|--------------------------|--------------------------|------------------------------------|
| | <u>Days</u> | <u>Days</u> | |
| From Melbourne to Cape Horn..... | 22 | 31 | 1.41 |
| " Cape Horn to equator..... | 19½ | 29 | 1.40 |
| " equator to Azores..... | 14 | 29 | 2.07 |
| " Azores to Liverpool..... | 11 | 29 | 2.64 |
| Total..... | 66½ | 118 | 1.78 |
| Actual times for complete passages..... | 82 | 86 | 1.05 |

On the outbound passages from Liverpool to Melbourne earlier in the same year (1856), we can draw a comparison of the relative sailing ability of the same two McKay clippers from a study of each vessel's best week of sailing—when they were both favored with good winds and rather heavy weather.

| Name of clipper..... Date | JAMES BAINES May 25-31, 1856 | | | | LIGHTNING June 28-July 4, 1856 | | | |
|--|---------------------------------|-----------------|------------------------------|----------------------|-----------------------------------|-----------------|------------------------------|----------------------|
| | Day of the Week | Day's Run Miles | Average Speed Knots per Hour | Accumulative Mileage | Average Speed Knots per Hour | Day's Run Miles | Average Speed Knots per Hour | Accumulative Mileage |
| First day | 328 | 13.70 | 328 | 13.70 | 232 | 9.60 | 232 | 9.60 |
| Second day | 320 | 13.30 | 648 | 13.50 | 312 | 13.00 | 544 | 11.30 |
| Third day | 384 | 16.00 | 1,032 | 14.30 | 281 | 11.70 | 825 | 11.50 |
| Fourth day | 404 | 16.80 | 1,436 | 15.00 | 298 | 12.40 | 1,123 | 11.70 |
| Fifth day | 240 | 10.00 | 1,676 | 14.00 | 319 | 13.30 | 1,442 | 12.00 |
| Sixth day | 300 | 12.50 | 1,976 | 13.70 | 382 | 15.90 | 1,824 | 12.70 |
| Seventh day | 300 | 12.50 | 2,276 | 13.50 | 364 | 15.20 | 2,188 | 13.00 |
| Total for the best week of the passage | 2,276 | 13.55 | 2,276 | 13.55 | 2,188 | 13.02 | 2,188 | 13.02 |

In 1857 the *James Baines* regained her reputation for fast sailing and turned the tables on the *Lightning* by making a homeward passage from Melbourne to Liverpool in 75 days as against an 82-day passage by the *Lightning*. Following these runs, both of these fast clippers, together with their running mate, the *Champion of the Seas*, were taken over by the British Government and sent out to Calcutta with troops to quiet the Indian mutiny. Prior to the temporary withdrawal in 1857 of the "*Baines*" and *Lightning* from the Australian run, the two clippers had made four and five round voyages, respectively, between Liverpool and Melbourne. By using the figures for the length of the passages out and home as reported in the contemporary English and Australian press and as recorded by British marine historians, the following comparison of sailing performance of the two ships is available:

| Year | Length of Passages in Days | | | |
|--|----------------------------|------------------|------------------|------------------|
| | Outbound | | Homebound | |
| | LIGHTNING | JAMES BAINES | LIGHTNING | JAMES BAINES |
| 1854 | 78 | | 64 | |
| 1854-1855 | 73 | 64 | 79 | 69 |
| 1855-1856 | 81 | 79 | 86 | 85 |
| 1856 | 69 | 78 | 84 | 105 |
| 1857 | 69 | 74 | 82 | 75 |
| Average length of passages in days.. | 74 | 73 $\frac{3}{4}$ | 79 | 83 $\frac{1}{2}$ |
| Average length of passages in days, eliminating homeward run in autumn of 1856—not comparative between ships | 74 | 73 $\frac{3}{4}$ | 77 $\frac{3}{4}$ | 76 $\frac{1}{3}$ |

Much was said in England in the 1850's of "Melbourne in sixty days." Capt. "Bully" Forbes made immortal the slogan, "Melbourne or Hell in sixty days," but neither he nor any other commander of any sailing vessel reached Melbourne from any British port in that time. When the *Sovereign of the Seas* made a passage of 80 days (claimed 78 days) from Liverpool to Melbourne in 1853 (September 7-November 26), the two ports were considered "three months apart" for the fastest ships. As late as 1852, the English hailed the passage of the Quebec-built "clipper" ship *Gipsy Queen* from London to Sydney in 102 days as "one of the shortest runs known," and on this passage the "*Queen*" was credited with "beating the fast Scotch clipper *Phoenician* by five days." Before the Canadian-built *Marco Polo* (Capt. "Bully" Forbes) made her record passage outbound of a claimed 68 days in 1852, a run out of 90 to 100 days to Melbourne was considered good for any sailing vessel. The much-heralded and unquestionably fast yacht-like American clipper *Nightingale*, sailing from Boston October 18, 1851, over a slower course from a western North Atlantic

port, had taken 90 days on her initial passage to Melbourne. Incidentally the recorded times of departure and arrival of the *Marco Polo* point to a 76-day and not a 68-day passage as claimed. The Liverpool press and posters advertised the ship to sail on June 21, 1852. It is said that she was delayed and "did not actually leave the Mersey until Sunday, 4th July." Her arrival "inside Port Phillip Heads" is given as "11 A.M. on 18th September, 1852," and this makes a 76-day passage from the Mersey to Port Phillip. The best outward passages from England in the fall of 1852 were three of 92, 92, and 95 days, respectively, and in 1853 the passages from English ports to Melbourne reported "good" and "among the best" included four runs of 92 days, one of 91 days, and one of 90 days. The *Marco Polo* was boldly advertised by James Baines & Company and the Black Ball Line of Australian packets as having "proved herself the fastest ship in the world, having made the voyage to Melbourne and back, including detention there, in 5 months and 21 days," and having beaten "every other vessel, steamers included" (actually 76 days out and 76 days home, with a 23-day port detention and a total of 175 days from Rock Light back, or 5 months 22 days from the stated dates of July 4 to December 26). She made her second outward passage (Captain Forbes in command) in 1853 in 77 days (March 13-May 29; claimed as a 75-day run) and returned in 95 days (June 10-September 13), the entire round passage occupying six months. (The Pook-designed, United States-built *Red Jacket* made the round voyage between Liverpool and Melbourne in 1854 in 5 months 10 days 22½ hours, including detentions.) The "*Polo's*" next outward passages were of 84, 95, 82, 83, and 89 days, respectively, giving an average for her first seven passages between Liverpool and Melbourne of 84 days; the average length of the five homeward passages of the *Marco Polo* for which records are available figures also 84 days (longest, 95 days; shortest, 76 days).

According to British records, the average length of the best twenty-five outward passages (evidently from pilot to pilot) from English ports to Melbourne during a sixteen-month period from October 12, 1852, to February 14, 1854, was reported as 84⅓ days (excluding the passage of the McKay clipper *Sovereign of the Seas* made in the fall of 1853). Commencing with the record run of the American clipper *Red Jacket* in 1854 (May-July), stated as 67 days, the reported thirty-nine "best outward passages" up to the 1856 (September-December) passage of the *Marco Polo* in 89 days, as tabulated by Lubbock, give the following averages for length of time from Liverpool to Melbourne:

| Outbound Passages of | Number of Considered Passages | Length of Passages in Days | | |
|---|-------------------------------|----------------------------|------|---------|
| | | Average | Best | Slowest |
| Donald McKay-built ships | 11 | 76-7/11 | 64 | 85 |
| Other U.S.A.-built ships..... | 7 | 74-6/7 | 67 | 85 |
| Total U.S.A.-built ships..... | 18 | 76 | 64 | 85 |
| Canadian- and British Empire-built ships..... | 21 | 82-1/3 | 73 | 95 |
| Total of all "best" passages..... | 39 | 79.8 | 64 | 95 |

The above figures are unfair to the McKay-built clippers as far as their sailing performances compared with those of other U.S.A.-built and British Empire-built ships are concerned; for Lubbock has tabulated every sailing of the four McKay-built clippers (*Lightning*, *James Baines*, *Champion of the Seas*, and *Donald McKay*) made during the period, but only the "best" passages of other American- and of all British Empire-built ships have been considered, and the best passages of the British ships were made by clippers built in Canada, such as the *Marco Polo*, *White Star*, *Indian Queen*, *Shalimar*, and the big New Brunswick-built clipper *Morning Light* of 2,377 tons, credited in July-September 1856 with a passage of 73 days. Whereas eleven outward passages from Liverpool to Melbourne in the period covered averaged, as variously reported, from 76½ to 76-9/11 days and seven "other U.S.A.-built ships," as reported, averaged passages of only 74-6/7 days, there were

sixteen runs made between the dates stated by U.S.A.-built clippers (excluding the large Black Ball liners built by Donald McKay), and their average time between ports was $81\frac{7}{8}$ days. The length of twelve such passages made under average sailing conditions was 77 days, which is about the same as the scant 77 days required by the McKay-built clippers on their eleven outbound runs. The average length of passage from a British to an Australian port of all sailings of British Empire-built ships was far in excess of the $82\frac{1}{3}$ days, which considers only the "best" runs recorded by Lubbock, and most British-built ships required 90 days or more.

During the Sepoy Mutiny, the *James Baines*, *Champion of the Seas*, and *Lightning* were chartered by the British Government to carry troops to India—a long sea journey around the Cape of Good Hope, as the Suez Canal was not built. On July 30, 1857, the "*Baines*" went to Portsmouth and on August 8 sailed for Calcutta, leaving port shortly after the *Champion of the Seas*. The following is an extract from an article in the British press, by the Portsmouth correspondent of the *TIMES*, printed under the caption, "Royal Visit":

The clipper-ships *James Baines*, Capt. McDonnell, and *Champion of the Seas*, Capt. McKirdy, of the Liverpool and Australian Black-Ball Line, belonging to Messrs. James Baines & Co., arrived at Portsmouth on Monday morning from Liverpool. No ships that ever entered Portsmouth Harbor created so much curiosity among men-of-war's men as these great merchantmen. High and low have been on board to visit them, and the Port Admiral, Sir George Seymour, expressed his unqualified astonishment at examining the speed logged by these mercantile clippers. The *James Baines* will take in nearly 1,000 of the 97th and other troops and the *Champion of the Seas* a like number of the 20th foot and other regiments on Thursday, for India. They are equipped with the latest modern improvements. They are each about 2,500 tons burden, 45 feet in breadth, and 285 feet in length, and very handsome. We have never had any ships in this harbor which have created such interest as these, for they have been visited by the best sailing and gunnery officers of the navy, and all have expressed their admiration and astonishment at their capacious stowage, airy and ample accommodation, and the unprecedented speed chronicled in their logs.

Their great fame having reached her Majesty through the public journals and the reports of the authorities, . . . her Majesty on Tuesday morning communicated her desire to the naval and military commanders-in-chief at Portsmouth that the embarkation of the troops might not take place until she had inspected them and the ships destined to carry them to their destination. . . . Her Majesty was conducted by Col. Wright to the *James Baines*, where she was received by Capt. McDonnell and Mr. T. M. Mackay at the gangway and conducted by them over this noble clipper. . . . On taking leave, her Majesty expressed herself much gratified by the visit. She had no idea there were such vessels engaged in the merchant service and complimented Mr. Mackay and the captain individually on the size and equipments of the *James Baines* and the *Champion of the Seas*. We congratulate Messrs. James Baines & Co. on the high honor that has been paid them and look forward with some hopes to the time when the vessels now employed in the merchant service of Liverpool will be looked upon with more favor by government officials. For the transport or other service, no better ships can be employed.

An article in the *ILLUSTRATED LONDON NEWS* reported that the steamship *Oneida*, homeward bound, passed the *James Baines* en route for India. It continued: "When met by the *Oneida* on the 17th of August on her way to Calcutta with troops, she presented a most magnificent appearance, having in addition to her ordinary canvas, studding sails, skysails, and moonsail, set and drawing, in all thirty-four sails, a perfect cloud of canvas; the troops all well and cheering lustily as the vessels passed each other." We are also told that the "*Baines*" was then 9 days out, with the *Champion of the Seas* "not far astern," and that both vessels were "making great headway." However, what gave promise of being a great ocean race became, in fact, no race at all, as the big McKay clippers reached the Indian Ocean and the Bay of Bengal at the worst season of the year for sail and had "to try to ghost along in cat's-paws and zephyrs," making exceedingly slow progress "under fluky air conditions." Lubbock implies that the "*Baines*" commenced her passage two days after the "*Champion*," for he says, "Both ships arrived off the Sandheads on the same day, the *James Baines* being 101 days out and the *Champion of the Seas* 103." This cannot be correct, for the steamship *Oneida*, in passing the "*Baines*" when that ship was 9 days out, also passed the "*Champion*" not many miles astern.

Other authorities say that the *James Baines* and *Champion of the Seas* arrived at Calcutta together. We read of two McKay clippers in company "racing up to the Sand Heads" and also of "the two magnificent big ships sailing up the river together," but confusion exists on the part of contemporary writers and of later historians. A great fleet of sailing ships engaged in the emergency transport service, and some other big clipper may have been mistaken for one of the McKay-built Black Ball trio. Howe and Matthews, the Boston marine historians, make several contradictory statements, such as that the "*Champion*" made the passage in 101 days and that the "*Baines*" "arrived two days later, 102 days out"—a very evident error. They also say that the "*Baines*" "arrived off the mouth of the Hooghly River in 103 days," but another assertion that they make is probably more nearly correct. This reads, "The *James Baines* and *Champion of the Seas* were 101 and 103 days, respectively, on the run." However, these same authorities try to reconcile the old report that two big McKay clippers sailed up to Sand Heads, or up the Hooghly River, together by identifying these ships as the *Champion of the Seas* and the *Lightning*—not the *James Baines*. It would seem that the "*Baines*" left England August 8 and arrived at Calcutta November 17 after a passage of 101 days; that the "*Champion*" was off Sand Heads on November 19—103 days out and a day before the *Lightning's* arrival, which was reported as November 20. If the *Champion of the Seas* and *Lightning* sailed up the river together, it was at least three days after the *James Baines*, and the "*Champion*" must have been subjected to delay after reaching the pilot grounds. In any event, no two of the three McKay clippers could possibly have been seen participating in "an exciting race" with each other "up to the Sand Heads."

The *Lightning*, always a fortunate ship, sailed from England on August 25, 1857, with 650 officers and men of the 7th Hussars aboard (the "*Baines*" carried about 1,000 and the "*Champion*" over 900) and made a good passage of 87 days from Spithead to Sand Heads, not experiencing the handicaps that held back her sisters and many other sailing ships that left England in July and early August. While the time of passage of the *James Baines* and *Champion of the Seas* has been stated as from 101 to 103 days and that of the *Lightning* as 87 days, British marine historians give the average length of passage of the sailing transports from Spithead to Sand Heads as 120 days, with the average for the auxiliary screw-propelled ships $96\frac{3}{4}$ days and for the full-powered screw steamships 83 days.

The "lucky *Lightning*" made better time than any other sailing vessel on the run from England to India with troops in 1857, for she was "peculiarly favored by winds." However, the return passage to England was "another story," and whereas on the run home the *Lightning* made an average and unheralded passage, the *James Baines* established a record of 77 days between Calcutta and Liverpool. Leaving Sand Heads on January 29, 1858, the "*Baines*" reached Liverpool on April 16 and lowered the record by several days. Unfortunately, however, this was the last passage of the *James Baines*, and "the noblest ship of the Black Ball fleet" both commenced and ended her sea life by making splendid record runs between long-distance ports. After arriving in the Mersey on April 16, 1858, with a good cargo from India, the *James Baines* was hauled into the Huskisson Dock and proceeded promptly to discharge. The cargo in the 'tween decks was unloaded, and on April 21 the hatch covers to the lower holds were taken off in the presence of surveyors. Apparently, everything was in first-class condition. The next morning, however, smoke was seen coming out of the main hatch, and all efforts to get at and quench the fire proved futile. The yards, light spars, rigging, stays, etc., were cut away, and when the fire engines produced no visible effect, the ship was scuttled. The tide receded, however, and the fire ran the length of the vessel and burned down to the water's edge. The masts fell over the side, damaging two sheds, and the vessel became a total loss. According to the press, the wreck looked "like a huge cinder in the Huskisson Dock." The cargo remaining on board at the time of the fire consisted of 2,200 bales of jute, 6,213 bags of linseed, 6,682 bags of rice, and 40 bales of hides. The wreck was sold at auction for £1,080 sterling, and the value of the ship and cargo destroyed

was set at £170,000, or about \$825,000. Lubbock says: "The loss of this magnificent ship was considered as a national disaster. Since that date, thousands and thousands of people have boarded the *James Baines* without knowing it, for the old Liverpool Landing Stage was none other than the wreck of the celebrated clipper."

The first of the McKay-built Baines quartet of clippers, the *Lightning*, designed and built for the British-Australian Black Ball Line (operating between Liverpool and Melbourne), was launched eight days after McKay's biggest ship, the *Great Republic*, burned at the loading dock in New York before she had a chance to show what she could do under canvas. This leviathan of sail, like the *Great Eastern* ("the world's biggest steamship"), which followed her, were both designed and built for the British-Australian trade, and neither ever made a run in that service.

The following is a comparative statement giving particulars of the four clippers built at East Boston for James Baines & Company for the British colonial Black Ball Line:

| Name of Clipper and First Captain | Date Launched | Tonnage | Dimensions in Feet and Inches | | | | | Sailed from U. S. A. | End |
|--|---------------|---------|-------------------------------|------|----------|--------------|---------------|--------------------------|---|
| | | | Length | | | Beam | Depth of Hold | | |
| | | | Keel | Deck | Over-all | | | | |
| LIGHTNING (Capt. James N. Forbes) | Jan. 3, 1854 | 2,084 | 220 | 233 | 243 | 44-0 extreme | 23-0 | Feb. 18, 1854 (Boston) | Burned and destroyed at Geelong, Melbourne Harbor, Oct. 31, 1869. |
| CHAMPION OF THE SEAS (Capt. Alexander Newlands) | Apr. 19, 1854 | 2,447 | 238 | 252 | 262 | 45-6 | 29-2 | June 16, 1854 (New York) | Foundered off Cape Horn—loaded with Peruvian guano—bound for Ireland, Jan. 3, 1876. |
| JAMES BAINES (Capt. Charles McDonnell) | July 25, 1854 | 2,525 | 236 | 255 | 266 | 44-9 | 29-0 | Sept. 12, 1854 (Boston) | Burned at dock, Liverpool, Apr. 22, 1858, and condemned. |
| DONALD MCKAY (Capt. H. Warner) | Jan. 1855 | 2,595 | 240 | 258 | 269 | 46-3 | 29-5 | Feb. 21, 1855 (Boston) | Sold to Germans on Sept. 13, 1879; later coal hulk at Bremerhaven. |

The second of the four real clippers built by McKay for Baines was quite different from the pioneer of the fleet—the *Lightning*. Baines sent Capt. Alexander Newlands to East Boston to advise McKay in regard to what was required by the owners (and the Australian packet trade) and to superintend the construction of the "*Champion*." It was the consensus of opinion that the second ship of the Baines quartet was "a handsomer vessel than her predecessor, a more practical ship, and less of a racing machine." The *James Baines* and *Donald McKay* followed along the general lines and arrangement of the "*Champion*," but the *Donald McKay*, the last of the quartet, on demands emanating from Liverpool, was made less sharp and a better carrier than her predecessors. It was said that, of the four ships, "the *Lightning* was the most spectacular, the *James Baines* the finest looking and the fastest reliable sailer under all conditions of sea, and the *Donald McKay* the best carrier, but the slowest sailer of the American-built quartet." Unfortunately, the *James Baines* was burned at Liverpool on April 22, 1858, when only three and three-quarters years old, and the *Lightning* also was burned in port (Melbourne Harbor) on October 31, 1869, when about fifteen years and ten months old. The *Champion of the Seas* was sold by Baines's Australian Black Ball Line after fifteen years of service (in 1869) to T. Harrison & Company, Liverpool, for £9,750 and became a general trader. She was again sold at Liverpool in July 1873 (when nineteen years old) for £7,500 and rated A-1 for four years, but notwithstanding this rating, her timbers were much rotted and

the vessel in bad shape. On a voyage from St. John, New Brunswick, to England, she had to put into Boston on September 30, 1873, in a leaky condition and discharge part of her cargo. Continuing the passage, she was again obliged to put into port (this time at Queenstown), as the leaks were beyond the capacity of the pumps to handle. After repairs had been made, the ship did some fast sailing and arrived at San Francisco on July 18, 1875, after a trans-pacific run of 39 days from Hong Kong. However, she was evidently "pretty well worn out," for she was abandoned in a sinking condition off Cape Horn on January 3, 1876, and foundered when twenty-one and three-quarters years old. (On March 5, 1872, McKay's biggest ship, the *Great Republic*, had met a similar fate in the North Atlantic off Bermuda.)

The *Donald McKay* was registered as owned by Thomas J. Harrison, of Liverpool, during the years 1868-1874, so the ship was evidently withdrawn from the Australian Black Ball Line after some thirteen years of service. In 1874, Harrison sold the *Donald McKay* at auction in London, and she was purchased by J. S. De Wolfe, of Liverpool, the price paid for the vessel when she was twenty years old being £8,750. The *Donald McKay* had a hull superior to that of the *Champion of the Seas*, for the "*McKay*" did some good service transporting troops between England and India and the Mauritius in 1875-1876. It is said that she took a thousand troops from Portsmouth to Mauritius in 70 days. Historians tell us that she was "a big, heavy ship but a great carrier, a fine sea boat and a reliable sailer that averaged good passages that were fast for a ship of her type." In 1867, after thirteen years of hard service, she made a passage out to Hobson's Bay, well laden, under average sailing conditions in 84 days. On September 13, 1879, when twenty-four and two-thirds years old, the *Donald McKay*, as the last of the Baines American-built clippers, was sold to the Germans, and later the hull was used as a coaling hulk at Madeira and, it is also said, at Bremerhaven.

In addition to the before-mentioned "out-and-out" clippers, the two fuller-modeled and more moderately sparred "medium" clipper packets purchased by James Baines & Company, Liverpool, from Donald McKay while they were on the building stocks can be described as follows:

| Name of Ship | Launched | Tonnage | Dimensions in Feet and Inches | | | End |
|---|----------|---------|----------------------------------|-------|-------|---|
| | | | Length | Beam | Depth | |
| COMMODORE PERRY | 1854 | 1,964 | 212-0 | 44-11 | 29-0 | Burned and destroyed—loaded with coal — off Bombay Aug. 27, 1869. |
| JAPAN (originally named GREAT TASMANIA) | 1854 | 1,964 | 212-0 | 44-11 | 29-0 | Condemned and sold at Port Louis (about mid-sixties). |

As before stated, the "*Perry*" and *Japan* were designed and being built at East Boston in 1854 for a proposed McKay transatlantic line of sailing packets, and whereas known as clipper packets and described as "medium clippers," they were more of the developed Western Ocean packet ship type than clippers. They had flat floors, medium full models, with a particularly buoyant fore body, and big flare above the normal load water line; they were designed to carry big cargoes, either weight or bulk, over a heavy weather course at a fair rate of speed. The *Commodore Perry* is credited with making a very fast run between Liverpool and Sydney (claimed as a record at the time), and it is said that when she crossed the Atlantic from Boston to Liverpool on her maiden run under canvas, in ballast (drawing only 12½ ft. of water), "she distanced every craft that sailed in company with her." Neither of these ships was given any prominence by contemporary writers, builders, or owners, so but little is known of their history.

*The SCHOMBERG—the Only Large Wood Clipper Ship Built in Britain—an
Admitted Failure That Was Lost on Her Maiden Passage
from Liverpool to Melbourne in December 1855*

James Baines, the Liverpool shipowner interested in the Australian (British colonial) trade, encountered a good deal of criticism in Britain when he ordered and purchased six big ships from Donald McKay and gave this business to an American instead of to British yards. So much national ill-feeling developed that, while aimed at Baines, it threatened seriously to affect the operations—volume of business and profits—of the Liverpool-Australia Black Ball Line. James Baines & Company felt compelled to discontinue relations with American shipbuilders and, after the contract for the *Donald McKay* was placed, did no further business with "foreign shipbuilders."

Aberdeen was the point of origin and home of the earliest so-called clippers in Britain, and that port bears the same relation to clipper ship construction, operation, and historical association and tradition in the British Isles that Baltimore does in the United States. In both cases, the early reputedly fast merchant sailing craft of Britain and America—popularly referred to as clippers—were small yacht-like vessels of a privateer or illegitimate trade type, where every other feature of design, such as carrying capacity, was sacrificed in efforts to obtain high speed and handiness. Prior to the fifties of the nineteenth century, both Aberdeen and Baltimore enjoyed a great reputation for building small speedy sailers, but neither was able to maintain its position of leadership when vessels of large tonnage were demanded by the trade. When the building of large, real clippers commenced in the U.S.A. at the mid-century, Baltimore was rapidly eclipsed and during the clipper ship decade, 1850-1859 inclusive, passed into oblivion. Aberdeen, in Britain, survived as an active shipbuilding center of fast merchant sail much longer, for British clippers were much smaller than American ships, and British tea clippers built until 1870 (primarily of wood or composite construction) were the type and size of ship that Aberdeen was equipped and well prepared by experience and tradition to produce. When iron supplanted wood as the prime shipbuilding material (and composite construction with its wood planking over iron framing was discontinued), Aberdeen made heroic attempts to maintain itself as a prime British shipbuilding center, and as long as Australian iron wool clippers were built, Aberdeen produced its share, launching such ships until 1885. However, these British wool clippers were not large vessels, the average tonnage of the fourteen built at Aberdeen during the years 1869-1885 inclusive being 1,424 tons (eleven were built by Hall, averaging 1,334 tons, in the years 1869-1881, and the last three, built in 1882-1885, averaged 1,754 tons and were built by Hood). When the demands of the trade called for sailing ships of iron or steel of 2,000 tons or more, Aberdeen passed out of the picture as a shipbuilding center, and the Clyde, on the west coast of Scotland, supplanted not only Aberdeen, on the east coast of Scotland, but also the Thames and Mersey of England as well. The Clyde was never much of a shipbuilding center during the days of either wood or composite construction, but when iron ships commenced to be built in quantity and of size, it rapidly gained a position of prominence, and when iron steam supplanted sail, the Clyde, with its Scotch engineers, assumed leadership not only in Britain but also in the world.

To pacify the British public and government, which criticized the Black Ball Line of Liverpool severely for its lack of patriotism and anti-British sentiments, acts, and associations, James Baines & Company placed a contract in the fall of 1854 with Alexander Hall, of Aberdeen, Scotland, the builder of the best British tea and coastwise clippers, for "a monster emigrant clipper of 2,600 tons that will outsail any ship afloat." In 1854, James Baines said that his company (or line) was "most desirous of building our ships in Britain," and he was "sure that British ships would more than hold their own with the very best of the clippers built

in the States," provided British yards would turn out ships big enough for the trade. In placing a contract with Hall, of Aberdeen, Baines specified that the ship to be built should be "a copy of a McKay clipper." The Scottish builder guaranteed to produce a ship that would "be faster than any clipper built by Donald McKay, Wm. H. Webb, George Thomas, Robert E. Jackson, or any other American builder in the States or in the Dominion [of Canada]" and, moreover, would not only be as good or as strong as an American ship but also "positively of better and stronger construction and of longer life." Hall certainly endeavored to carry out the spirit of his contract and live up to his formal guarantees and verbal statements, and the result was a very expensive ship.

It is said that the *Schomberg* cost, when ready for sea, the big sum of £43,103, or some \$209,500 (\$91.70 per ton). Assuming that the ship would have measured 2,550 tons if under American register (about the same as the United States-built *James Baines* and *Donald McKay*), the price per ton would have figured about \$82.00, which was about 53 per cent per ton more than McKay asked for his *Sovereign of the Seas* (2,421 tons) when he tried to sell her to the Liverpool Black Ball or White Star lines for \$130,000 in 1853 and 80 per cent per ton more than the price that he received for the ship when he finally disposed of her to the Germans a year later. The clipper ship *Schomberg* was the largest and, in fact, the only large wood sailing ship built in Britain and the only one at all comparable in size and designed power with the great fleet of big American clipper ships. The 2,600 tons referred to by James Baines when placing the contract was "builder's measurement," and the tonnage for payment of dues was stated as 2,492 tons and the registered tonnage as 2,284 tons. The *Schomberg* had about the same dimensions as the last three of the McKay-Baines clippers, measuring 262 ft. long between perpendiculars (288 ft. over-all), 45 ft. beam, and 29.2 ft. depth of hold. The builder of the *Schomberg* (Hall, of Aberdeen) made extravagant claims as to both expected speed and the vessel's "novel and superior construction." She had three courses of outside planking, two diagonal, or "on the slant," and one longitudinal, or fore and aft, the whole fastened together with screw-threaded hardwood trunnels—a novelty in shipbuilding. The vessel was heavily sparred and rigged, with a mainmast and main yard each 110 ft. long (2.44 times the beam of the ship). Baines proclaimed her the flagship of the big fleet of the Black Ball Line and placed his commodore, Capt. "Bully" Forbes, in command, taking him from the fast and record-breaking American-built clipper *Lightning* to be master of the *Schomberg*, "Britain's and the world's fastest and best merchant ship." The famous and notorious "Melbourne or Hell" Forbes had done good work with the *Marco Polo* and gained laurels with the *Lightning*—both fast ships. Baines, as well as the British public (and government), expected him to do a great deal with the *Schomberg*, and they looked forward to and confidently predicted "a round voyage in 4½ months with better than 60-day passages and less than 120 days at sea." The sailing of the ship from Liverpool, October 6, 1855, on her maiden voyage to Australia—with the proud boast generally advertised of only "Sixty Days to Melbourne" and canvas carrying this slogan conspicuously stretched aloft—was made a great festival and a patriotic occasion.

Americans are accused by the British generally of being "blustering braggarts," but "Bully" Forbes could beat any Yankee skipper of the nineteenth century in vainglorious boasting. When the *Marco Polo* returned from her first Australian voyage, he had painted in big letters on her canvas that she was "the fastest ship in the world." When he took out the *Schomberg* on her maiden voyage, he boasted that he, with the owners, passengers, and guests then on board, had the honor of being on a "British ship from keel to truck" that would end the days of American leadership in the building of fast, big merchant ships and the few brief years of "Yankee supremacy" and restore England once more to her throne as "undisputed Mistress of the Seas" in commerce as well as naval (military) power. Forbes, pointing to the large painted canvas sign, "Sixty Days to Melbourne," conspicuously displayed overhead, said, "I expect to do better than that." He is also reported to have said to enthusiastic Britishers as the ship was hauled through the pier heads at Liverpool to com-

mence her maiden voyage, "This thoroughly British ship will outsail and outlast any clipper built by the Yankees"; but he was wrong. James Baines also pleased the patriotic Britishers with his remarks concerning the vessel, her builder, and Aberdeen-built clippers in general before the *Schomberg* sailed, but how much of what he said was honest and actually felt and how much was pure propaganda aimed at getting himself and his Australian packet line back in public favor (while his fleet of U.S.A.-built big clippers was being placed and operated in the Black Ball colonial service), it is difficult to say. Both Owner Baines and Captain Forbes are credited with making most extreme pro-British claims and statements which, while pleasing the egoism and bigotry of the British, proved to be not only untrue but also ridiculous. The *Schomberg* was the last, as well as the first, large-sized wood sailing ship built in Britain. She was a disappointment and a failure. The result of the ship's first passage under canvas was an unprecedented and costly experience for her owners and ruined the reputation of the boastful and colorful Capt. "Bully" Forbes; also, it definitely discouraged both shipowners and shipbuilders in the British Isles from attempting to build any more large wood merchant ships.

Notwithstanding the claims of the builders, the fanatical and bigoted, optimistic statements emanating from the British marine fraternity and prejudiced press, and the hopes of James Baines, the Liverpool shipowner (a valued patron of Donald McKay, of East Boston, Mass.), the big British clipper, from the start, was a great disappointment under canvas. She was, apparently, a vessel of merely ordinary speed—and no "world beater" as had been forecast and expected. She ran to the Atlantic equator in the relatively slow time of 28 days and was 55 days to the Greenwich Meridian. Running her easting down, she was benefited by strong winds and splendid sailing conditions. Although she showed fair speed in heavy blows and was credited with a run of 368 miles in twenty-four hours before a stiff gale (an average speed for a day of $15\frac{1}{3}$ knots per hour), yet it was reported that "she moved sluggishly in light to moderate winds" and was "heavy, unhandy, out of balance and not responsive." Captain Forbes drove the ship "cruelly hard," but toward the end of "a discouraging and seemingly unexplainable slow voyage," when it became apparent that the passage would be one of over eighty days rather than his boasted "sixty days to Melbourne," he commenced to sulk, "damned his ship and her builders," and, after reaching Long. 130° E. in poor time, "seemed to lose interest in the passage." At 1:00 P.M. on Christmas Day, the *Schomberg* came in sight of land, and at 10:30 P.M. on December 27, on a fine, clear moonlight night, the mate (Henry C. Keen) reported to a "disillusioned and peevish" Captain Forbes that the ship was getting too close to the shore and urged going about. Forbes, playing cards at the time and losing, "seemed disinterested in the working of his ship" and insisted on playing "another rubber of whist." When he did finally deign to go on deck to take care of his ship, it was too late. With a light air and a strong three-mile current running, the *Schomberg* refused to come round and later slid up on a sand bank thirty-five miles west of Cape Otway. Capt. "Bully" Forbes, on being told that the ship was aground, said angrily, "Let her go to hell," and then, like many other bullies in adversity, he "just plain quit." Chief Officer Keen took charge, "clewed up all sail, let go the starboard anchor, and lowered the boats."

It was subsequently proved at the official inquiry that it was due to the work of Mate Keen and an engineer-passenger (Millar, of Belfast) that the passengers were safely disembarked and put aboard the steamer *Queen*, which, fortunately, hove in sight on December 29. It was also made evident that, if Captain Forbes had responded when called by the watch to about-ship, a full half hour's time would have been gained and the ship probably saved. Captain Forbes was severely criticized, denounced, and censured, both as a commander and as a man, at a mass meeting of the passengers held at the Mechanics Institute, Melbourne. A British historian tells us: "Many of them declared that he [Capt. "Bully" Forbes] was so disgusted with the slowness of the passage that he let the ship go ashore on purpose. Others complained of his tyranny during the voyage and made allegations against his morality; altogether the affair was a pretty scandal, and Forbes never obtained

another command in the Black Ball Line." All efforts to save the *Schomberg* failed, and Britain's first and only big wood clipper ship—designed and built to beat the product of the numerous United States yards, both in speed and strength—was pounded to pieces, stranded on a sand bank, before she was able to complete a single passage.

Had the disaster not occurred, the *Schomberg* would have made a passage probably of 84 or 85 days at a good season of the year for speed. American clippers (United States-built) arriving at Melbourne during the southern summer, or from November to May, of the year 1854-1855 had runs from Liverpool of from 64 days (*James Baines*) to 81 days (*Lightning*), with an average for seven passages of 73½ days, or some eleven days better than the *Schomberg's* performance. The failure of the *Schomberg* resulted in Britain's making no further attempt to build large wooden vessels. When—eleven years later—"the great" *Sobraon* was built in 1866 by Hall, of Aberdeen (the builder of the unfortunate *Schomberg*), she was constructed of Indian teak laid over iron frames and beams, with iron stiffening and bracing.

A comparison of the dimensions of the *Schomberg* and the *Sobraon* (connected with each other in the minds of the British) with the dimensions of the *James Baines* (the best of the McKay Australian clippers), the *Red Jacket*, built by "Deacon" George Thomas, of Rockland, Maine, from designs by Samuel Harte Pook, and the *Blue Jacket*, built by R. E. Jackson, of East Boston, Mass., is of interest. All were engaged in the British-Australian passenger and freight packet service.

| | SCHOMBERG | SOBRAON | JAMES BAINES | RED JACKET | BLUE JACKET |
|--|--------------------------------|--------------------------------|---------------------------------------|---|---|
| Year built | 1855 | 1866 | 1854 | 1853 | 1854 |
| Construction | Wood | Composite | Wood | Wood | Wood |
| Builder | Hall, Aberdeen, Scotland | Hall, Aberdeen, Scotland | McKay, Boston, Mass., U.S.A. | Thomas, Rockland, Maine, U.S.A. | Jackson, Boston, Mass., U.S.A. |
| Owner | Black Ball Line | Lowther, Maxton & Co. | Black Ball Line | White Star Line | White Star Line |
| Registered tonnage | 2,284 | 2,131 | 2,515 (British 2,275) | 2,305 (Lloyd's) Also stated as 2,434.86 tons, U.S.A. | 1,790 |
| Length over-all—ft. | 288 | 317 | 266 | 270 | 235 |
| Length between perpendicu- lars—ft. and in. | 262 | 272 | 245 | 251-2 | 218 |
| Beam—ft. and in. | 45 | 40 | 44-9 | 44 | 41-2 |
| Depth of hold—ft. and in. | 29-2 | 27 | 29 | 31 | 24 |
| Ratio length (between per- pendiculars) to beam... | 5.82 | 6.80 | 5.48 | 5.71 | 5.29 |
| Ratio length (between per- pendiculars) to depth... | 8.97 | 10.07 | 8.45 | 8.10 | 9.08 |
| Ratio beam to depth..... | 1.54 | 1.48 | 1.54 | 1.42 | 1.72 |

*United States-built Clippers Later Acquired by the British
and Operated in the Black Ball and White Star Sailing
Packet Lines between England and Australia*

In addition to the fleet of clippers built by Donald McKay for James Baines & Company of the Liverpool-Australia Black Ball Line or purchased by it from that builder (*Lightning*, *Champion of the Seas*, *James Baines*, *Donald McKay*, *Commodore Perry*, and *Japan*), the

MERCHANT SAIL

Ocean Chief, bought by Baines from the Mortons soon after her launching at Thomaston, Maine, in 1854, the *Red Jacket*, promptly acquired by Pilkington & Wilson of the Liverpool-Australia White Star Line from her owner, Seccomb & Taylor, of Boston, and the *Blue Jacket*, sold when new by the same owner to John J. Frost for his London "Fox Line" of Australian packets and later acquired by the Liverpool White Star Line, the following United States-built clipper ships were acquired by purchase or chartered (with option to buy) at sometime in their careers and operated in the British-Australian trade by the Black Ball and White Star lines as regular British colonial packets:

| Name of Clipper and Tonnage | Built (launched) | Builder | Original Owner | Line | Remarks |
|---|-------------------|---|---|------------|---|
| BLACK WARRIOR (CITY OF MELBOURNE; 1,828 tons) | 1853 (late) | Austin & Co., Damariscotta, Maine | W. Wilson & Sons, Baltimore | Black Ball | In 1862 sold to James Baines & Co., Liverpool; in 1870 owned by W. T. Heron, Liverpool; caught fire and scuttled Melbourne, 1868. |
| CHARIOT OF FAME (2,050 tons) | 1853 (Apr.) | Donald McKay, East Boston | Enoch Train & Co., Boston | White Star | Chartered for several years by White Star (British-Australian) Line, of Liverpool. Sold London 1862 and used in service to antipodes until 1873. |
| COMET (FIERY STAR; 1,836 tons) | 1851 (July 10) | W. H. Webb, New York | Bucklin & Crane, New York | Black Ball | Sold at London in Apr. 1863 for £8,100 through George Crosshaw & Co. to Black Ball (British-Australian) Line. |
| EMPRESS OF THE SEAS (2,197 tons) | 1853 (Jan. 14) | Donald McKay, East Boston | W. Wilson & Sons, Baltimore | White Star | Operated 1859-1861 under charter by British between England and Australia. Left Liverpool June 1, 1861, and made 66½-day passage to Melbourne. Burned Dec. 19, 1861, at Port Phillip and became total loss. |
| FLYING CHILDERS (GOLDEN SOUTH; 1,125 tons) | 1852 (Nov. 11) | Samuel Hall, East Boston | Forbes and Cunn- ingham, Boston | Black Ball | In 1857 was 87 days from Hampton Roads to Melbourne. In Jan. 1863 sold at London to Mackay, Baines & Co., Liverpool, for £5,050. |
| FLYING CLOUD (1,782 tons) | 1851 (Apr. 15) | Donald McKay, East Boston | Grinnell, Minturn & Co., New York | Black Ball | First passage, left Deal Feb. 28, 1861, and arrived Melbourne May 24, 1861, 85 days out. In 1870 was still in British-Australian service and owned by Mackay & Son. |
| INVINCIBLE (1,769 tons) | 1851 (Aug. 6) | W. H. Webb, New York | J. W. Phillips, New York | White Star | Chartered five years (1854-1859); made runs from Liverpool to Melbourne in 76 and 79 days. |

(Continued on next page)

| Name of Clipper and Tonnage | Built (launched) | Builder | Original Owner | Line | Remarks |
|--|-------------------|--|--------------------------------------|------------|--|
| MORNING LIGHT (QUEEN OF THE SOUTH; 1,713 tons) | 1853 (Aug. 25) | Tobey & Littlefield, Portsmouth, N. H. | Glidden & Williams, Boston | Black Ball | Sold Apr. 1863 at London to James Baines & Co. for £9,000; renamed under British registry and put in British-Australian trade. |
| MORNING STAR (LANDSBOROUGH; 1,105 tons) | 1853 (Oct. 4) | Joshua T. Foster, Medford, Mass. | T. B. Waters & Co., Boston | Black Ball | Sold 1863 at London to Smith, Bilbrough & Co., London, for £6,500. From 1865 to 1871, owned by Mackay & Co., Liverpool. Operated in Black Ball Line. Afloat until 1890. |
| NEPTUNE'S CAR (1,616 tons) | 1853 (Apr. 16) | Page & Allen, Portsmouth, Va. | Foster & Nickerson, New York | White Star | Sold at auction, Liverpool, Feb. 1863 to Barclay & Co. for £8,000. Was placed in the British colonial trade and was operating in the Australian run in the early seventies. |
| OCEAN TELEGRAPH (LIGHT BRIGADE; 1,495 tons) | 1854 (Mar. 29) | J. O. Curtis, Medford, Mass. | Reed, Wade & Co., Boston | Black Ball | Sold at London in 1863 to James Baines & Co., of Liverpool, for £7,060 and operated in British-Australian service. In 1875 cut down to bark and owned by Williams & Co., London. |
| RED ROVER (YOUNG AUSTRALIA; 1,021 tons) | 1852 (Nov.) | Fernald & Pettigrew, Portsmouth, N. H. | R. L. Taylor, New York | Black Ball | Sold James Baines & Co., Liverpool, in 1861 for \$25,000 and operated for several years in its Black Ball (British-Australian) Line. |
| SIERRA NEVADA (ROYAL DANE; 1,942 tons) | 1854 (May 29) | Tobey & Littlefield, Portsmouth, N. H. | Glidden & Williams, Boston | Black Ball | In Mar. 1863, sold at London to Mackay & Baines, Liverpool, for £10,750 and put in Australian run. |
| TITAN (1,985 tons) | 1855 | Roosevelt & Joyce, New York | D. C. Bacon, Boston | White Star | Chartered with purchase option in 1857. Lost in South Atlantic on Feb. 4, 1858, when bound from Melbourne to Liverpool via Callao. |
| TORNADO (1,802 tons) | 1852 (Jan.) | J. Williams, New York | Frost & Co. and Mumford, New York | Black Ball | In 1863 sold in England for £12,750. In 1866 owned by Wilson & Chambers, Liverpool. In 1875 owned by Bilbrough & Co., of Liverpool. Burned New Orleans in 1875 and sold. |

(Continued on next page)

MERCHANT SAIL

| Name of Clipper and Tonnage | Built (launched) | Builder | Original Owner | Line | Remarks |
|---|--------------------|---------------------------------|-------------------------------------|------------|---|
| WHIRLWIND (960 tons) | 1852 (Sept. 13) | J. O. Curtis, Medford, Mass. | W. & F. H. Whittemore, Boston | Black Ball | In 1862 owned by Francis Burrett & Co., New York, and reported "sold British for operation Black Ball Line of Liverpool - Australia passenger ships." |
| WIZARD (QUEEN OF THE COLONIES; 1,601 tons) | 1853 | Samuel Hall, East Boston | Slate & Co., New York | Black Ball | Sold in London Nov. 1862 for £7,000 to Mackay, Baines & Co. for the British-Australian trade. |

In addition to the above, James Baines & Company (of the Black Ball Line) purchased the transatlantic packet *Jacob A. Westervelt* (1,418 tons), built at the Westervelt yard, New York, in 1849 for the Taylor & Rich New York-Liverpool "line." This ship was not a clipper packet, but a sturdy and commodious emigrant-carrying packet built for service in the turbulent North Atlantic. Under British registry, she was renamed *Southern Empire*.

Other United States-built clipper ships were acquired by other British lines for service in the Australian trade. The *Gauntlet* of 1,854 tons, built by Southard, Richmond, Maine, in 1853, was sold to the British at Hong Kong in 1860 and, in early 1863, was acquired at London for the sum of £8,000 for service as a British-Australian packet. She was renamed *Sunda* and, under the command of Capt. "Bully" Bragg, is credited with some fine sailing and fast passages. On September 25, 1863, she reached Brisbane in 76 days from London, reported at the time as "a record between the ports." On one occasion, Bragg claimed that he had raced the *Flying Cloud* for four days in a run out to Moreton Bay, during which period both ships logged 16 knots at intervals, but the *Sunda*, it was said, was some eighteen miles in the lead at the finish. The *Gauntlet* was a big ship to be built in the Kennebec River as far upstream as Richmond, and some apprehension was felt about getting her launched and down the river. At the time of completion in October 1853, she was the largest ship built in Maine and, it was said, "the sharpest constructed north of Portsmouth, N.H." She made several fast passages. She was chartered to the French Government and used as a troop transport during the Crimean War. The *Gauntlet* had good lines for speed, but was not as sharp-ended as the Boston and New York extreme clippers. She had a relatively full midship section, but contemporary Maine builders declared that she was "finer-lined than the half clippers built at Bath," and a Boston authority said that she was "equal to anything afloat in beauty of model and strength of materials." That she was fast is proved by the fact that, on her first eastward rounding of Cape Horn, she ran from Callao to Hampton Roads, deep laden with guano, in only 66 days, and on her first passage direct from San Francisco to New York she sailed August 1, 1859, and arrived at New York November 5 after a run of 95 days made under average and not favorable sailing conditions. The *Sunda* (*Gauntlet*) was reported burned at sea in 1878, when twenty-five years old. This ship should not be confused with the 1,556-ton ship of that name (also known as the *Royal Arch*) built in 1865 by Desmond at Miramichi, New Brunswick, Canada, which was owned for a time by the British-Australian Black Ball Line and was a much slower and smaller ship than the Kennebec-built medium clipper.

The medium clipper *Belle of the Sea* of 1,255 tons, built in 1857 at Marblehead, Mass., was sold at Liverpool in 1864 for \$43,000 and under British registry was renamed *Strathpeffer*. When operating under the Stars and Stripes, this ship is credited with a phenomenally fast passage of some 64 days from London (Downs) to Melbourne. The *North Wind* of 1,041 tons, built in 1853 by A. C. Bell, New York, which made a passage of 67 days from London (Downs) to Melbourne in 1860, was sold to the British in 1863 because of

conditions brought about by the Civil War. She ran for a few years in the British colonial trade.

The *Black Warrior*, on her maiden voyage, went from New York to London, where she loaded "2,600 tons of general cargo as well as passengers," and ran out to Melbourne in 76 days (best day's run, 365 miles; maximum speed logged, 17 knots per hour). Continuing to Peru, she sailed from Callao March 29, 1855, and was at Hampton Roads, Va., 79 days out, and at New York on June 23. On this voyage, the owners of the Quebec-built ship *Ocean Monarch* claimed that their vessel "sailed one week after the U.S.A.-built clippers *Black Warrior* and *John Stuart*, but caught up with and led them 12 hours around the Horn and several days to the equator"; notwithstanding the better weather conditions experienced by the Canadian clipper, both the United States-built clippers made better time on the whole return passage than did the *Ocean Monarch*, which had the benefit of a shorter distance to her port of destination. On February 1, 1868, after about six years' service as a British colonial packet, the *Black Warrior* caught fire at Williamstown Pier, Port Phillip, Australia, and was scuttled. Three days later, the ship (then named the *City of Melbourne*) was refloated and repaired. In 1877, when twenty-four years old, she was in use as a coal hulk at Melbourne.

The *Chariot of Fame* was built as a clipper packet for Enoch Train & Company's Boston-Liverpool White Diamond Line and was a sister of the *Star of Empire*. After seven round voyages in the transatlantic service, the "*Chariot*" was chartered by the British-Australian White Star Line, of Liverpool, and made a number of good passages in that service—one being a claimed run of "66 days from Liverpool to Melbourne." She was in general trade from 1856 to 1861, when she was sold in London after she had completed a voyage out to Melbourne and back to London via New Zealand. In 1868 she was listed as owned by Wilson & Chambers, of Liverpool, and there are records showing that she was operating under the British flag until 1873, at which time the ship was twenty years old.

The *Comet*, one of the fastest and most beautiful clippers ever launched, was in the Australian trade in 1858, making a fast run from New York to Melbourne in 75 days; following this, she made three more voyages around the world (her sixth, seventh, and eighth) via Cape Horn in 1859-1862. Upon arrival at New York December 19, 1862, the ship was sent across the Atlantic for sale because of the Civil War and its effect upon shipping. She sailed from New York March 11, 1863, and was only 19 days to London. In April 1863, the *Comet*, then twelve years old, was sold for £8,100 sterling (about \$40,000, or \$21½ per ton) through George Croshaw & Company to James Baines & Company for the British-Australian Black Ball Line. She was classed as "a splendid and well-appointed ship for carrying passengers." She was renamed the *Fiery Star* and made her initial passage under the British flag, arriving at Moreton Bay, Queensland, Australia, in November 1863 after a passage of 93 days from Queenstown; she had 500 emigrants aboard as well as "a good list of both first- and second-class passengers." On the return passage of her second voyage to Brisbane, she left Moreton Bay April 1, 1865, bound for London. When about three weeks out, the cargo was discovered to be on fire; everything was battened down and water pumped into the hold without avail. The relatively few passengers aboard on the homeward run and some of the crew—80 persons all told—took to the boats, leaving the mate and 17 men aboard. When about to sink, the ship was met by the bark *Dauntless* bound from Kingston to Auckland, New Zealand, and all those aboard (who had volunteered to stay with her) were rescued; the ship's boats and their occupants were never heard of again.

The *Empress of the Seas* was one of the many ships built "on spec" by Donald McKay at his East Boston yard during the clipper ship boom. When constructing such ships, McKay stated that he was building for his own account and was himself going to operate the ships. He asserted, "There is infinitely more money in owning and running ships than in building them." Therefore, he put a high price on his vessels and did not always get what he asked as is evidenced by the difficulty that he encountered in the sale of the *Sovereign of the Seas*.

However, the keel of the "*Empress*" was laid seven months after that of the "*Sovereign*," and as the latter vessel was still on his hands, he was evidently glad to accept a price of \$125,000 for the "*Empress*" when it was offered by William Wilson & Sons, of Baltimore, in December 1852. This was a rather high price, being \$57 per ton, and McKay said that it netted him "a good profit." The demand for floating tonnage was still big at the end of 1852, although it slacked off greatly when all the ships building in American yards in 1853 were afloat and competing with each other for business. The "*Empress*" left New York March 13, 1853, on her maiden voyage and arrived at San Francisco July 12 after a run of 121 days. It was reported that on this passage "she carried 3,100 tons, weight and measurement, on which her freight list was \$104,000." (The "*Empress*" was beaten by the *Surprise* on this run, as she is credited with a passage of 116 days; also recorded 118 days.) On her second voyage, with Captain Oakford in command, the "*Empress*" followed a strange course. She sailed from New York to Quebec, Canada, and thence to London; leaving London November 28, 1854, she went out to Bombay in 97 days and returned to London, thence back to New York. The "*Empress*" then made two voyages in the Cape Horn trade from New York to San Francisco, returning in ballast to Callao and with guano from Peru to an East Coast port. Eventually, the *Empress of the Seas* operated in the British-Australian packet trade under the British flag, and she made some good runs between Liverpool and Melbourne, the best being a remarkable run of 66½ days, with an arrival off Port Phillip Heads on August 6, 1861. On December 19 following, she was completely destroyed by fire at Queenscliff Bight, Port Phillip.

The *Flying Childers* was owned by S. G. Reed, of Boston, when sold at London in January 1863 upon her arrival there (December 18, 1862) 112 days out from Manila. In 1865, as the *Golden South* (name changed in early 1863), she was listed as owned by Baines & Company. Later, she became a coal hulk at Port Jackson and, after many years of service, was set on fire and totally destroyed by sparks from a burning ship.

The *Flying Cloud*, "the Cape Horn greyhound," made her reputation in the New York-California trade during the period June 1851-December 1855, with Capt. Josiah Perkins Creesy in command. Thereafter, until she was chartered and later (in 1862) sold to the British, the famous speedster was laid up first in San Francisco for several months and later at New York for two years and eight months, as it was not possible to operate her at a profit. Although her spars and sail spread had been cut down twice since the Cape Horn California trade, the *Flying Cloud*, even with an economy rig and small crew, did some fast sailing in the British-Australian service. In 1870, when nineteen years old, she left Liverpool June 4 under Captain Owen and arrived at Hervey's Bay August 30 after an 87-day passage. After several years spent in the British trade with the antipodes, the *Flying Cloud* was "sold cheap" for the North Atlantic Canadian-British lumber trade. In 1874 she went ashore near St. Johns and in June 1875, when twenty-four years old, was burned for her metal.

The *Invincible*, designed for the transatlantic packet service and built at a cost of \$120,000 for James W. Phillips, of New York, was one of the finest and fastest clipper packets ever built. Because of the demand for tonnage, she—as well as several others of the best clipper packets operating in the North Atlantic—was diverted to the Cape Horn trade, in which she made two successful voyages outbound from New York to San Francisco in 113 (sailing) and 111 days, respectively. On her first voyage, during which she covered 400 nautical miles in one day over the Cape Horn route westbound, she continued around the world and between San Francisco and Hong Kong, on July 6-7, 1852, experienced a "terrific" typhoon. Captain Johnson reported to the owners: "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." She continued with a passage of 112 days from Whampoa to London, leaving China during the unfavorable monsoon. Sailing from London for home on February 14, 1853, the *Invincible* passed the

Scilly Islands on the 16th and was only 6 days 3 hours to the eastern edge of the Banks, which is credited as being the best run on record. On one day of this westward Atlantic passage, the ship covered 306 nautical miles (best speed, 151½ knots); she received the pilot off Fire Island on March 5, when 19 days out from London and less than 17 days from the Lizard, and was at her unloading pier in New York on March 7. For the next five years (1854-1859), the *Invincible* operated under charter in the White Star (Liverpool-Australia) Line. She made two runs out to Melbourne in 76 and 79 days, respectively. On the latter voyage, her time equaled that made by the *James Baines*, which had traveled the same course and sailed fifty-six days before her, and the *Invincible* beat the *Lightning*, which sailed twenty-five days after her, by "a good two days elapsed time on the passage, both pilot to pilot and port to port." The *Invincible* completed her 1854 passage by going from Melbourne to Bombay, from which port she ran to Liverpool in 92 days. After her last passage out to Australia, she went on to China and arrived at New York in October 1859, 126 days from Whampoa and 78 days from Anjer.

The *Morning Light (I)* was built as a Cape Horner, in which service she made five voyages and performed creditably considering her sailing chances. On her sixth voyage, carrying coal from Cardiff (August 21, 1861), she put into Valparaiso and from there was only 37 days to San Francisco and only 34 days actual sailing time, which is an all-time record over the course. This *Morning Light* should not be confused with another American clipper of the same name, which was also built in 1853, but was constructed by Cramp at Philadelphia and measured only 938 tons. The *Morning Light (II)* was also used primarily in the California trade. She was purchased by the U. S. Government early in the Civil War and was captured and burned by the Confederates off the coast of Texas early in 1863.

The *Morning Star* was a heavily sparred general trader of clipper model that showed up well on her westward Cape Horn passages; she averaged 122 days for all her six passages and only a scant 112 days for her last four, two being made in 102 and 105 days, respectively. On March 23, 1863, when near the equator on a passage from Calcutta to London, the clipper was stopped by the Confederate raider *Alabama*, but as the cargo was owned by the British, the ship was released by Captain Semmes under a bond of \$60,000 and allowed to proceed to her destination. Upon arrival at London, the *Morning Star* was promptly sold and became the British ship *Landsborough*.

The *Neptune's Car* was a typical Cape Horner built from a model supplied by William H. Webb, of New York. The clipper made a westward passage from New York to San Francisco in 101 days in early 1855 and an eastward passage between the same ports in 99 days in 1857, covering 385 miles in one day.

The *Ocean Telegraph* (renamed *Light Brigade* when put under British registry in 1863), after nine years' service under the Stars and Stripes in the Cape Horn California trade, operated until about the mid-seventies in the British-Australian and New Zealand trade. In 1878 she made a fast transatlantic run, being only 15 days from Cape Henry to Queenstown. Her last days as a sailing vessel were spent as a bark in the Canadian-British North Atlantic lumber trade. In February 1883, she arrived at Queenstown 19 days from New York and was reported "leaking badly"; the vessel was then twenty-nine years old. Some time thereafter, she was unrigged and converted into a barge, serving later, for many years, as a coal hulk at Gibraltar.

The *Red Rover* (renamed *Young Australia*), operating in the Black Ball Line between Britain and Australia in 1862, left Melbourne under command of Capt. William Lowrie one day after Britain's crack clipper *Stornoway* sailed from Sydney; both were bound for London via Cape Horn. The old United States-built clipper *Red Rover* overtook the *Stornoway* in the South Atlantic, sailed within sight of her for some time, and reached London two days ahead of her, beating the much-vaunted British ship by three days on the passage home. The *Young Australia* was wrecked on Moreton Island May 31, 1872, when

homeward bound and only a few hours after leaving her anchorage at Brisbane; she was twenty years old at the time of the catastrophe.

The *Sierra Nevada*, when she left her builder's yard in the middle of 1854, was the largest ship ever built on the Piscataqua River. Like the vast majority of clipper ships built in the United States during the clipper ship decade of 1850-1860, she was built for the California trade. Whereas she rounded Cape Horn on her maiden voyage, her schedule was strange, for she actually sailed from Boston July 9, 1854, practically light, bound for Peru. She was 97 days out to Callao, loaded guano at the Chincha Islands, and, arriving at Hampton Roads March 16, 1855, was ordered to deliver her cargo at Liverpool, where she arrived on April 12. Upon entering the Wellington dock, the "*Nevada*" grounded on the sill and was not floated for a week. The ship was seriously injured, and as the dock owners denied responsibility, litigation followed. Whereas the owners won the suit, it was years before the case was settled. The *Sierra Nevada* was sold after her injury for £9,000; she was repaired and sailed from Liverpool November 25, 1855, reaching New York in 25 days and making a very fast run of 6 days from the Lizard to the Grand Banks. In 1858 the ship, with Captain Blaney in command, ran from New York to Melbourne in 105 days (arriving out November 20); she then went to Hong Kong in 53 days and thence in ballast to New York in 99 days (79 days from Anjer). Following the return from her run to the antipodes, the *Sierra Nevada* made the fastest westbound Cape Horn run of the year with a passage of 97 days from New York to California and did some phenomenal sailing in the Northern Hemisphere; she was only 17 days 16 hours from Sandy Hook to the Atlantic equator and 15 days from the line in the Pacific to San Francisco. The ship was evidently an unusually good carrier as well as a fast sailer, for it is said that on a Cape Horn passage from New York to San Francisco she carried "800 tons of heavy and 2,600 tons of measurement cargo." In March 1863, the *Sierra Nevada* was sold at London, and this time—her second sale by auction in England—she went under the British flag and became a member of the Black Ball fleet of Liverpool-Australia packets. Some years later, she was sold to J. P. Foulkes and hailed from London, and in 1875 her registered owner was John Harris, London. The "*Nevada*" was wrecked on the Chilean coast in 1877 (when the ship was twenty-three years old) while carrying guano from Callao to Liverpool.

The *Titan* was a medium and not an extreme clipper and had the reputation of being "a good sailer and a great carrier." The London TIMES described her as "the largest and finest clipper in the world." After crossing the Atlantic on her maiden voyage, she was under charter to the French Government, carrying troops, armaments, and supplies between Marseilles and the Crimea. At the close of the war in 1857, the *Titan* went to New Orleans and there loaded for Liverpool "the largest cargo of cotton, 6,900 bales, ever loaded on any one ship" up to that time. Upon arrival in Liverpool, she was chartered, with option to buy, by the White Star Line (following repairs necessitated by damages sustained while entering the port under charge of a pilot) and made a good passage out to Melbourne with 1,030 passengers on board and "a large cargo in her holds." On the return leg of the voyage, the *Titan* went to Peru and loaded guano at the Chincha Islands; she sailed from Callao for home December 24, 1857, but on February 18, 1858, the ship was abandoned in the South Pacific. Captain Sears and his crew of forty-nine men took to the boats. A week later, they were picked up at sea by the Spanish ship *Golconda* and later landed at Pernambuco.

The *Tornado* was a big clipper packet of 1,802 tons, built as a fast and roomy emigrant carrier with the North Atlantic trade in mind. Placed in the Cape Horn route on her maiden voyage in early 1852, she sailed a remarkable homeward passage of 100 days from San Francisco to New York, during which she lost her bowsprit, foremast, and yards and sprung the mainmast in a whirlwind in the South Pacific. Repairs required fourteen days, during which the ship changed her position only twelve miles; therefore, the time of her maiden passage home from California was only 86 sailing days. The American-built clipper *Tornado* made several runs in the fifties between Liverpool and Melbourne, one of which was in

75 days. In March 1858, she reached Melbourne with mutiny aboard, her mate having shot three of the crew, one of whom died. The New York-built *Tornado* should not be confused with a smaller and slower ship of the same name that had been built at New Brunswick, Canada, and was also engaged in the British-Australian trade.

The *Whirlwind*, with the "Goddess of the Winds" for her impressive figurehead, was an outstanding clipper in the New York-Melbourne trade during 1855-1858. She averaged 76½ days for four consecutive passages, one of which, a run of 72 days, was the second best passage on record between any U.S.A. and Australian port. Whereas the Medford-built *Whirlwind* was sold in 1862 to go under British colors for operation in the England-Australia Black Ball Line of colonial packets, it is well to bear in mind that James Baines & Company owned a slower ship named the *Whirlwind* that was built in Scotland.

The *Wizard* was very highly considered by her builder, Samuel Hall, of East Boston. She was the eighty-fourth vessel that he had built, but possibly his praise of her as "his masterpiece" and his remarks at the launching and prior to her sailing were due to the fact that, copying the example of Donald McKay, he had built the ship "on spec," that she was for sale, and that in true McKay fashion he was resorting to salesmanship in an endeavor to sell her at a good price. Hall sent the *Wizard* to New York for inspection and sale; she arrived there May 9 and soon afterwards was purchased by Slate & Company at the reported good price of \$95,000 (about \$59 per ton). On her maiden voyage to California, the *Wizard* had her bowsprit carried away and her spars and rigging so badly damaged when south of the Plate that Captain Slate felt compelled to put her about for Rio de Janeiro, where she spent twenty-three days undergoing repairs. She sailed from Rio October 11, 1853, and reached San Francisco after a run of 69 days from the Brazilian port—said to be "the fourth fastest passage on record for a cargo-laden ship." On December 18, 1857, the *Wizard* left Hong Kong for Melbourne, with Captain Woodside in command (Captain Slate had died in China), and proceeded thence to Manila and on to New York. In 1862, Tappan and Starbuck, of New York, who were then the owners of the ship, fearful of the effect of the Civil War on the profitable operation of northern, or Union, ships, sent the *Wizard* across the Atlantic to London for sale. In November 1862, she was purchased for £7,000 by Mackay, Baines & Company, of Liverpool, renamed *Queen of the Colonies*, and put in the Australian service of the British Black Ball Line. For several years, she sailed between Liverpool and the antipodes. In August 1869, the vessel arrived at San Francisco, with 1,669 tons of coal aboard, after a passage of 60 days from Sydney, N.S.W. In 1874 the *Queen of the Colonies* (*Wizard*) was listed as owned by W. Williams, of London, and it is said that she was wrecked that year, when twenty-one years old, while on a voyage from Java to Falmouth, England.

Sail versus Steam—the Australian Service Favored Sail for Long Years

The fight between sail and steam commenced in the North Atlantic in 1840. The first steamship to carry the mails from Britain to Australia was the iron screw steamer *Australian* of 2,000 tons, and she sailed from Plymouth, England, on June 5, 1852, and arrived at Port Phillip Heads, Melbourne, on September 2 after a passage of 89 days, having called at St. Vincent, St. Helena, Cape Town, and St. George's Sound en route for coal. This had been sent out ahead from England by sailing vessels for the use of the *Australian* and had been loaded in her bunkers expeditiously in an effort to save every minute of time possible. It is said that the vessel steamed back to Plymouth in only 76 days on the return leg of the voyage,

which she completed (January 11, 1853) in 7 months 6 days. This time can be compared with 5 months 21 days for the Canadian-built wood sailing ship *Marco Polo* in 1852 and 5 months 9 days (also 5 months 10 days 22½ hours) for big United States-built clippers. The *Australian* occupied 165 days between ports on her maiden round voyage, whereas the best corresponding time for the *James Baines* was 136 days, with only 133 days at sea. The steamer *Australian* was soon followed in the British-Australian packet service by the iron screw steamships *Great Britain*, *Adelaide*, *Queen of the South*, *Sydney*, *Cleopatra*, *Antelope*, and others, but it has been authoritatively said that "these early steamers nearly ruined their owners and did not greatly interfere with the clippers."

The Australian run from either British or East Coast American ports was very favorable in general for sail, provided the outbound passage was made around South Africa and the Cape of Good Hope and the homeward passage was made by continuing to sail eastward and around Cape Horn and the southern tip of the American continent. This means that a round voyage from either Britain or the United States to Australia and return was a journey around the world, with a good deal of the mileage being sailed in the latitude of the forties and fifties in the Southern Hemisphere, where heavy western and, therefore, favorable winds are prevalent—just as they are in the Northern Hemisphere. The term "Roaring Forties," sometimes used in relation to the westerly gales in the latitude of the forties of the North Atlantic, originated and was generally used in the last half of the nineteenth century to apply to the Southern Hemisphere and the sailing route running east, some eighty-eight per cent around the globe, from about Long. 20° W. in the South Atlantic and far west of the Cape of Good Hope to about Long. 60° W. and a little east of Cape Horn (the longitude of the Falklands) via a southern Australian port, preferably Melbourne, Victoria, which is more advantageously located to make time on a round voyage than is Sydney, N.S.W. In the latitude of the southern forties (i.e., from 40° to 55° S. southbound to Australia and from 40° to 60° S. on the homeward run or still farther south if the weather was not too cold and the ice hazard—both bergs and floes—too great), good speed could be expected from any wind-propelled vessel if the command was willing to carry sail in following direct or quartering gales and the ship, with her spars, rigging and sails, had been built and kept in condition to stand it.

The Forties! The Forties! The wide Roaring
Forties!
With the wind at sou'west and every sheet paid;

We stormed round the world, out and home thro'
the Forties
In the noblest creations that man ever made.
—John Anderson in "Shadows of Sails"

In the California trade, the westbound passage around Cape Horn was dreaded, with cause, by all mariners. Although the journey around the Horn bucking the westerlies from 50° S. Atlantic to 50° S. Pacific was only an insignificant percentage of the total mileage between a North Atlantic port and San Francisco, the time occupied in traversing this small section of the course under canvas varied from 6 days, the record (*Young America*), to over 100 days. Occasionally, a large seaworthy ship did not seem to be able to make it, and her skipper "turned tail" to the westerly gales and ran for the Pacific through the South Atlantic and the southerly Indian Ocean. This made a ridiculously long mileage to California, but the command benefited from the heavy but favorable winds in the Roaring Forties and saved his ship from further strains, which she could not be expected to stand indefinitely. Although the trade route between North Atlantic ports and California was primarily running south in the Atlantic and north in the Pacific when outward bound from a United States or European port and running south in the Pacific and north in the Atlantic when returning, or homeward bound, with very little longitude (straight sailing) mileage in the latitudes of the Southern Hemisphere, yet the westbound passage was invariably much longer as well as more hazardous and unpleasant than the eastward run home. The record passage for the westward run from New York to San Francisco is 89 days, but the record passage eastward from San Francisco to both New York and Boston is only 76 days, or thirteen days (17 per

cent) less, and many a ship that could not beat 125 days on the passage out was able to run home, making an eastward rounding of the Horn, in 100 days.

On the North Atlantic, sailing packets held their own fairly well for some fifteen years on the eastbound run when sailing "downhill" and enjoying the benefit of the prevailing westerly winds. However, sail was horribly handicapped in competition with steam, and for many years discriminating passengers, who, nevertheless, had to be mindful of time, traveled east by sailing packet and west by steamer. It was primarily the westerly winds in the North Atlantic that defeated sail in its battle with steam during the forties and fifties in the Atlantic "ferry." The difference in the relative length of passages of sailing packets eastbound and westbound in the North Atlantic is evident from the averages of the Black Ball liners between New York and Liverpool for the six-year period 1818-1823 inclusive. The outward, or eastbound, passages of all the ships averaged 23 days, and the homeward, or westbound, passages averaged 40 days (i.e., seventeen days, or 74 per cent, longer). Occasional westbound Atlantic passages of 60 to 90 days were sufficiently common so as to excite no particular comment and cause no concern. The eastbound and westbound Black Ball passages for the ten-year period 1818-1827, as made public by the line and printed in the New York JOURNAL OF COMMERCE, averaged 24 days for the 188 eastbound crossings made and 38 days for the westbound—a difference of over fourteen days, or over 58 per cent. The fastest packet of the period was the *Canada*, which averaged 21 days eastbound and 34 days westbound—a difference of thirteen days, or 62 per cent; the slowest packet was the *Orbit*, which averaged 29 days eastbound and 46 days westbound—a difference of seventeen days, or 59 per cent. The effect of the season of the year on the winds encountered in the North Atlantic crossings is evidenced by the fact that the range of average eastbound for the various months is from a low of 22 days in November to a high of 25 days in June and September; six of the twelve months showed an average of 24 days for all eastbound crossings. When the ships sailed against the westerlies, or "uphill," the range was greater, varying from 33 days in September to 48 days in December, with the two midwinter months showing the heaviest westerly winds and gales.

The course traversed by sailing vessels in the British-Australian service (or between any North Atlantic and Australian ports), both out and home, was an ideal one for sizable square-rigged ships. Lieutenant Maury's SAILING DIRECTIONS, based on thousands of pyramiding records of the direction and force of the wind in all seasons and months of the year, in all waters, advocated a course for sailing ships proceeding from North Atlantic ports to Australia that would take them rather quickly to the middle of the North Atlantic and then south to a point off Cape St. Roque in South America. (The route to this point was the same for ships sailing for either California or Australia.) From off the South American coast, about Lat. 10° S., the course suggested for Australia takes a long sweep south past Tristan da Cunha (in the middle of the South Atlantic about midway between the Cape of Good Hope and the South American coast) to about Lat. 50° S., which is reached in about Long. 40° E., and curves up to the south coast of Australia. (Melbourne is located just a trifle north of Lat. 40° S. and about Long. 145° E.) For the homeward passage, the course continues east to get the full benefit of the prevailing westerlies, sweeps south of New Zealand down to about Lat. 58° S., rounds Cape Horn well to the south, runs between the Falklands and the South American coast, and carries on past Cape St. Roque to destination. Maury, in mapping out his ideal course, which all sailing ships promptly followed, evidently grossly underestimated the benefits to windjammers from the prevailing westerlies in the Roaring Forties and fifties. Whereas he stated 130 days as an average westbound passage between New York and San Francisco (which was not far from the truth for a ship of medium fullness and moderate spar and sail plan), he estimated an average passage from a North Atlantic port to Australia of 124 days and from Australia to a North Atlantic port of 110 days, both of which were high and the relationship incorrect. Maury affirmed, based on the records of several hundred voyages, that "Liverpool is ten days nearer Melbourne

than New York owing to the prevalence of more favorable winds on the early part of the passage from the English port." The relationship between the Maury estimates of "a good average for ordinary ships" and the record run made by fast clippers is stated herewith on the North Atlantic port and (1) Australia and (2) California trade routes:

| Course | Maury's Stated Average Passage in Days | Actual Record Performance | | | Record Sailing Performance—Percentage of Maury's Stated Average Passage |
|---|--|---------------------------|-------------------------|--|---|
| | | Clipper Ship | Year | Length of Passage | |
| Liverpool to Melbourne | 124* | JAMES BAINES | Dec. 1854- Feb. 1855 | 63 days 18 hours—Rock Light, Liverpool, to Hobson's Bay, Melbourne (58 days, land to land) | 52 |
| London to Melbourne | 124* | NORTH WIND | Nov. 1859- Jan. 1860 | 66 days—Downs (London) to Port Phillip Heads (Melbourne); also stated as 67 days | 53 |
| New York to Melbourne | 124* | MANDARIN | Dec. 1855- Mar. 1856 | 70 days | 56 |
| Melbourne to Liverpool | 110 | LIGHTNING | Aug.-Oct. 1854 | 64 days 3 hours, port to port; 63 days, pilot to pilot | 57 or 58 |
| (YOUNG AMERICA is credited with 63-day passage in 1858.) | | | | | |
| New York to San Francisco | 130 | ANDREW JACKSON | Dec. 1859- Mar. 1860 | 89 days 4 hours—Sandy Hook, New York, to Pilot Station, San Francisco | 68½ |
| | | FLYING CLOUD | 1851 | 89 days 21½ hours—New York to San Francisco, anchor to anchor | |
| (FLYING CLOUD also claimed a passage of 89 days 8 hours in 1854, but point and time of departure and arrival uncertain and unacceptable.) | | | | | |
| San Francisco to New York (in ballast) | 130 (revised to 115) | COMET | Dec. 1853- Mar. 1854 | 76 days 7 hours—San Francisco to anchor at Sandy Hook, New York | 66½ |
| San Francisco to Boston (in ballast) | 130 (revised to 115) | NORTHERN LIGHT | Mar.-May 1853 | 76 days 8 hours from pilot to pilot off Boston Light | 66½ |
| San Francisco to New York (cargo-laden ship) | 130 (revised to 120) | YOUNG AMERICA | Mar.-June 1870 | 83 days; scant 81 days to Sandy Hook; delayed; 82 days to pilot | 69 |
| Liverpool to San Francisco | 130 (revised to 135) | YOUNG AMERICA | Oct. 1872- Jan. 1873 | 99 days, port to port; 96 days, pilot to pilot | 75 |
| San Francisco to Liverpool | 130 (revised to 120) | PANAMA | Oct. 1860- Jan. 1861 | 86 days 17 hours | 72 |

*Not consistent with the Maury claim that "Liverpool is ten days nearer Melbourne than New York."

The above figures prove that the prevailing winds in the Roaring Forties of the Southern Hemisphere were very much more effective in propelling sailing vessels running to the eastward than Maury had estimated and that his estimated average length of the passages in the Australian trade was far out of line—as was his relation between the outward and homeward passages. The important thing about this analysis and record is the very evident fact that the British-Australian passage, both outbound and homebound, was virtually ideal for sailing vessels, and if "canvasbacks" were to compete with steam in any long-distance trade route of the world, this was the service—prior to the building of the Suez Canal—where they could be expected to hold more than their own. Around mid-century, however, Britain was very steam-minded. Following ten years of experience with Samuel Cunard in the North Atlantic and noting the outstanding success of the United States Collins transatlantic line of steamships (whose wood paddle-wheel vessels—*Arctic*, *Atlantic*, *Baltic*, and *Pacific*—com-

pletely outclassed the British Cunarders—*Niagara*, *Canada*, *Asia*, and *Africa*—in speed, seaworthiness, comfort, fittings and equipment, service and management), the British ship-owners were encouraged by the government to turn to iron vessels and later to screw propulsion instead of paddle-wheel. British shipbuilders could not build wood vessels, and if they had been trained and equipped for the work, all the timber would have had to be imported, whereas they had plenty of iron at home; moreover, the propeller could be used in iron hulls much better than in wood hulls, and notwithstanding the prejudice of the British Admiralty and Samuel Cunard expressed for years in favor of side wheels, the screw propeller was demonstrated to be better than paddles for deep-sea work.

During the forties and a good part of the fifties, sailing packets often passed the steamers of the transatlantic lines, and much publicity was given to these achievements of merchant sail. However, the fast work of sailing craft in relation to steam was almost exclusively on the eastbound crossing. From the commencement of steam competition in the North Atlantic, sail could not hope to hold its own with steam on any westward port-to-port passage, where sail had to beat against and buck westerly gales in making what was known to the marine fraternity as the "uphill" (hard and long) crossing. Again, in sailing "down-hill" to the eastward and taking full advantage of the prevailing westerlies, a well-modeled sailing ship carrying plenty of sail in a stiff blow or being pushed along by a favorable gale would overtake and pass any of the steamers of the period; however, the wind would seldom hold strong and steady, and when it eased down or shifted, the steamer making a steady speed of 8, 9, or 10 knots per hour would catch up with and pass the sailing ship. The important thing with packet ships was the length of a passage, port to port, and not a wonderful, high spurt speed, an amazingly large day's run, or some great distance covered in a few days' time. American sailing ships, both packets and clippers, were beating the steamers continually at sea on the eastbound crossing, but the "victorious" sailers almost always reached their port of destination some days following the arrival of the "defeated" steamships, and the relative average time for sail and steam was, from the inauguration of direct England-United States steam packet lines, so overwhelmingly in favor of steam that even the most ardent advocates and enthusiastic supporters of sail were likely to choose steam for the westbound Atlantic crossing and take a chance on the much cleaner, pleasanter, more comfortable, and healthier sailing packet on the eastbound passage to Europe. With steam making 12- or 13-day crossings, a 15- to 20-day passage on a sailing packet eastbound could be tolerated with a fair degree of satisfaction, but not a 30-day or longer westbound crossing under sail.

When McKay sent his *Sovereign of the Seas* to Europe in an endeavor to sell her to a British-Australian line, she left New York on June 18, 1853, the same day as the Cunard Line steamer *Canada* took her departure for Liverpool. The big American clipper made a fine passage of 13 days 22 hours 50 minutes. Evidently, she arrived at the English port about two days after the *Canada*, although the logs of the two vessels show that at the end of the first five days of the crossing the *Sovereign of the Seas* was 325 miles in the lead. The best day's run on the passage was 340 miles (also reported as 344 miles) for the "*Sovereign*" and 306 miles for the steamer, and from the Banks to Cape Clear the ship under canvas averaged over $12\frac{3}{4}$ knots per hour. The "*Sovereign*" was deep laden and drawing $22\frac{1}{2}$ ft. of water, and it was claimed that when the steamer *Canada* reached Queenstown, the *Sovereign of the Seas* had passed there offshore several hours previously. In any event, the McKays and their Boston friends made the definite claim that the "*Sovereign*" had beaten "the Cunard steamship *Canada* by several hours in a race across the Atlantic."

Upon the arrival of the "*Sovereign*" at Liverpool, her charterers—the Australian Black Ball Line of James Baines & Company—boldly advertised that the ship would rebate from the freight charges scheduled two pounds sterling per ton if she did not "make a faster passage [to Melbourne] than any steamer in the berth." It was expected that the "big Yankee clipper" would do some fast sailing in the Roaring Forties, where she would be helped by

favorable westerlies in the Southern Hemisphere on both the outward and homeward runs. The records show that, whereas the *Sovereign of the Seas* (loaded down to 231½ ft.) made a relatively slow passage out for a big American clipper (78 days), she decisively beat everything—both sail and steam—that sailed about the same time, including the British iron clipper *Gauntlet* (693 tons) by ten days. Returning to Liverpool, the "*Sovereign*" made a good passage of 68 days and beat the steamer *Harbinger* by four days and all other vessels sailing about the same time by from fifteen to twenty days. In the previous year, the Canadian-built *Marco Polo*, on her maiden voyage, arrived at Melbourne on September 18, 1852, after a fast passage reported as 68 days from Liverpool, having beaten the steamer *Australian*, it was said, by "a clean week." Returning to Liverpool with a much longer passage of 76 days (October 11-December 26, 1852), the "*Polo*" defeated the rival steamer, it was reported, by "more than a week." Another Canadian-built wood clipper, the *White Star*, it was reported, went out from Liverpool to Melbourne in 1856 in 75 days and sailed home in 76 days, "beating the auxiliary steam vessel *Royal Charter* by ten days, port to port." Whereas sailing ships were favored on the Australian run by the westerlies in the Roaring Forties, steamers were handicapped on this long voyage by being required to call at four coaling ports en route from Liverpool to Melbourne, and each call for fuel necessarily delayed the vessel in her race with sail from the port of departure to the port of destination.

Under the pressure of the British Government, public opinion, and an expressed national policy, iron steam was in demand on all British deep-sea trade routes, but the Australian service was not only the one which favored sail, because of the splendid sailing conditions that were prevalent in the Roaring Forties, but also a difficult route to serve with coaling stations—particularly on the long-distance runs in the Southern Hemisphere. Because of these conditions and as steamships were extravagant with fuel, could carry but little paying freight, and were inevitably losing money in the service (and not beating the sailing vessels in length of passages, port to port, even though the steamers went both out and home via the Cape of Good Hope), sail continued in the Australian service for long years after such a mode of propulsion had been abandoned in other long-distance British trade routes.

One of the earliest iron sailing ships in the Australian trade was the *Darling Downs*, built in 1852 as an auxiliary steamer (fitted with a 300-horsepower engine) for The General Screw Steamship Company and first named and operated as the *Calcutta*. An English historian says that the *Darling Downs* was "one of that numerous fleet of ships, the converted from steam to sail, about which one could make a largish book without much trouble." This is eloquent testimony that early British iron screw steamships, for many long years, were unable to compete with well-modeled, rigged, operated, and managed sailing ships in the Australian trade. We also learn that not only the *Darling Downs* but also all the steamers of The General Screw Steamship Company were converted into sailing ships (and many of them renamed) when that company became insolvent "like nearly all early steamship businesses."

The United States merchant marine possessed three well-known sailing ships that had been converted from steamers. The most famous was the *Three Brothers*, built by Jeremiah Simonson in 1856-1857 at Greenpoint, Long Island, for Commodore Vanderbilt as a wood brig-rigged paddle-wheel steamship and named the *Vanderbilt* after her owner. This steamer, which became popularly known as "Vanderbilt's yacht," is reported to have cost a million dollars; she was of 3,361 tons and had two vertical beam engines, with cylinders 90 in. in diameter and 12 ft. stroke and four tubular boilers. The *Vanderbilt* ran as a transatlantic "luxury" steam packet between New York, Havre, Southampton, and Bremen with the *Adriatic* and *Illinois* in the North Atlantic mail steamship service. (The *Adriatic*, Edward K. Collins' 4,144-ton masterpiece, was built in 1855 at a reported cost of \$1,100,000 and made a transatlantic record of 5 days 19 hours from Galway to St. John's.) The *Vanderbilt* laid claim to being "the fastest steamship afloat," with runs of 9 days 5 hours from New York to Southampton (beating the fastest British Cunarder on this crossing); 9 days 8 hours from

New York to the Needles (best day's runs, 370, 350, and 333 miles); 9 days 13 hours from Southampton to New York in June 1858; and 9 days 9 hours 26 minutes from the Needles to New York in 1859. The attitude of the United States Government in regard to subsidies and its policy of indifference toward and nonsupport of its foreign steamship mail lines drove American steamers from the seas, and Vanderbilt followed Collins and others in suspending steamship service. The United States Government owned the *Vanderbilt* during the Civil War and for many years thereafter, but in February 1873 she was sold at auction in California to George Howes & Company, which promptly removed her machinery and converted her to a full-rigged three-masted sailing ship. When measured as a windjammer, she was given a registered tonnage of 2,972 tons (length 312 ft. 6 in., beam 48 ft. 6 in., depth of hold 21 ft. 8 in.). The *Three Brothers*, from the start of her career under sail, proved to be a fairly fast vessel, but in the middle and later seventies she was erroneously described as "the largest and fastest sailing ship in the world." On her maiden passage under sail, she carried grain from San Francisco (sailing October 24, 1873) to Havre, took a pilot at Falmouth when 108 days out, and reached Havre February 12, 1874, after a passage of 111½ days from San Francisco, during which she had sailed 16,073 miles at an average speed of slightly over 6 knots per hour. (Her best day's run was 314 miles—a speed of over 13 knots.) Whereas the *Three Brothers* had a reputation for being fast and beat, it would seem, all the ships with which she sailed in company, her passages were long compared with those of the old clipper ships *Young America* and *David Crockett*, which continued in the Cape Horn service as long as the *Three Brothers* and also much longer than the splendidly designed and much fuller-bodied Down Easters *Henry B. Hyde* (2,583 tons) and *A. G. Ropes* (2,461 tons), launched at Bath, Maine, in 1884, about the time the *Three Brothers* was withdrawn from the Cape Horn trade and from active service.

The *Three Brothers*, on seven westbound Cape Horn passages, averaged 125 days (a broken passage in 1883 with six weeks' detention at Rio de Janeiro due to a lost rudder is not considered) and on nine eastbound passages, 116 days; her best passages westbound were two runs of 112 days. Eastbound, she made passages of 104, 105, 108, 110, and two of 111 days, her only slow runs east being a passage of 132 days in the winter of 1879-1880, a passage of 138 days in 1882-1883 with a mutinous crew, and her last voyage from San Francisco to Liverpool in March-July 1885, which occupied 123 days. The claim of her captain that the *Three Brothers* under sail, on several occasions, covered more miles in twenty-four hours than she ever did as a steamship might be correct, but it is doubtful. She is credited with a 370-mile day's run under steam, which is a speed of 15.4 knots per hour. Her log shows spurt speeds for short periods of 18 knots under sail, but there is a big difference between a spurt speed of 18 knots and maintaining such a speed for a watch—not to mention a day of twenty-four hours and six consecutive watches. The claim of an officer of the *Three Brothers* that he saw that ship "reel off 24 knots" is an unverified, imaginative yarn and void of any semblance of truth. The *Three Brothers* sailed unusually well for a converted steamer, but notwithstanding her claims for cargo-carrying, she had the usual sharp-lined steamer model and could never compete in an economic sense with a well-designed and built sailing ship.

A second United States converted steamer that later saw service as a sailing ship was the *Ericsson*, built at New York in 1852. This vessel was described as being "splendidly constructed of oak throughout." Like most other steamers of her day, she was a long ship with very fine lines forward, which did not work so well under canvas when beating against strong head winds with a sea running. She was also somewhat tender and described as a "heeler," but when wind and sea conditions were to her liking, she sailed very fast.

The third converted steamer of the American merchant marine was the British-built transatlantic passenger steamship *Persian Monarch*, built by McMillan at Dumbarton, Scotland, in 1880. This vessel had her machinery taken out because she was stranded near New York in 1895 and not because she could not be operated profitably as a steamer—

as was the case with the *Three Brothers* and *Ericsson*. When salvaged, the *Persian Monarch* was acquired by Charles R. Flint & Company, which took out all the machinery and rebuilt her to obtain American registry as the four-masted shipentine *May Flint* of 3,340 tons. This ship was described by contemporaries as "the hideous *May Flint*" and "the ugliest square-rigger that ever sailed the seas." Her straight steamer stem did not help her appearance, and it is said that she was "so unwieldy, so unhandy and top-heavy that she was always in trouble." On her first voyage under sail, she lost a topmast and three topgallant masts off the Horn and required 160 days to make the westward passage. In 1897 she lost two topmasts and three topgallant masts when 18 days out from Philadelphia bound for Japan; she returned under a jury rig to New York for repairs, sailing an average of 10 knots per hour for one day with favorable conditions of wind and sea under this make-shift rig. During the next voyage, with a cargo of coal, she was burned out in San Francisco, and it was said, "The marine fraternity were glad to see her go."

In the sixties and seventies, many British sailing ships that had the reputation of being fast vessels were converted steamers that had been in the Australian, Indian, or East Indian trade; but possibly the most famous of all the ships of this class was *The Tweed*, from which Britain's pride, the *Cutty Sark*, was later modeled. John Willis' clipper ship *Tweed*, known as "the fastest of the Blackwall frigate packets" (famous in the annals of British shipping and in the history of India and later prominent in Australian trade), was originally the paddle-wheel steamer *Punjaub*, built in 1854 of Malabar teak in the Bombay Dockyard for the East India Marine. In 1862 she was sent to England to be sold, and Willis bought her and made her into a sailing ship. *The Tweed* as converted measured 1,745 tons register and was 250 ft. long, 39½ ft. beam, and 25 ft. deep. It is said that in the mid-sixties *The Tweed* sailed with the British mail steamer from Hong Kong and beat her by one and a half days on the run to Singapore. In the Australian trade, *The Tweed* made a great record. She is credited with a day's run on July 9, 1880 (during a passage from London to Sydney), of 368 nautical miles—an average speed of 15½ knots per hour and a maximum speed by log of 17 knots; an outbound passage, London to Port Chalmers, in 69 days; and a homeward run, Sydney to London, also in 69 days. This latter performance was an amazing one. During the 1875-1876 season, thirty-three ships of the Australian wool fleet sailed to England, and *The Tweed's* passage of 69 days was ten days faster than the next best run; nine of the ships required from 100 to 125 days to make the passage. In 1873-1874, *The Tweed* ran home from Melbourne in 83 days, and the only ship of the wool fleet making better time was the new, fast clipper *Samuel Plimsoll*, which made a passage from Sydney to London in 82 days. In the 1874-1875 wool race, *The Tweed* sailed January 11, 1875, and ran from Sydney to the Lizard in 86 days. Six other ships sailed between November 25, 1874, and March 11, 1875, and their passages were 99, 122, 119, 98, 103, and 96 days, respectively—an average of 106 days, or twenty days longer than the run of *The Tweed*.

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 by contemporaries that this vessel was modeled on "the wave line theory" and was intended to attain a speed of 10 knots; 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 iron steamship *Himalaya* was built at Blackwall, London, for the Peninsular and Oriental Line. It was claimed that this vessel 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

called for a vessel 680 ft. long, with a beam of 82 ft. 8 in., and the tonnage is given at 18,915 tons. She was propelled by both paddles and a screw propeller and was fitted with six masts and five funnels. Her construction was begun 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 and of floating her 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, from the start, was a financial failure and "white elephant," although she was useful during the period 1865-1873 in laying the Atlantic submarine telegraph cables. This tremendous steamship, built far ahead of her time, was beached and finally broken up in 1888, when somewhat over thirty years old.

The inability of the early steamships to compete successfully with sailing ships in the British-Australian trade, the heavy financial losses sustained in the operation of such vessels, and the necessity for using sailing ships in conjunction with them to carry coal to the many fueling ports needed en route (including one as far away from home as southwest Australia) caused certain advocates of steam—under the prodding of the British Government—to seek to combine the economic advantages of sail with the reliability of steam as a propelling power independent of erratic winds and weather. It was known that the Australian trade route was ideal for sail if both the outward and homeward passages were made eastward and that only in the runs south and north in the Atlantic were calms, light airs, and baffling winds apt to be encountered. Therefore, it was said:

The best possible vessel in this service is not the steamship, nor is it the clipper sailing ship, but a combination of the two. We therefore propose to put in the trade a vessel that has the full advantages of both and the shortcomings of neither. This ship will be full-rigged, of clipper model and rig, capable of sailing with any ship in the service, but we will put a steam boiler and engine in her to drive a screw propeller as auxiliary power, which will be used to save the expenses of

a towboat making and leaving port, and at sea only when the ship encounters calms and adverse sailing conditions. It is expected that aside from certain expenses that the steam power installation will save, this ship will make the passage between an English and an Australian port in fully ten days less time on the average—and possibly with a much greater saving of time—than the usual full-rigged sailing ship.

It was also said that the England-to-Australia return voyage "is peculiarly adapted to ships fitted with auxiliary steam power, as by following the established sailing ship track, very few strong head winds are met and the screw will be of great assistance in light winds and calms."

In 1853-1854, the first sailing ships with auxiliary steam power appeared in the British-Australian trade to compete with the fast wood sailing ships of clipper type that were in that service or being built for it. (This was about the time that James Baines & Company and the British Black Ball Line of packets running between the mother country and Australia were acquiring big wood clippers from Donald McKay, East Boston, Mass.) All steam-propelled ships engaged in ocean or deep-sea trade at that time and for many decades thereafter were auxiliary ships and carried masts, yards, and sails for security and to give the vessel the benefit of canvas when the winds were favorable; all early steamships, therefore, had sail auxiliary power. However, in the early fifties, The General Screw Steamship Company built two full-rigged iron clipper ships of 1,850 tons register, with auxiliary steam power and feathering screws, with the Indian, oriental, and Australian trades in mind. These ships and others that followed them had a big spread of canvas and were under orders to use it continually and to the best advantage if conditions permitted and to resort to the use of the steam propeller only in calms and light winds. The owners and command expected that their steam auxiliary clippers *Harbinger* and *Argo* would make the round voyage from London to Melbourne and return in from 110 to 120 days at sea. The pioneer *Harbinger* is said to have gone out to Melbourne early in 1853 in 70 days, including six days spent in recoaling, making the reported actual running time at

sea 64 days. The big American clipper *Sovereign of the Seas*, on the return passage of her Liverpool-Melbourne voyage in 1853-1854, is credited with a run of 68 days, "beating the steamer *Harbinger* four days." The second of the two clipper ships equipped with auxiliary power was the *Argo*, which is credited with making the passage out from London (probably timed from either Plymouth or the Downs) to Melbourne (Port Phillip Heads or the bay) in 64 days and the return passage in 63 days. She followed the usual sailing ship course as outlined by Maury (rounding South Africa outbound and via Cape Horn homebound), used her sails throughout most of the voyage, and turned to steam power "only in calms and light winds." This is what the American pioneer transatlantic steamer *Savannah* was supposed to do on her historic crossing of 1819, and a generally similar type of steam auxiliary sailing ship, the *Argo*, was the first merchant vessel to circumnavigate the globe using steam power.

The time claimed for the *Argo* on her maiden voyage is practically the same as the record time of the U.S.A.-built clippers which made runs of 63 days each way, although the *James Baines* sailed from land (Irish Channel) to Hobson's Bay (inner harbor), Melbourne (December 16, 1854, to February 12, 1855), in 58 days and from land to land (Cape Otway) in 57 days. However, the *Argo* is said by a British historian to have traveled "from England to Melbourne and back by way of the Cape of Good Hope, both ways, in the actual running time under canvas and steam of 121 days," and we are told that "the consumption of coal during the entire time averaged 17 tons a day." Surely this does not mean a fuel consumption of 2,057 tons of coal for a round voyage of an auxiliary full-rigged sailing ship, but that is what the report says. However, we are also informed that the performance of the *Harbinger* and *Argo* on their first voyages was deemed "so satisfactory and promising" that they were quickly followed (1855-1856) by the "iron auxiliary steam clippers" *Royal Charter*, *Istamboul*, *Khersonese*, and others, but it is apparent that the actual operation of these vessels did not prove as satisfactory to their owners as anticipated. The expenses of operation and maintenance were much higher than for sailing ships; moreover, the weight of and the space occupied by machinery and coal reduced the money-earning cargo capacity of the vessels. Therefore, higher costs (both initial and operating, with greater depreciation and cost of repairs) and lesser revenue had to be considered in relation to shorter length of passages, and this reduction did not work out in practice to be as great or as definite and uniform as had been hoped.

Quite frequently fast American-built wood sailing clippers would beat the British steam auxiliary clippers from port to port just as they beat the early full-powered steamships that had to make stops for fuel at four ports en route between the ports of departure and destination on their passages out or home. As long as both sailing ships and steamers (both full-powered and steam auxiliary) followed the same route from England to Australia around South Africa, steam did not greatly affect the operation of sailing vessels in the British colonial trade, and the full-rigged sailing ship got the lion's share of the business in passengers, cargo, and gold and a good percentage of the mails. When the Peninsular & Oriental Steam Navigation Company in the late fifties extended its line to the Australian colonies via the Red Sea, the sailing ship began to feel the competition of steam, and when the 100-mile Suez Canal (running from Port Said on the Mediterranean to Suez on the gulf which is part of the Indian Ocean) was opened for use November 17, 1869, steam inevitably secured a monopoly of the passenger, mail, and express freight business. (When the canal was formally opened for traffic, sixty-eight vessels were waiting to pass through, and whereas about five hundred vessels used this short cut to India, Australia, and the Orient in 1870, the number rapidly increased with the years.) In the early sixties, sailing ships, to pay in the Australian trade, had to carry large cargo and a big number of steerage passengers, and iron ships built in Britain particularly for this business, being ardently backed by British patriotism and prejudice, drove the American wood clippers that had been built in the early fifties from the field.

Ice around Cape Horn and in the Far Southern and Northern Latitudes

The fast United States-built clipper *John Gilpin* of 1,089 tons, constructed in 1852, struck an iceberg off Cape Horn and foundered January 29, 1858, while bound from Honolulu to New Bedford under the command of Capt. John F. Ropes; all aboard the ill-fated ship, including fifteen passengers, were saved and taken aboard the British ship *Herefordshire*. Another American clipper, the *Fleetwood* of 663 tons, also built in 1852, was lost in heavy ice floes off Cape Horn on May 3, 1859, and only five aboard were saved. Ships sailing in latitudes of 45° to 60°, whether in the Southern or Northern Hemisphere, encounter a very definite ice hazard at certain seasons of the year. The new Black Ball transatlantic sailing packet *Liverpool* was lost on her maiden voyage by collision with an iceberg, and the Black X liner *Crisis*, bound from London to New York, undoubtedly met the same fate, as she "went missing" and, when last sighted, was sailing toward heavy ice fields. The *William Brown*, while loaded with emigrants, struck an iceberg in the winter of 1841, with great loss of life. The tragedy was made historic and an epic due to the fact that one of the ship's boats, in charge of the mate, was loaded with thirty-one of the passengers and crew. After a few hours, the mate, deciding that the boat was overloaded, "proceeded to throw overboard sixteen of the passengers, including several young girls, amid scenes too horrible to describe." The mate was later tried and convicted of manslaughter.

Going well south to get the benefit of stronger winds and the shortest theoretical course, the Australian clippers frequently experienced bitterly cold as well as boisterous weather, with heavy gales, and they took great chances at times with ice, particularly on the run from Australia east to a point beyond Cape Horn. The Canadian-built clipper *Guiding Star*, which arrived in Liverpool in October 1852 and was promptly chartered by the Golden Line for its Australian service, was lost at sea in early 1854. It was the general feeling, based on supporting evidence, that the ship (when only a year and a half old) "became embayed and back-strapped by a huge ice island in the South Atlantic about 45° S., 25° W." The Canadian-built Black Ball liner *Indian Queen* (1,041 tons) narrowly escaped destruction by ice on April 1, 1859, when sailing far south (58° S., 151° W.) bound from Liverpool to Melbourne. The Chelsea-built clipper *Malay* (868 tons), bound for Sydney from New York in early 1854, according to the log, "encountered much ice, both bergs and floes." Captain Hutchinson wrote, "For several days have had a most anxious time." The beautiful and speedy Pook-designed *Herald of the Morning* of 1,294 tons, which ended her days under the British flag and was in active service when forty years old, had several experiences of interest off Cape Horn. In 1859, during a passage from Callao to Hampton Roads, she had a direct collision with "an immense sperm whale," losing part of the stem and injuring the ship to such an extent that the resulting bad leak could be kept barely under control by the steady operation of the ship's pumps throughout the remainder of the voyage. In 1866, on a passage from Boston to San Francisco, Capt. Cyrus Sears reported, "Encountered over 50 immense icebergs off the Horn"; also, "Was lucky to avoid collision with them, having several close shaves." In 1868, on a run from New York to California, Captain Winsor reported a continuous midwinter westerly gale, with snow, for twenty days off the Horn, and "at times the ship was so badly iced up as to be perfectly unmanageable."

The *Chariot of Fame* of 2,050 tons (Captain Knowles), after completing her operations in the Australian run under charter of the British White Star Line, was 23 days rounding the Horn on a passage from Baltimore to San Francisco in 1860 and reported "serious trouble with ice." Near the Cape, the ship had to dodge "three immense icebergs," and "fields of ice were visible from the topgallant mast as far as the eye could reach." (Following the completion of this voyage, the "*Chariot*" returned to the Britain-antipodes trade and ended her days under British registry.) The Medford-built clipper *Osborne Howes* of 1,110 tons (Captain Baxter), on her last westbound run to California in 1860, reported terrific

winter weather off Cape Horn and much interference with ice; also, "Saw many huge icebergs and had great difficulty keeping clear." The log reads on August 31 (in 58° S., 63° W.), "Saw a ship and a bark six miles astern steering directly for a solid block of field ice, the weather being somewhat thick with night coming on." Another Medford-built ship, the *Panther* of 1,278 tons (Captain Johnson), arriving at San Francisco from New York in December 1868, reported, "Had a most anxious week off the Horn while surrounded by huge icebergs."

The *Marco Polo*, on her second homeward passage from Melbourne to Liverpool, reported during her run to Cape Horn (in Lat. 60° S.) on June 23, 1853, when 13 days out: "Progress severely stopped by large quantities of small ice, which tore all the copper off the bow." Four days later, Captain Forbes reported that the ship was "surrounded by ice" and that from June 27 to July 1 "only small runs could be made because of ice," which made sailing, particularly at night, "most hazardous." On a passage home from Australia in 1861, the *Marco Polo* collided with an iceberg during her run to Cape Horn; her bowsprit and headgear were carried away, the bow stove in, and foremast sprung. The ship was so seriously damaged that it was thought that she would founder, but after temporary repairs were made, she was kept afloat by incessant pumping. Eventually, she managed "to struggle into Valparaiso." We are also told by an English marine historian, "Tragic encounters with ice were by no means unusual in the fifties and sixties, when every passage-maker was trying to follow Maury's instructions by running far down into southern latitudes in search of strong, fair winds." It is probable that many ships that disappeared at sea, leaving no trace behind them, were lost because of icebergs and heavy ice floes.

The *Red Jacket*, on the return passage to Liverpool of her initial Australian voyage, had a narrow escape from being embayed by ice immediately after rounding Cape Horn on August 23, 1854; for on the morning of the 24th she had to shorten sail, reduce speed to "about 4 or 5 knots," and dodge field ice and bergs. Attempts to force a passage through ice caused damage to the vessel's stem and copper sheathing. In the evening of the 24th, the ship had to put about and furl sail for the night. On the 25th, the experiences of the preceding day were repeated; there was great difficulty "in grinding the ship through the floes, and it looked as if the ship might be held in the ice for weeks," as icebergs as much as two miles in circumference and a hundred feet high were encountered. The vessel was hove to again at night, and on the 26th "there was not a breath of wind and with ice all around the ship was carried back to the west with the current." On Sunday, the 27th of August, conditions improved, a breeze sprang up, an iceberg two hundred feet high was cleared, and after being virtually imprisoned in the ice and delayed three days, the *Red Jacket*, by evening, worked clear. During the night of August 27-28, she was "running close-hauled 14 knots an hour."

To show the menace at times of ice floes and bergs in the Australian trade route when ships were generally benefiting from westerly winds in the Roaring Forties and fifties of the Southern Hemisphere, the following table is presented based on the ships' logs and captains' reports of a more recent period:

| Date | Ship | Icebergs Encountered | | Date | Ship | Icebergs Encountered | |
|------------|------------------------|----------------------|----------------|-----------|-------------------|----------------------|----------------|
| | | Approximate Height | Position | | | Approximate Height | Position |
| | | <i>Feet</i> | | | | <i>Feet</i> | |
| Apr. 1892 | CROMDALE | 1,000 | 46° S., 36° W. | Oct. 1892 | LIVERPOOL | 800 | 55° S., 94° W. |
| May 1892 | STRATHDON | 1,000 | 45° S., 25° W. | Jan. 1893 | LOCH TORRIDON | 1,500 | 51° S., 46° W. |
| May 1892 | LOCH TORRIDON | 1,000 | 45° S., 24° W. | Feb. 1893 | CUTTY SARK | 1,000 | 50° S., 43° W. |
| June 1892 | COUNTY OF EDINBURGH | 900 | 45° S., 37° W. | Mar. 1893 | TURAKINA | 1,200 | 51° S., 47° W. |
| Sept. 1892 | LOCH ECK | 1,000 | 44° S., 2° W. | Apr. 1893 | BRIER HOLME | 1,000 | 49° S., 51° W. |
| Oct. 1892 | CURZON | 1,000 | 44° S., 31° W. | May 1893 | CHARLES RACINE | 1,000 | 50° S., 52° W. |

*The Gold Rushes to California and Australia and Their
Effect on Shipping and Ocean Trade*

The Gold Rush to California, following the "great find" of 1848, got under way in 1849-1850 and caused what was, up to that time, an unprecedented boom in the demand for ships. It was closely followed by the discovery of gold in Australia, near Clunes, in March 1850. By September 1851, gold was being found in great quantity, and licenses were being quite freely issued to prospectors and miners. Sydney had been the principal port of the Australian colonies and continent, but we are told that "the discovery of gold gave priority in a marine and transportation sense to Port Phillip and to Melbourne, and Geelong, specifically." Victoria was made a separate province in July 1851. The population of Melbourne, its capital, increased from 23,000 to 70,000 in eighteen months and that of Geelong from 8,000 to 20,000 in the same period. In 1852 over 102,000 people arrived from Europe—and to some extent from Asia and the Americas—and settled in Victoria, booming shipping for emigrants and passengers first and then, later, for supplies and general freight. In the five years 1852-1857, during which the rush to Australia for gold was at its height, 214,000 persons landed on the shores of Port Phillip from the British Isles, of which 47 per cent were English, 28 per cent Irish, 23 per cent Scotch, and 2 per cent Welsh; 25,000 landed from China, 8,000 from Germany, 3,000 from the United States of America, 1,500 from France, and smaller numbers from countries of both hemispheres.

When gold was discovered in Australia in 1851, and the rush of emigrants to and trade boom with that continent commenced, it was decidedly and solely—as was the trade to California—one-way traffic. Australia had nothing to export and but very little to use as barter; the appetency for goods was tremendous, and the allure for both legitimate colonists and adventurers was great. At first gold dust was the extremely valuable but almost only commodity (other than a little wool) shipped out of the continent, and naturally the largest movement of gold in any one bottom took up but little space and only an insignificant part of a ship's deadweight carrying capacity. Packets returning direct to Britain had to be ballasted, but gradually wool became an important as well as the prime article of export, with associated tallow; still later, hides and finally wheat were shipped in quantity. The extent of the early traffic in gold may be judged from the fact that the yield of the Australian gold fields up to the end of 1852 was officially estimated as £16,000,000 sterling, or about \$78,000,000. At mid-century, the emigration to the antipodes was about 100,000 persons per annum, but this rapidly increased with the Gold Rush, and for the four years 1851-1854 inclusive, an average of 340,000 persons per year landed as emigrants at the Australian British Crown colonies. It was the demand for shipping space to transport these emigrants that caused the great boom in the packet lines running between England and Australia and gave impetus to the building and use of large American-built clippers in the British-Australian trade.

The misery and sufferings experienced by emigrants (with a wretched record of mortality) making the long run from England to Australia in the thirties and forties of the nineteenth century are difficult to comprehend in these days. Up to the advent of American-built clippers (from U.S.A. and Canadian shipyards), the accommodations on British ships were atrocious. It was said, "The arrangements made for carrying emigrants and the handling of them on these voyages of about six months' duration are not only inhuman but also hellish." The reports of the fiendish conditions existing on these small and slow British ships, with the emigrants treated more like convicts or as "a cargo of slaves," caused the British Government to appoint a parliamentary committee in 1844 to investigate the matter.

The report of the committee blamed the emigrants themselves as well as the ships, the long route through the tropics, and the rough waters of the southern latitudes for the conditions existing, but extracts tell us that the passenger space was like a loathsome dungeon. "When hatchways were opened under which the people were stowed, the steam rose and the stench was like that from a pen of pigs." The straw (of the few favored, who used it for bedding), "once wet with sea water, soon rotted, besides which the emigrants used the between decks [their living and sleeping space] for all sorts of filthy [unsanitary] purposes." In bad weather the passengers were unable to go on deck and prepare hot drinks and cook food, "the strongest maintained the upper hand over the weakest," and "there were women who died of starvation."

In *REMINISCENCES OF EARLY AUSTRALIAN LIFE*, the author, who had gone out to Melbourne from England in 1840, tells of maritime conditions in 1853 as far as a return passage to England on the best of the available British-built ships was concerned. At that time, ships reaching Australia were promptly deserted by their crews for the gold fields as were the vessels reaching California during the years 1849-1853. Two good ships, we are told, were to sail for London "with cargoes of wool and gold dust as soon as they could ship crews—one the *Madagascar* of Green & Co.'s line (Blackwall) and the other the *Medway* of Tindall & Co.'s line." A passage in "a first-class cabin" was purchased for £80 (about \$400) on the *Medway*, and the choice of ships was fortunate for the writer, for the *Madagascar*, sailing the same day, was never heard of again. "She either foundered at sea, or, as was generally supposed, was seized by the crew and scuttled and the gold [four tons] taken off in boats." No matter what happened to the crew, it is sure that the passengers all perished in the sea or were murdered. We are told that on the *Medway* the gold dust cargo (of about four tons), "packed in well-secured boxes of two hundred pounds each," was stowed under the berths of the saloon (first-class) passengers. "Each cabin was provided with cutlasses and pistols, ready for use, and a brass carronade gun loaded with grapeshot was fixed in the after part of the ship, in front of the saloon and pointed to the forecabin—not a man, with the exception of the ship's officers and stewards, being allowed to come aft." The character of the crew shipped, it would seem, necessitated these precautions, for we read:

On the day previous to the ship's sailing, men had to be searched for and found in the lowest haunts, brought on board drugged and under the influence of liquor, and placed below the hatches. We, the passengers, heaved up the anchor and worked the ship generally until outside of Port Phillip Heads, when the men confined below, who were to compose the crew, were brought on deck, looking dazed and confused, any resistance or remonstrance on their part being futile. . . . Among

them were useless hands. . . . Some, no doubt, were escaped convicts, or men who had secreted themselves to evade the police and law; others deserters from ships then lying in the Bay—about forty in all, and in general appearance a very unprepossessing lot. However, there being no help for it, we had but to keep guarded and prepared against the worst, the ship's passengers together with the officers numbering about twenty hands.

This voyage in one of "Green's good ships," which ranked high as a British colonial sailing packet, extended "over four months from the time we left Port Phillip Heads until she reached the English coast," and she made the passage, port to port, in about 130 days. At about the same time (1853-1854), the U.S.A.-built clipper *Sovereign of the Seas* ran from Liverpool to Melbourne in 78 days (a passage "with light and baffling winds") and returned in only 68 days; but it is interesting to record that "a dangerous mutiny was experienced on the passage home, the ship bringing back a great deal of treasure." It would seem that the historian who said that "American clippers reduced the running time between England and Australia about one-half" was substantially correct as was also the statement that "American ships, their masters and owners performed a great service for emigrants and the British nation, for they humanized the carrying of large numbers of poor passengers to the antipodes, greatly shortened the voyages, furnished ventilated, sanitary living quarters, and reduced the death rate due to hazards of the journey to zero." It was also said, "The

competition of the Black Ball and White Star [Liverpool-Australia] lines [using American-built clipper ships] proved of great benefit to both cabin and steerage passengers, as their comfort and convenience became subjects of consideration in a manner unthought of in the old days before the discovery of gold at Bendigo and Ballarat."

The British-Australian lines operating from Liverpool leased, bought, and ordered built in American shipyards a substantial fleet of good-sized clipper ships in the early and mid-1850's. The London shipping firms also chartered or encouraged the sailing of American clippers to the antipodes in the fifties to compete with the Liverpool lines that were "taking the business that heretofore London shipping firms had enjoyed." We are told in the report of the "Select Committee on Merchant Shipping of Britain" that between 1852 and 1859 sixty-six non-British vessels, mostly American and carrying 15,432 persons, departed for "Oceania" from British ports.

The shipyards of the eastern states of America overbuilt during the days of the California Gold Rush and its associated trade and transportation boom, but this situation was helped out, at least for a while and that to a substantial degree, by the Australian gold find. This discovery—and the desire of so many Britishers to emigrate to a promising new colony—created a great demand for fast ships, and the gold find in Australia exercised the same influence on sailing ship tonnage as had the discovery of gold in California. The Australian (or British colonial) clippers rapidly commenced to build for themselves a history that became as important as that of the California fleet and as interesting as that of the tea fleet. Moreover, the boom in Australian trade, which commenced with the gold find, continued at a later date with wool, and sailing vessels were found steadily employed in this trade long after the California around-the-Horn service and the China tea trade for ships were things of the past.

Whereas 1853 was the peak year and "grand climacteric" of the American clipper ship era as far as the construction of ships and the number of fast passages were concerned, 1852 was the real golden year of American shipping, and its like was never to be seen again. In that year, 75 clipper ships, other than ordinary sailing vessels, were launched from East Coast yards spread along the coast line from the Chesapeake to the Passamaquoddy, the first of the very large extreme clippers (*Sovereign of the Seas* of 2,421 tons) was launched, and many of the most beautiful ships that ever skimmed the waves were put in the water. In 1852, 117 real clipper ships sailed from East Coast ports to San Francisco, freight rates reached their peak, and the demand for marine tonnage exceeded the available supply. The shipping boom that had developed with the finding of gold in California was still on the increase, and the rush of 1850 and 1851 continued with greater crescendo and as "merrily and madly" as ever. The California trade, on which the boom was built, showed no sign of abatement. During 1851, 18 fast American vessels (16 ships and 2 barks) had loaded tea in China and carried it to London—enjoying a premium in freight rates over the slower British ships; while 32 other American vessels had loaded in India, Manila, and other Far Eastern ports for Britain. But one of the most optimistic factors affecting the outlook for American shipping—and giving promise that the future would be still more glorious than the present and the past—was news of the discovery of gold in Australia. Carl C. Cutler, in *GREYHOUNDS OF THE SEA—THE STORY OF THE AMERICAN CLIPPER SHIP*, writes:

Trickling through, in the early fall of "Fifty-one," by the Isthmus, from England, and on whalers ramping home from the South Seas deep with "grease," came strange whisperings from Australia. In a few weeks the whispers became a shout. Gold again!

Red-shirted miners from the "played-out" diggings of the Sacramento began to crowd the ships leaving San Francisco for Sydney and Melbourne. Pay dirt was harder to find along the creek bottoms of California. Astute eastern merchants rubbed their hands and ordered another clipper.

Whereas many discontented or disillusioned gold-seeking adventurers who had participated in the Gold Rush to California undoubtedly looked with longing eyes during the

winter of 1851-1852 and the following year to the bonanza of the antipodes, but very few ships—and they were small and generally inferior ones—made the passage from San Francisco to an Australian port. Such ships could carry out only would-be miners and adventurers (who had been unsuccessful in California and, therefore, had little money), and no freight and practically no cargo could be booked for a return passage, as the bigger and better ships engaged in trade between Britain (and other North Atlantic ports, such as New York and Boston) and the antipodes were gobbling up every bit of Australian produce that could be exported, clamoring for more, and competing with each other to get it. Contact between the United States and the gold-producing region in Australasia was from an American East Coast or a British port, and the first sailing of a sizable and fast ship from the United States to Australia following the gold find was that of the lovely and yacht-like New Hampshire-built clipper *Nightingale* of 1,066 tons (launched June 16, 1851), which sailed from Boston for Melbourne on October 18, 1851. The year 1853 was to see more clipper ships built in the United States than any other year (120 as against 75 in 1852 and 71 in 1854—when McKay and others built several ships for the British to be used in the Australian trade). There were also more clipper ship sailings from East Coast United States ports to California (150 as against 117 in 1852 and 109 in 1854) and a greater number of recorded fast passages; for more American clippers were plowing the ocean and traversing the trade routes of the world, and competition was keener. Freights were still high in 1853, and the volume of business reached a record high, but it has been well said, "With the passing of '52, there passed also something of the careless, confident optimism that had characterized the two previous years. An intangible something was creeping into the business atmosphere—a something that was to take form as '53 wore on and crystallize into the genuine depression of 1854."

Again, 1851 can be said to be the year of realization in the design and construction of the type of high-speed, sharp-lined, loftily sparred, and excessively as well as flexibly canvased merchant sailing ships that became known the world over as "clippers." Cutler says:

Whatever might be added in years to come of size or swiftness, power or finish or convenience, the pioneer work was ended. Thenceforth, there could be only refinement or a more efficient combination of lines and principles already embodied in living ships. The data had been gathered; the analyses were complete; the principles established. The rest was synthesis, which is perhaps to original

work what the fitting of puzzle pictures is to art. Fine, useful—on occasion, even noble work, but calling for a keen sense of discrimination rather than a highly developed inventive faculty. The one impossible except to altruistic natures—the other impossible where the altruistic sense predominates. One forward looking, the other exploitive.

It can be said that, as far as shipping and shipbuilding in the United States are concerned, 1851 was a year of great activity, demand and growth, and of unprecedented appetency, with the deification of the present and no thought of the future except in the most roseate and superficial sense; 1852 was in all marine matters—building and operations—a year of confidence, of surety, and of certainty regarding the future. In 1853 optimism, with hope, predominated; but as the year advanced, there were innermost thoughts in the minds of the more intelligent and observing, followed by whisperings, that possibly "the clipper ships have been overdone." There were ominous signs seen by the most attentive, analytical, and heedful that the boom had spent itself and that the pendulum, which had started its swing to the right a full decade before, not only was wavering but also had commenced to reverse itself and begin its movement back to the left. The year 1854 for American ship-owners and shipbuilders was one of apprehension, doubts and fears, and a definite commercial depression developed, followed by "lengthening shadows," pessimism, and liquidation.

The finding of gold in Australia tended to make 1852 a year of great promise for American shipping, and a pyramided boom going far beyond the maximum of trade associated with the Gold Rush to California was anticipated. However, California business commenced to decline in 1853, and satiation was evident. Too many ships had been built to supply the tonnage demands of 1850-1852, competition for cargoes and passengers became

too keen, freight rates and passenger fares dropped, and only part of the ships making the run out to San Francisco could find cargoes for North Atlantic ports in the Orient and India. As there was absolutely no freight to be shipped out of California, the Pacific Northwest or any United States West Coast port, or from the antipodes in case an American ship should make a run from San Francisco to Sydney or Melbourne en route home, it became necessary for American clippers either "to eat up" most or all of the profits made on a westward Cape Horn passage by returning home in ballast—with no revenue and only expense resulting from the eastward passage, which was about one-half of an entire voyage in both time and cost—or else "to eat their pride" and degenerate into the carrying of the despised and filthy Peruvian guano on part of the run home. This was for years the only revenue-producing freight available, and ships returning from California (also occasionally from Australia) to a North Atlantic port had either to go to Callao for Chincha Island guano or to return home in ballast and with holds empty of freight.

The gold find in Australia stimulated the clipper shipbuilding boom in America, but the anticipated increased trade for American bottoms was realized only in part—and that for a limited period of time and under conditions and underlying restrictions that tended ultimately to increase rather than ameliorate depressing shipping and business conditions in the United States in 1854 and 1855 and intensify the panic of 1858 and the unrest, instability, and uncertainty that preceded the Civil War. In the fifties, the construction of a railway across the Isthmus of Panama—connecting with steamers at the Atlantic and Pacific sides—cut seriously into the best business of the Cape Horn American clippers, took volume from them, and materially reduced freight rates. Several American clippers were placed in the East Coast United States-Australia trade, but such ships were handicapped from the start in relation to British ships and ships sailing to the antipodes from British ports; for the demand for carrying emigrants outbound was "terrific and extremely profitable," and ships sailing from a United States port did not enjoy any part of this business. Moreover, Australia, although a relatively young British colony, had a very strong British Empire feeling, and the shippers and authorities in both Australia and New Zealand were about as prejudiced and pro-British as the English themselves. However, as available British ships and shipbuilding facilities could not cope for many years with the demand for "colonial tonnage," a number of Yankee clippers that were not needed and were rapidly growing unprofitable in the American coastwise around-the-Horn trade was chartered by British shipping firms and placed by them in the England-Australia run. These chartered American clippers operating in British lines or under the flags of well-known British shipping companies—and the British ensign—were advertised and accepted by the public, shippers, and passengers as *British*. This condition existed, however, only as long as there was a deficiency of British-built and owned tonnage. When "fully British craft" were available in ample quantity for trading with the antipodes, American-owned and, soon after the Civil War, even British-owned but American-built ships were discriminated against in many devious ways that were effective in driving American-built ships out of the trade and making the shipping engaged in the England-Australia and New Zealand trade "thoroughly British."

If Australia had depended on gold alone for prosperity, the emigration, trade, and shipping boom would probably have been of very short duration, and the reaction—in the nature of a depression—would have been fully as severe as that which upset the American shipping interests in 1856-1860 and drove many into insolvency. British shipowners were more under-tonnaged at the time of the Australian gold find than American shipowners were over-tonnaged following the big construction years of 1852, 1853, and 1854. Again, British ship operations were helped in the later fifties by the Indian mutiny (1857) and then by the Crimean War, with associated demands for ships to carry troops and supplies. As British tonnage proved inadequate to take care of the Australian and Indian merchant trade and, in addition, to handle military demands for floating bottoms, we find that three of the McKay clippers built in 1854 at East Boston, Mass., were used as troopships during the Sepoy Indian

mutiny and that the *Great Republic*, built in 1853, was one of several other well-known ships that operated as a troopship during the Crimean War.

The Australian boom, with its emigrant movement followed by over-ocean demands for supplies and, later, for the shipment of colonial products to Britain, was fairly well maintained, and the opening up of a new country proceeded on fairly sound lines and operated materially to benefit British shipping. It has been well said:

If it was the discovery of gold that founded Australia's fortune, the Golden Fleece and the Wheat Sheaf have set it upon a rock. It was the gold fever that swept the great tide of emigration in the direction of the Southern Cross and carried the star of the Liverpool shipowners upon its flood, but that star began to set as soon as the output of alluvial gold began to diminish. . . . The

percentage of emigrants landed in Australia who stuck for any length of time to the elusive hunt for gold was very small, and the greater number of the gold-seeking emigrants eventually settled and worked on the homesteads and great runs of the interior, with the natural result that there was a large and steady increase in the output of wool, hides, tallow, wheat, and other land products.

The huge Liverpool emigrant ships were not fitted for the economical transport of Australian products to England and to its central market, which was in London. The large Australian gold boom clippers proved too big for the service as Australia became primarily an infant agricultural nation, or colony. A British historian has truly said: "Thus it came about that the wonderful American-built ships dropped out of the running, but their London rivals, the British-built ships, . . . being able to fill their holds quickly, continued to carry passengers outward and wool homeward." He implies, however, that the British ships were of "imperishable teak" requiring "no heavy repair bills" and that such British "wood" ships had a virtual monopoly of the Australian trade until supplanted by "the magnificent iron clippers of the Clyde, Liverpool, and Aberdeen." British wood ships continued for as long a period as they were built to be greatly inferior to American ships. The "imperishable teak" referred to was wisely used by the British for the planking of their composite ships (both outer hull and weather deck), but their sizable wood ships, to the end, were constructed—as were the American—of oak and hard pine. Gradually, the best and cheapest ships that Britain could build, which proved to be iron ships, gained the ascendancy in the British colonial trade, and this Britain naturally dominated.

"The Carriers of the Golden Fleece"

Prior to the discovery of gold in Australia, the trade of that British colony was of insignificant proportions, and the British ships engaged therein were generally very small, slow, and inferior. Much has been written of the horrors of the convict ships, but a report given before a British parliamentary committee in 1844 describes conditions on British emigrant ships as fully as bad in many respects and "as hard and revolting" as those existing on the notorious convict carriers.

Gold was first found in Australia in March 1850, but it was not until September 1851 that it began to be found in quantity, mining licenses were issued, and the lure of gold caused a rush to the mine fields from various parts of the country and from overseas. The first Australian gold to be carried from the colony to the mother country reached Plymouth February 3, 1852, on the Aberdeen White Star liner *Phoenician*, a wood ship of 530 tons, built by Walter Hood at Aberdeen in 1846. The demand of the clamoring hosts of adventurers for passage

from Britain to Australia for several years during the "Gold Rush" was far in excess of the capacity of all British ships that could be diverted to the colonial emigrant trade. All available British ships were small in the fifties, and the demand was for bigger and more roomy and high-sided fast ships that could carry large numbers of steerage passengers; hence the call for American clipper tonnage, American type of accommodations, and American methods in carrying emigrants. United States ships operating in the North Atlantic "ferry" had been finding the carrying of emigrants a good substitute for the carrying of freight that they could not get on the westbound run. Capitalizing this experience and being aware of the difference between a north transatlantic passage and one of about five times the mileage, with the route crossing the tropics as well as sailing in the Roaring Forties, Americans were quickly prepared both to produce ships and to equip and operate them in the Australian emigrant trade in a way that made them pre-eminently successful and as popular as they were profitable while the gold boom lasted. It was during the era of Australian trade of the mid and late 1850's and prior to the Civil War that big American clippers handled practically all the cream of the trade between Britain and Australia. Basil Lubbock, the British marine historian, in *THE COLONIAL CLIPPERS*, says:

Though undoubtedly the chief reason of orders to builders across the Western Ocean was cheapness, yet at the same time it was recognised that no ships that sailed the seas could approach the sailing records made by the "Down East" clippers of Maine and Nova Scotia. And everybody was in a violent hurry to get to the new Eldorado, so naturally took passage on the ship which had the

greatest reputation for speed. Thus the Australian gold boom filled the shipyards of America with orders for large passenger carrying clippers. Indeed the only British firm which could in any way compete with the builders of the Yankee soft-wood ships—that of Hall, of Aberdeen—had not yet built a ship of over 1,000 tons.

It was not speed alone that opened the British-Australian trade to American ships, but size and accommodations for large numbers of emigrants carried sensibly rather than being packed like sardines in a box. Again, American ships were proportioned to be good sea boats, and they were much more comfortable for passengers in both the humid heat of the tropics and the gales of the cold southern latitudes than the small and inferior British ships. The only large clipper built in Britain during the real clipper ship era was the wood Australian packet *Schomberg*, built by Hall, of Aberdeen, in 1854-1855 for James Baines's Black Ball colonial line. This ship, after a discouragingly slow run under the command of Capt. "Bully" Forbes, was wrecked before she completed her maiden passage. Fast American clippers were not restricted to the products of "Maine and Nova Scotia" shipyards; for Maine built but relatively few real clippers (although the *Red Jacket*, probably the best of all the Australian clipper packets, was built in Maine), and Nova Scotia-, New Brunswick-, and Quebec-built ships, while British, could not compare with the quality of output of the numerous New York, Massachusetts, Connecticut, New Hampshire, and Maine yards. Moreover, the Australian gold boom did not fill "the shipyards of America with orders for large passenger carrying clippers," for the Australian boom developed when the Californian boom was waning and during a period of reaction—which later developed into a depression—in the United States. Whereas the British felt a great need for big American ships in their Australian trade, they ordered only a quartet of ships to be built in United States yards to their order; however, they did buy many Yankee-built ships for their trade when new, relatively new, or when several years old, and they chartered large numbers of such ships to operate under their flag. Several ships were built in the eastern Canadian provinces that were later owned by British colonial lines and operators in the Australian trade, but only a very few were built in Canada under orders for the British, most of them being constructed "on spec" and sent across the Atlantic by their builders to sell in the British market. Britain could not at any time compete with the United States in the building of sizable wood merchant ships, and the contemptuous phrase "Yankee soft-wood ships" is used by British writers in prejudice and ignorance in their description of American vessels built of oak and other hardwoods that outlived British ships of the period and any British merchant ships of size planked with

wood except some that were composite-built and used "imperishable Indian teak" for planking over iron framing.

American-built ships in the British-Australian trade were emigrant ships, and the large vessels needed to carry the crowds of steerage passengers and freight out to the British colonial El Dorado had to return with almost empty holds, a "handful of passengers," and often a valuable shipment of precious metal that required but little space to carry. Wool, tallow, and ore were available for export from Australia in only very small quantities for many long years. Following the gold find, the bushmen, stockmen, and agriculturists left their flocks, herds, and crops and rushed to the gold fields. Shearers, harvesters, and labor in general became unavailable, and wages soared to fabulous heights. The relatively small output of exportable wool and tallow dropped to practically nothing, and the trade for a while was entirely one-way, with the ships packed with passengers and goods outbound and empty on the return. Emigrants thronged to Australia and overran the new gold fields as they were discovered, but gradually the stampede fever abated, disillusioned adventurers stranded in a new country with no money to get out—even if they wanted to—had to go to work, and the continent commenced to be settled by the emigrants, its possible resources developed, and its opportunities utilized. An overwhelming percentage of the gold-seeking emigrants eventually settled on the land and raised sheep and cattle, with a marketable output of wool, tallow, and hides, and this was followed by agricultural crops that became available for export. It was the big Liverpool emigrant American-built ships that had taken most of the adventurers out to Australia, but these ships never lived to see the day when they could load up with Australian products and carry a paying freight both ways, which was an economic condition necessary for their survival in the trade. London became the chief British port for the Australian import wool trade as it had in the China tea trade, and small British ships in the late sixties and seventies were able to pick up enough Australian export products to give them fairly good cargoes for their small holds. The big ships could not load enough freight to make it possible for them to operate with economy, so they had to drop out of the trade. The Yankee-built Australian emigrant clipper packet ships of 2,000-2,500 tons and the once popular American liners and general traders of 1,400 tons or more proved too big for the Australian-British trade after the gold fever had subsided, and gradually British-built ships of from 500 to 1,000 tons supplanted them in the economic handling of the relatively small number of passengers to be carried out and the small cargoes of wool available for export to London. The day of the large emigrant ship (American-built) and its one-way freight was past, and it was the small British-built ships that became "the carriers of the Golden Fleece" and which in the seventies and eighties raced home with wool for the London wool sales generally held in January, February, and March each year.

The era of the Australian wool clipper can be placed from the year 1860 to 1885. Wooden ships were used in the sixties, composite clippers in the late sixties and seventies, and the iron clipper held the ascendancy from 1866 to 1885, with sailings of the Australian wool fleet from Sydney, Melbourne, and Geelong to London continuing into the nineties.

The Aberdeen White Star Line, prominent in British maritime affairs during the middle of the nineteenth century and for many years thereafter, dates back to 1825. It was founded by the Thompsons, who remained big owners, and George Thompson was the principal owner and manager during an important transition period of the British mercantile marine. During the years 1842-1866 inclusive, the line built twenty-three vessels—generally of the small Aberdeen clipper type—all of wood. In the forties, the five vessels built averaged 491 tons; in the fifties, ten ships were built that averaged 866 tons; and during the seven-year period 1860-1866 inclusive, the eight vessels built averaged 1,024 tons. In the fifties, two ships of over 1,100 tons joined the line and in the sixties, three ships, the largest vessel of the fleet being the *Kosciusko* of 1,192 tons. During the years 1867-1870 inclusive, the following six ships were added to the fleet in addition to the pioneer iron ship of the line, the *Patriarch* of

1,339 tons, which was ordered of Hood, of Aberdeen, in 1869 and was followed in 1871 by the iron ship *Miltiades* of 1,452 tons, also built by Hood.

| Name of Ship | Year Built | Ton-nage | Construction | Name of Ship | Year Built | Ton-nage | Construction |
|--------------|------------|----------|--------------|--------------|------------|----------|--------------|
| THYATIRA | 1867 | 962 | Composite | ASCALON | 1868 | 938 | Wood |
| JERUSALEM | 1867 | 901 | Wood | CENTURION | 1869 | 965 | Composite |
| THERMOPYLAE | 1868 | 948 | Composite | AVIEMORE | 1870 | 1,091 | Wood |

The *Aviemore* was the last but not the largest wood ship built by the Aberdeen White Star Line, for the following five wood ships of the fleet were larger: *Omar Pasha* of 1,124 tons, built in 1854; *Star of Peace* of 1,113 tons, built in 1855; *Kosciusko* of 1,192 tons, built in 1862; *Nineveh* of 1,174 tons, built in 1864; and the *George Thompson* of 1,128 tons, built in 1865. The Aberdeen White Star Line held on to wood construction exclusively until 1867 and in that and the following year built both a wood and a composite ship, abandoning wood after 1870, and after its first iron ship, the *Patriarch*, had proven herself in actual service, it turned entirely to iron. The *Thyatira*, the first composite ship of the line, was notoriously tender and gave both the command and the owners much concern; but with the experience gained with this vessel, their next ship, the *Thermopylae*, was easier to handle and made a record for speed for a ship of her class that will never be effaced from the pages of history. The *Thermopylae* was exceedingly fast and a good vessel of her type, with outstanding personality. However, she was primarily a British China tea clipper and, like all vessels of her class, was narrow and sharp and lacked initial stability; she was heavily canvased and a poor carrier, being built primarily for speed. These faults persisted in the design of British sailing ships to the end of the era of sail, but became less conspicuous as the ships were built bigger and fuller. British ships in the Australian wool trade required ballast as they did in the tea trade, and it was said that a British ship with a wool cargo "was reckoned to require two-thirds of the ballast necessary when in ballast alone." To get the required stiffness, wool clippers carried hides and tallow stowed low and generally some metal (copper, silver, lead, spelter) and at times kentledge, stones, and nonpaying deadweight.

The Duthies, of Aberdeen, wood shipbuilders and timber merchants, were also ship operators and among the pioneers in the Australian trade. Their first vessel was the *Jane Pirie* of 427 tons, built in 1847 for the Indian trade, and the *Brilliant* of 555 tons, launched in 1850, was put in the Australian trade in the early days of the Gold Rush as a passenger colonial clipper. She is credited with a run out from London to Melbourne (pilot to pilot) in 87 days on her maiden passage to Australia. In the sixties, the Duthies built five wood wool clippers of from 832 to 1,159 tons register named after members of the family. In 1869 they first used some iron in the construction of a ship, but this vessel, the *Abergeldie* (1,152 tons), was not composite-built, but had merely iron beams. Duthie was one of the first British owners of Australian clippers to send ships to the West Coast of South America for guano or nitrate. The following passages from London to Melbourne were reported made by Aberdeen White Star and Duthie ships in 1872:

| Name | Line | Passage in Days | Name | Line | Passage in Days |
|--------------------------|------------|-----------------|--------------------------|------------|-----------------|
| CENTURION (composite) | White Star | 78 | ASCALON (wood) | White Star | 94 |
| ANN DUTHIE (wood) | Duthie | 80 | MAID OF JUDAH (wood) | White Star | 94 |
| JOHN DUTHIE (wood) | Duthie | 86 | ETHIOPIAN (wood) | White Star | 98 |
| THYATIRA (composite) | White Star | 89 | WILLIAM DUTHIE (wood) | Duthie | 107 |
| | | | STRATHDON (wood) | White Star | 109 |

These nine ships averaged 940 tons; the *Maid of Judah* (756 tons; built in 1853) and the *Ethiopian* (839 tons; built in 1864) were below 900 tons, and the *Strathdon* (1,011 tons; built in 1860) and *John Duthie* (1,031 tons; built in 1864) were the only ships of over 1,000 tons register. The average reported length of passage for the nine ships was 93 days.

Whereas Melbourne and Sydney were the principal ports used by the Australian iron wool clipper fleet in the seventies and eighties, South Australia, which from the early fifties had been sending wool to London from the port of Adelaide in exchange for general cargoes, continued as a port of prominence and is historically famous for its lines of small wood and composite clippers and for the driving of them—Yankee fashion. Referring to the little Adelaide clippers, Lubbock says:

Their captains were always in keen rivalry and put a high value on their reputations as desperate sail carriers. They made little of weather that would have scared men who commanded ships of three times the tonnage of the little Adelaide clippers, and they were not afraid of a little water on deck—indeed, when running down the easting, their ships were more like half-tide rocks than merchant vessels, being swept from end to end by

every roaring sea; and even in only a fresh breeze their decks were hidden by a curtain of spray. It was a common saying that they took a dive on leaving the tropics, came up to breathe at the Cape and did not reappear again till off Cape Borda. A South Australian trader prided himself on carrying a main topgallant sail when other ships were snugged down to reefed topsails.

The British commanders of these Adelaide clippers had learned much about driving their ships from Yankee skippers, but they did not have as able, seaworthy, and as well-modeled and proportioned ships under them as American captains. When Dumaresq, of the Kennebec River, Maine, was driving his last command, the relatively small *Florence* (for an American-built ship), under almost full sail past British ships with their topsails reefed, his vessel was dry and buoyant and all on board comfortable; whereas it is said that the crews of the Adelaide clippers "rarely knew what it was to have a dry shirt on their backs."

The Orient Line started with clipper sail in the South Australian trade and persisted in developing into the present line of that name. (Prior to the second World War of the twentieth century, it ran 24,000-ton modern power liners between Britain and Australia.) This line named its pioneer vessel, the *Orient*, a wood ship of 1,033 tons, built in 1853, after itself. Taken by the British Government for use as a troop transport, she did not enter the South Australian trade until 1856, but between June 1856, when she commenced her first outward run to Adelaide, and her arrival out in December 1877, she made twenty-one passages and averaged 83 days from Plymouth to Port Adelaide, pilot to pilot. (The time from London was from four to seven days longer.) The *Orient* returned to London via the Cape of Good Hope, stopping at Cape Town and St. Helena and taking about 95 days for the run home. The ship was sold in 1879, when twenty-six years old. The Orient Line and its associated interests built its last ship, which was constructed entirely of wood, the *Murray* of 903 tons, in 1861, and on her maiden passage she went out from Plymouth to Adelaide in 82 days. During the four-year period 1863-1866 inclusive, the Orient Line built the following half dozen little composite clippers:

| Name of Ship | Year Built | Tonnage | Builder | Name of Ship | Year Built | Tonnage | Builder |
|--------------|------------|---------|----------------|--------------|------------|---------|----------------|
| COONATTO | 1863 | 633 | Bilbe, London | DARRA | 1865 | 999 | Hall, Aberdeen |
| GOOLWA | 1864 | 717 | Hall, Aberdeen | YATALA | 1865 | 1,127 | Bilbe, London |
| BOREALIS | 1864 | 920 | Bilbe, London | ARGONAUT | 1866 | 1,073 | Bilbe, London |

These ships were hard driven and as notoriously wet as they were beautiful and yacht-like. The captain of the *Darra*, after taking her out to Adelaide in 70 days from the English

Channel, wrote that the ship "dived off the Cape and came up to blow off the Leeuwin." The fastest of the sextet was apparently the *Yatala*, which is credited with seven passages out from pilot off Plymouth averaging 77½ days; this ship was wrecked in March 1872 in the English Channel when homeward bound.

Another well-known British firm in the Adelaide trade was A. L. Elder & Company. In 1869, James Laing, of Sunderland, built the composite ship *Beltana* of 734 tons for the Elders, and under the command of Capt. Richard Angel this little vessel got the reputation of being a great sail carrier, handy and fast, but very tender. Other ships managed by Elder & Company were the *Glen Osmond*, *Collingrove*, and the famous *Torrens*, one of the most successful and fastest ships ever put in the South Australian trade. The *Torrens* (1,276 tons), a great favorite with Adelaide passengers and especially designed with a long (80-ft.) poop to accommodate them, was of composite construction, planked with teak, and was launched by Laing at Sunderland in October 1875. The *Torrens* was well modeled and big enough to be dry when running her easting down, but she gained a great reputation as a phenomenally fast sailer in light airs and was small enough to show great ghosting powers in the tropics. It was said of her: "The flap of her sails sent her along at a speed of 2 or 3 knots an hour, and in light airs she was accustomed to pass other clippers as if they were at anchor." The *Torrens* was heavily sparred and canvased, carried a main skysail yard, and for years was the only ship with stunsail booms aloft in the Australian trade. Under Capt. H. R. Angel, who had her from 1875 to 1890, she was an outstandingly lucky ship and during these fifteen years made twenty-one outward passages from Plymouth to Port Adelaide averaging, according to reports, 74½ days, pilot to pilot, with runs varying from 65 to 85 days.

Under other skippers, the *Torrens* was not so lucky. On her first passage under Capt. W. H. Cope, who relieved Capt. H. R. Angel in October 1890, the ship was dismasted north of the Atlantic equator, put into Pernambuco for repairs, and caught fire there; she was 179 days out when she finally reached Adelaide in late April 1891. On five other outbound passages that the *Torrens* made under Captain Cope, she averaged over 89 days. Under Capt. F. Angel, who replaced Captain Cope in the fall of 1896, the ship had an average length of outward passage on her seven voyages of 88½ days, but in the winter of 1898-1899 she was in collision with an iceberg and had a 103-day passage. In 1901-1902, Dame Fortune was unkind, and she was 101 days making the run out to Adelaide. Returning to England, the *Torrens* had a disastrous passage, and she was sold to the Italians. Bad luck continued to follow the once pre-eminently fortunate ship, and after going ashore twice and being seriously damaged, "the wonderful *Torrens*" was broken up in 1910, when thirty-five years old.

Devitt & Moore owned many fine ships in the British-Australian trade sailing between London and Melbourne, Sydney, or Adelaide. In the passenger and wool trade between England and South Australia, Devitt & Moore had some beautiful little composite ships that rivaled those of the Orient and Elder lines and were popular in Adelaide. Among these were the following ships built by Pile, of Sunderland: *City of Adelaide* of 791 tons, built in 1864 and a popular ship; the fast but very wet ship *St. Vincent* of 892 tons, built in 1865; and the *South Australian* of 1,040 tons, built in 1868 and a comfortable sea boat. Devitt & Moore had the distinction of owning or loading and managing some of the best sizable British-built ships that saw service in the Australian trade, among them being the frigate-built *La Hogue* (1,331 tons) and *Parramatta* (1,521 tons, built by Laing, of Sunderland, in 1866), which ran in the London-Sydney passenger trade, and "the great *Sobraon*," which was the largest composite ship ever built and believed by many authorities to be the best British-built sailing ship ever launched. The *Sobraon* was of 2,131 tons and was operated as a crack passenger ship. She made only one round voyage from Britain a year (1866-1871 to Sydney and 1872-1891 to Melbourne) and never raced home around Cape Horn for the wool sales. She always returned via the Cape of Good Hope and most generally touched at Cape Town and St. Helena on

the homeward passage. The ship was operated primarily with a view to the pleasure and comfort of the first-class and second cabin passengers, whom she carried in relatively large numbers. The *Sobraon* was built by Hall, of Aberdeen, in 1866 (launched in November) with a stern so that she could be quickly converted into an auxiliary steamer, but the space between the sternpost and rudderpost was filled in solid with teakwood. Her original owner, Lowther & Maxton, said that notwithstanding her great size, she was planned for the China trade and to operate later as a well-powered steam auxiliary tea clipper. From the first, however, she loaded as one of Devitt & Moore's Australian packets, and this firm, which had monthly sailings, purchased the *Sobraon* outright about 1870. British records credit the ship with passages of 75 days out and 78 days home on her maiden voyage between England and Sydney, N.S.W., and her fastest passages during her twenty-five years of service in the trade (1867-1891 inclusive) were reported as 68 days to Melbourne and 73 days to Sydney. After her maiden voyage, Capt. J. A. Elmslie, R.N.R., was in command of the ship as long as she was in the Australian run and until she was sold to the New South Wales government in early 1892. The combination of packet ship and master for a period of twenty-four years would seem to constitute a record. The *Sobraon* was a popular passenger ship to Australia and described as "fast and comfortable," carrying about ninety first-class and forty second-class passengers. It was later reported, "There was only one person lost overboard during her twenty-five years' active service, and that was a suicide." The master of the vessel boasted that "no other sailing ship ever passed the *Sobraon* in a breeze, either on a wind or before it," and further affirmed that she "was never driven hard out of consideration for the passengers." Capt. A. G. Elmslie (son of Capt. J. A. Elmslie), who was in the *Sobraon* for eleven years (1880-1891) from apprentice to chief officer, said that the ship had "a perfect run, and her bows were as fine as any yacht's." In regard to her sailing ability, he wrote:

Runs of over 300 knots [nautical miles] when running down the easting were frequent. On one occasion over 1,000 knots were covered in three days and over 2,000 in a week. 340 knots in the 24 hours was the best run made. I have seen over

16 knots reeled off the log. This was with the wind some 2 or 3 points on the quarter, which was her best sailing point. On a wind and sailing within 5½ points, she could do her 7 or 8 knots good.

The *Sobraon*—a splendid example of composite construction in the late sixties, with her "imperishable teakwood" coppered planking, iron framework, and copper bolt fastening—had a long life after it was no longer economically possible to use her as a passenger packet or, because of her model fineness and low freight-carrying capacity, in any trade on the Seven Seas. She was made into a boys' reformatory and for twenty years lay moored in Sydney Harbor. In 1911 the Australian Federal Government took the vessel over for conversion into a naval training ship, and it is said that when dry-docked for survey at the age of forty-five years, the hull was pronounced "as sound as a bell." In the 1930's, the old *Sobraon*, renamed *Tingira*, was retired from active service and anchored in Berry's Bay, N.S.W. It is said that she was "about seventy-five years old when finally broken up with the teakwood several inches thick, used in her construction, as sound as the day it was placed in position."

Devitt & Moore suffered a great loss when its ship *Queen of the Thames* was lost off the Cape of Good Hope on the return passage of her maiden voyage from London to Melbourne. This ship, at the time of her departure for Australia, was proclaimed in the press to be "the finest ship that ever left the Thames River." During the seventies, Devitt & Moore built and operated several iron Australian wool clippers, and the firm was among the last to operate sailing ships in the Australian or any other legitimate trade on a sound economic basis; its *Port Jackson* of 2,132 tons, built by Hall, of Aberdeen, in 1882, was torpedoed by the Germans in the North Atlantic on April 28, 1917, when thirty-five years old. The *Port Jackson*, one of the most sightly "four-masted British barques," or ship-entines, was the largest ship ever built in Aberdeen, Scotland.

In 1838, Jackson, Gordon & Company, of Liverpool, built a small sailing ship of iron, and she was appropriately named the *Ironsides*; she was not very successful and, while a pioneer in merchant sail, was evidently a sort of "ugly duckling" that was badly sparred and rigged as well as modeled and had "a very short, high and heavy stern with low bow." She proved ungainly to handle and no competitor of well-built wood ships of the period. The first real, big square-rigged iron ship constructed in England was the *Tayleur* of 2,500 tons, built at Liverpool in 1853. British marine historians have little, if anything, to say about her, although when launched she was proclaimed with pride by the builders, owners, and the press as "the largest merchant ship built in England." The *Tayleur* was a big three-decked ship copied as to size and type from the American-built Cape Horn clippers, and she had unusually large accommodations for cabin and steerage passengers, having been designed for the Australian "emigrant" trade. On her first voyage to Melbourne, this much-advertised "great iron British clipper ship" was wrecked on the coast of Ireland when only two days out from Liverpool and became a total loss; of her 652 passengers, only 282 were saved. It was said that the *Tayleur* was "unwieldy, unbalanced, and unmanageable," and, moreover, she was described by contemporaries as "too big and too heavy." Britain's first big iron sailing ship, built to compete with America's large wood clipper ships, was a failure, as was Britain's attempt two years later to build a big wood clipper (the *Schomberg*) "to beat the Yankees." Both ships were disappointing, unhandy sailers, and both were lost on their maiden passages to Australia.

During the same year that saw the big *Tayleur* launched, John Scott, of Greenock on the Clyde, built the iron ship *Martaban* of 743 tons for the shipping firm of A. & J. Carmichael. This ship was really designed by John Ferguson, who afterwards became a member of the firm of Barclay, Curle & Company, of Glasgow, probably the most famous builder of British-Australian wool iron clippers during the years 1868-1891 inclusive. It is interesting to note that when the British Lloyd's classed the *Martaban*, it rated her as "Nine Years Class A1," and she was considered equal in strength and longevity—but not superior—to a first-class wooden ship. At this time, however, whereas a British-built wood ship would be classed as "Nine Years Class A1" when new, most of the Canadian-built ships were contemptuously referred to by the British marine fraternity as "six-year Quebec timber ships." It was in the Australian trade that the British-built iron sailing ship was developed, and this trade, being passenger as well as freight, demanded fine-lined, roomy ships and necessitated the following of the American clipper type of model.

Among the early British iron clippers that achieved a measure of success was the *Lord of the Isles*, built by John Scott & Company, of Greenock, in 1853. This ship of 770 tons (length 191 ft., beam $27\frac{2}{3}$ ft., depth $18\frac{1}{2}$ ft.) was extremely sharp and narrow and a very wet ship. She was generally known as "the diving bell," and it was said, "Capt. Maxton drives her into one side of a sea and out at the other." When placed for a short time in the Australian trade, the *Lord of the Isles*, built as a China tea clipper, is credited with running out to Sydney in 70 days in 1853, but she did not equal the 68-day record of the Canadian-built wood ship *Marco Polo*. Other early British iron sailing ships were the *Gauntlet* of 693 tons, listed in Lloyd's Register as built in 1853 at Dumbarton; the *Pride of Canada* of 1,013 tons, built in 1855 at Port Glasgow; and the iron barks *Mohawk* of 809 tons, built in 1854 at Dumbarton, and *Trojan* of 433 tons, built also in 1854 at Port Glasgow. The iron sailing ship came into the Australian trade relatively early (i.e., 1853), as it was considered to be less inflammable; fire was one of the serious dangers in carrying wool cargoes. By 1860 the iron ship was firmly entrenched and established as a colonial carrier. The Aberdeen White Star Line was one of the pioneers in the Australian trade and has continued in operation for over a century. This line, however, built wood ships until 1870, when it constructed its last wood ship, the *Aviemore* of 1,091 tons; it contracted for its first composite ship, the *Thyatira* (962 tons), in 1867 and for its first iron ship, the *Patriarch*, in 1869. The *Thyatira* was sold in 1894 and wrecked in 1896, when twenty-nine

years old, and the *Patriarch* was sold to the Norwegians in 1898 and wrecked in February 1912, when forty-three years old. The wood ship *Aviemore* lived to a ripe old age, as she was in active sea service as a bark in 1915 (when forty-five years old), and her end is not known.

The iron medium clipper came into its own and reached the height of its perfection in the Australian trade. Evidently, Britain could never build real high-class wood ships, and "her future lay in iron—not wood"; for Britain could mine plenty of iron and produce the metal cheaply in plates and shapes suitable for use in the building of its ships. Even if it had naval architects to design and carpenters to construct wood ships properly, it had practically no forests and in the fifties had to import almost all the timber used in ship-building. British composite-built boats, using teak over iron framing with iron keelsons, stringers, longitudinals, etc., constructed in very moderate numbers for the better class of deep-sea shipping, survived in the trade for several years, but iron ships were cheaper to build than composite ships and, moreover, were easier to build. Iron-framed and teak-planked ships were supplanted by iron sailers, which, commencing to be constructed for the Australian trade in quantity toward the end of the sixties, were built in large numbers in the seventies and intermittently in the eighties and into the turn of the nineties. Basil Lubbock, in *THE COLONIAL CLIPPERS*, lists some sixty-nine iron clippers of quality that were built from 1866 to 1891 and placed in what was known as the "Australian Iron Clipper Wool Fleet." This entire wool fleet (which included some composite iron-framed and teak-planked ships), we are told, had thirteen vessels in the October 1873-June 1874 run and reached its maximum of thirty-eight ships in the October 1882-April 1883 "race." Even in 1889-1890, there were twenty-nine passages made by sailing ships of the medium clipper (and reputed clipper) type in the British-Australian wool trade, with sailings from Australian ports during the period from October 14, 1889, to February 8, 1890, and with reported London arrivals spread out between January 2 and May 8, 1890.

Whereas the first iron vessel built that became an Australian wool clipper was the *Darling Downs* of 1,634 tons, this vessel was constructed as the auxiliary steamer *Calcutta* for The General Screw Steamship Company and was later converted into a wool square-rigger. The real pioneer iron Australian wool clipper was the *City of Agra*, built in 1860 by Pile, of West Hartlepool on the English northeast coast, for Blyth & Company. The active construction of iron wool clippers for the Australian trade can be said to have commenced in 1866, when two ships—the *Marpesia* and *Antiope*, each of 1,443 tons—were built by Reid, of Glasgow, for Joseph Heap & Sons. As no such ships were constructed in 1867, the following year (1868), when four important iron wool clippers were built, is considered the first year of general construction of this type of ship, for it was followed by a relatively big construction program in 1869. The following table gives the dimensions of six important early Australian wool iron clippers built prior to 1868:

| Name of Ship | Year Built | Tonnage | Dimensions in Feet | | | Builder | Owner |
|---------------|------------|---------|--------------------|------|-------|--------------------------|---|
| | | | Length | Beam | Depth | | |
| DARLING DOWNS | 1852 | 1,634 | 258.6 | 40 | 29.9 | On the Thames | Taylor, Bethell & Roberts |
| CITY OF AGRA | 1860 | 1,074 | 213.6 | 34.7 | 20.6 | Pile, West Hartlepool | Blyth & Co. |
| SAM MENDEL | 1861 | 1,034 | 215.6 | 35 | 20.6 | Pile, West Hartlepool | Coupland Bros. |
| DHARWAR | 1864 | 1,300 | 226.2 | 37.2 | 23.3 | Harland & Wolff, Belfast | The Indian "Iron Ship Co." Bought by John Willis in 1868. |
| ANTIOPE | 1866 | 1,443 | 242.3 | 38.4 | 23.7 | Reid, Glasgow | J. Heap & Sons |
| MARPESIA | 1866 | 1,443 | 234.2 | 38.4 | 23.9 | Reid, Glasgow | J. Heap & Sons |

The *Darling Downs* was sunk by collision off the Nore in 1887. The *City of Agra* was wrecked on Cape Sable on March 31, 1907, during a passage from New York to Bridgewater. The *Sam Mendel*, renamed the *Charlonus* and still later the *Hannab*, was sold to shipbreakers in June 1909. The *Dharwar*, which was bought in 1868 by Capt. John Willis (the owner of the famous *Tweed* and *Cutty Sark*), was later sold to the Swedes and reached the shipbreakers in 1909, after forty-five years afloat. The *Antiope* had an eventful career. During the Russo-Japanese War, she sailed under both flags and was in active service as a British ship during the World War of 1914-1918; she was burned in Delagoa Bay in January 1921, condemned and abandoned to the underwriters, and, when fifty-five years old, was purchased, repaired, and converted into a store ship for the Senna Sugar Company, of Beira.

In 1868 and 1869, the before-mentioned historic pioneer iron Australian wool clippers were followed by at least eleven notable ships of this type ranging in size from the *Loch Awe* of 1,053 tons, built in Glasgow, to the *Hoghton Tower* of 1,598 tons, constructed by Clover, of Birkenhead on the Mersey. The big years for the building of Australian wool clippers of iron were during the period 1869-1885, and in the latter year five outstanding, large "iron wool medium clippers" were built in the British Isles: two by Hall, of Aberdeen; two by Barclay, Curle & Company, of Glasgow; and one by Harland & Wolff, Belfast, Ireland. The last Australian iron wool clippers were the sister ships *Mount Stewart* and *Cromdale* of 1,903 tons (length 271.6 ft., beam 40.1 ft., depth 23.4 ft.), built by Barclay, Curle & Company, Glasgow, for D. Rose & Company. The turn of the century saw the end of the legitimate Australian wool trade handled competitively on sound business principles by sailing ships.

The following is an analysis of the sixty-nine vessels tabulated by Lubbock in THE COLONIAL CLIPPERS as "iron wool clippers" built in Britain for the Australian trade during the period of twenty-six years, 1866-1891 inclusive:

| Period | Number of Years | Number of Ships | Average Number of Ships per Year | Registered Tonnage | | | Largest Ship Name and Tonnage | Smallest Ship Name and Tonnage |
|-----------------|-----------------|-----------------|----------------------------------|----------------------|------------------|------------------|---|--------------------------------|
| | | | | Total for the Period | Average per Year | Average per Ship | | |
| 1866-1869 | 4 | 13 | 3.25 | 17,118 | 4,279 | 1,317 | HOGHTON TOWER, 1,598 tons | LOCH AWE, 1,053 tons |
| 1870-1874 | 5 | 18 | 3.6 | 26,304 | 5,261 | 1,461 | THESSALUS, 1,782 tons | COLLINGWOOD, 1,011 tons |
| 1875-1879 | 5 | 25 | 5.0 | 33,262 | 6,652 | 1,330 | ARISTIDES, 1,661 tons | ANGLO-NORMAN, 822 tons |
| 1880-1885 | 6 | 11 | 1.83 | 20,664 | 3,444 | 1,878 | PORT JACKSON, 2,132 tons | ORONTES, 1,383 tons |
| 1886-1891 | 6 | 2 | 0.33 | 3,806 | 634 | 1,903 | MOUNT STEWART and CROMDALE, each 1,903 tons | |
| Total—1866-1891 | 26 | 69 | 2.65 | 101,154 | 3,891 | 1,466 | PORT JACKSON, 2,132 tons | ANGLO-NORMAN, 822 tons |

A summary of the record of the British "iron wool fleet" of fast sailing ships (which includes some composite-built vessels) in the Australia-Britain trade during the seventeen-year period of major activity (i.e., from the winter northbound passages of 1873-1874 to those of 1889-1890), compiled from Lubbock's British statistics of passages, is given herewith:

| Season of Wool Passages | Number of Ships | Date of Departure from Australian Port | | Length of Passages in Days | | | Average of Four Best | Average of Four Slowest |
|-------------------------|-----------------|--|---------------|----------------------------|--|---|----------------------|-------------------------|
| | | From | To | Average | Shortest* | Longest | | |
| 1873-1874 | 13 | Oct. 25, 1873 | June 14, 1874 | 91.7 | 82 (SAMUEL PLIMSOLL) | 108 (STAR OF PEACE; BEN VOIRLICH) | 83.3 | 103.0 |
| 1874-1875 | 24 | Oct. 23, 1874 | May 6, 1875 | 94.0 | 77 (BEN NEVIS, MILTIADES, and OBERON) | 122 (JOHN O'GAUNT) | 78.0 | 114.3 |
| 1875-1876 | 32** | Oct. 16, 1875 | Mar. 9, 1876 | 95.4 | 69 (THE TWEED) | 125 (QUEEN OF NATIONS) | 81.0 | 114.0 |
| 1876-1877 | 23 | Oct. 6, 1876 | Feb. 17, 1877 | 93.7 | 81 (ARISTIDES) | 110 (DARLING DOWNS) | 81.3 | 105.8 |
| 1877-1878 | 22 | Oct. 24, 1877 | Jan. 17, 1878 | 95.5 | 80 (MERMERUS) | 108 (ROMANOFF) | 86.5 | 106.0 |
| 1878-1879 | 31 | Sept. 23, 1878 | Mar. 11, 1879 | 92.9 | 80 (PARRAMATTA) | 114 (LOCH KATRINE) | 81.3 | 110.0 |
| 1879-1880 | 23 | Nov. 3, 1879 | Jan. 22, 1880 | 101.4 | 81 (THERMOPYLAE) | 122 (CYNISCA) | 86.8 | 117.0 |
| 1880-1881 | 29 | Sept. 3, 1880 | Apr. 7, 1881 | 96.6 | 79 (WINDSOR CASTLE) | 129 (DARLING DOWNS) | 82.0 | 117.5 |
| 1881-1882 | 20 | Oct. 15, 1881 | Feb. 6, 1882 | 100.7 | 84 (LOCH VENNACHAR) | 124 (BEN VOIRLICH) | 89.5 | 117.3 |
| 1882-1883 | 38 | Oct. 13, 1882 | Apr. 28, 1883 | 99.3 | 75 (THERMOPYLAE) | 123 (PARRAMATTA) | 80.5 | 118.0 |
| 1883-1884 | 31 | Oct. 12, 1883 | Feb. 6, 1884 | 96.5 | 82 (CUTTY SARK) | 114 (LOCH VENNACHAR; CIMBA) | 84.5 | 113.5 |
| 1884-1885 | 27 | Oct. 5, 1884 | Mar. 21, 1885 | 97.2 | 79 (THERMOPYLAE) | 116 (ORONTES) | 81.5 | 113.0 |
| 1885-1886 | 27 | Oct. 5, 1885 | Mar. 22, 1886 | 97.3 | 72 (CUTTY SARK) | 120 (LOCH RYAN) | 77.3 | 117.8 |
| 1886-1887 | 25 | Oct. 21, 1886 | Mar. 26, 1887 | 97.1 | 72 (CUTTY SARK) | 121 (RODNEY) | 78.8 | 117.0 |
| 1887-1888 | 29 | Sept. 14, 1887 | Feb. 4, 1888 | 95.2 | 71 (CUTTY SARK) | 130 (ROMANOFF) | 78.3 | 118.0 |
| 1888-1889 | 27 | Oct. 10, 1888 | Mar. 26, 1889 | 96.7 | 82 (NEBO) | 114 (SOPHOCLES) | 83.8 | 112.8 |
| 1889-1890 | 29 | Oct. 14, 1889 | Feb. 8, 1890 | 95.3 | 74 (CUTTY SARK) | 128 (LOCH RYAN) | 76.5 | 113.5 |

*Whereas an overwhelming percentage of the stated length of passages is from Melbourne or Sydney to London, some of the runs made by ships of reputed speed were figured by their commanders to end at the Lizard, Wight, Plymouth, Start Point, Falmouth, Deal, the Downs, the ambiguous "Channel," Dungen's, or Motherbank; therefore, all the passages, and particularly the reported fastest ones, are not truly comparative with the records of American clippers in the fifties.

**LOCH GARRY (a new ship of 1,493 tons built by Thomson, Glasgow, in 1875), sailing from Melbourne February 22, 1876, not included, as date of arrival in England not known.

Some of the British clippers appearing in this list of sailings of what are generally termed "iron wool clippers" were veritable racing machines built for the China tea trade. The Suez Canal and trade conditions drove some of the Britain-China tea clippers into the British-Australian colonial service, for which they were not suitable from the standpoint of either size or fullness of model. Outstanding "speed merchants" that were true, or extreme, clippers showed up well, however, as regards speed in the England-Australia trade notwithstanding their relatively small size, limited cargo capacity, and lading restrictions because the route passed through the tropics, and the performance of such composite-built vessels in that service compares very favorably with that of the larger and somewhat fuller British iron (and steel) wool clippers. Several of the Britain-China tea clippers, such as the famous *Cutty Sark* and *Thermopylae*, were of composite construction with India teak planking and decking over iron frames and beams and strengthened by iron keelsons, stringers, and longitudinals. All of the early iron clippers appearing in the British-Australian trade were modeled like the British China tea clippers and were very sharp-ended ships, with small cargo-carrying capacity. Moreover, all British sailing ships were of small beam compared with those built in the U.S.A. and as a result were lacking in stability and stiffness. Most of them would not stand up straight when light without ballast and, when loaded with a homogeneous cargo, were too cranky to be sailed; the result was that, in the China trade, they had to carry nonrevenue-producing ballast home with a cargo of tea and, in the Australian trade, wool being a very light cargo per cubic foot, had to have some heavy freight such as casks of tallow, hides, and at times copper ore placed in the lower holds.

The slowest, largest, and fullest of the quartet of big U.S.A.-built wood clippers constructed for the Baines Black Ball Line and the Australian trade, the *Donald McKay*, averaged 83 days on her outward passages from England to Australia (port to port) and 85 days on the run home. The *Lightning* averaged 79 days on the homeward passage, and the *James Baines*, 76 days, excluding her one unfortunate voyage when "she had no wind and merely drifted home"; but even this long passage of 105 days in the fall of 1856, so surprisingly long for an American clipper that anxiety was felt for her safety and she was posted as "overdue," was shorter than passages made each year by some of the British wool clippers, few of which ever experienced the excessive handicaps to sailing encountered by the "*Baines*." During the period 1873-1890, of 450 sailings of British clippers (both iron and composite) recorded by Lubbock in the wool trade from Australia to an English port (with the passage often considered ended when the ship made some point in the English Channel which was generally from two to as long as ten days, on rare occasions, from her port of destination), 106 of the passages, or 23½ per cent of them, were longer than the 105-day passage of the *James Baines*, which so amazed the marine fraternity that, we are told, "something like consternation began to reign in shipping circles." No other passage of a U.S.A.-built British-Australian clipper packet operating in an established regular line approached 105 days in length; yet in the three wool races of 1879-1880, 1882-1883, and 1885-1886, out of 88 British clipper ship contestants, 33 reported passages of 105 days and over (and many of the passages reported as 104 or 103 days, or even less, were probably over 105 days, port to port), which is an average of 11 ships per year out of 29 sailings, or 37½ per cent (three out of eight) of the clippers requiring 105 days or more to make the run home.

The British-built Australian wool clippers participated in real races home, and they were known as "the carriers of the Golden Fleece." Whereas the discovery of gold was the foundation of Australia's fortune, sheepraising (the "Golden Fleece") and the growing of grain (the "Wheat Sheaf") made for its permanent prosperity. Annual wool sales took place in London at intervals during the first three months of each year, and the lists of the first sales were closed as soon as a sufficient number of cargoes had arrived from Australia or been reported in the Channel. Thus, we are told, it was the aim of every skipper not only to get his ship to London but also to have her reported as soon as possible after reaching

the Channel, as the cargoes of ships reported in the Channel by noon on the opening day of the sales were included in the sales lists; whereas, if a captain missed the sales, his cargo would have to be warehoused for many weeks and perhaps two or three months until the next sales, thus involving additional expenses such as warehouse charges, loss of interest, etc., not to speak of the possibility of a fall in the price of the wool. We also read of fishing smacks being employed and even pilot cutters being used in the English Channel to carry news of a wool clipper's "arrival" ashore for prompt transmission to London, and sea captains were often promised substantial bonus checks by owners and shippers "if they caught the sales." Under these conditions, all available records of the British-Australian wool clipper's "arrival" and the length of the ship's passage home are apt to give figures very materially less than the actual length of passages, port to port.

In the wool trade, unlike the custom in the tea trade, the fastest ships were generally loaded last, and the last ship to leave an Australian port for the London wool sales was honored by being given "the pride of the place"—a position reserved for the vessel that was considered the fastest in the trade. In the eighties, this "pride of the place" in Sydney was always kept for the *Cutty Sark* (the Dumbarton-built, composite, 963-ton clipper); "no other ship," we are told, "either wood, composite, or iron, was able to rival her passages both out and home in the wool trade" during her prime (i.e., the seventies and eighties). It is evident that in the Australian-British wool trade "speed was king," as it had been in the days of the China tea clippers and in the California boom, but shipowners in the sixties, seventies, and eighties had grown wiser and capitalized the experience of the fifties. After the early Australian Gold Rush, although the demand for speed with sailing ships in this British colonial trade was great, it was mellowed with a practical reasonableness; more and more, as the competition with steam developed, it was required that sailing ships in the trade "make time, but also make money."

At no time were U.S.A.-built and operated ships welcomed and permitted to compete on even terms in the British colonial trade with the antipodes. During the fifties, there was such a dearth of quality tonnage of British construction that British shipowners were compelled, if they wanted "to stay in the game," to purchase or charter sizable and suitable ships built outside of Britain (or the British Isles). Baltic-built wood ships were inferior both in material and workmanship, as well as in design, and although timber grew in abundance in that territory, the region never developed to the point of becoming much of a factor in the building of durable wood ships for trade on the Seven Seas. England was naturally, because of history, precedents, and customs hoary with age, a strongly protectionist nation in maritime matters; it always has been, as far as underlying sentiments, motives, and principles are concerned, and probably always will be, no matter what its protestations and apparently broad-gauged acts of policy in an emergency may be. The Britain-China tea trade was thrown open to ships of other nations (meaning U.S.A.-built ships) in 1850, but this was a move cleverly calculated in an emergency to stimulate British shipbuilding to produce quality tonnage to compete with American ships in long-distance foreign trade and give British shipowners and shipbuilders plenty of chances—for a few brief years—of examining U.S.A.-built fast clippers of the highest class the world had ever seen and for the British Government to copy (for the benefit of British shipbuilders and shipowners) the design, model, and spar plan of the finest American-built ships, the lines of these vessels being "taken off" by competent British Admiralty technical men when the clippers were placed in dry dock. For a very few years, U.S.A.-built ships were permitted to enjoy the major part of the Britain-China tea trade; for a few years more they were allowed to compete with the gradually expanding fleet of small British-built tea clippers with models and sail plans copied from America's outstanding, fast sailers, commanded by captains and managed by shipowners who had been taught the American way to operate ships to make fast passages. Gradually, however, as Britain grew confident and self-sufficient, handicaps were placed in the way of U.S.A.-built and owned ships competing with British vessels

in this trade, and restrictions grew by leaps and bounds, expressing national prejudices which, while fundamentally patriotic and inspired by the slogan "British trade in British bottoms," were also permeated with an amazing national conceit, self-satisfaction, and self-sufficiency in all marine matters. Was not Britain the "Mistress of the Seas" and were not British ships and British sailors the world's finest and destined by divine decree to lead in commerce and dominate the trade routes of the world by both merchant and naval fleets?

Another factor that tended to close the Britain-China tea trade to U.S.A.-built ships was the fact that Britain knew that the smaller and lighter clipper was better suited for oriental waters and the Atlantic doldrum passages in this trade than the larger and more powerful American clipper. As Britain could at any time control and, if deemed desirable, eliminate all foreign competition handling imports to the British Isles, its shipowners decided to build and operate especially designed small tea clippers that could ghost along in the tropics for the China trade. American shipowners, on the other hand, well knew that they could be barred from participating in British trade at any time either by (1) legislation or formal decrees or (2) national policy and patriotic prejudice, which was well known to be as potent as governmental regulations and acts of Parliament. The U.S.A. shipowners, therefore, declined to take a chance to build small and ideally suited clippers for the China trade, but standardized on the construction and operation of clippers that were suitable for Cape Horn voyages, and for a few years, American Cape Horners, after a westbound passage to California, crossed the Pacific from San Francisco to a China port and completed their voyage laden with tea, silks, chinaware, etc., to a North Atlantic port (London, Liverpool, New York, or Boston). The shipbuilders and shipowners of the United States well knew that a big and powerful clipper, designed and built for the turbulent Cape Horn trade, was not an ideal ship for the China trade around the Cape of Good Hope, but they had no legitimate incentive—as had the British—to build exclusively for the tea trade; moreover, the American clippers were so superior to the sailing ships of all other nations—including the egoistic and pampered British—that they were inclined to the opinion that a powerful U.S.A.-built clipper, when making a passage in the British tea trade, would give a good account of herself and either hold or defeat the more suitable type of clipper that the British were building to operate exclusively in this trade.

In the Australian trade, conditions were different, and if the entire voyage both out and home could be made running toward the east along the trade route suggested by Maury, then the U.S.A.-built California type of clipper, designed to carry passengers and freight around Cape Horn to the westward, would prove very suitable in the Australian trade, as the course would cover great mileage in the southern latitudes of the Roaring Forties and fifties, would go far to the south of the Cape of Good Hope, and, fringing the antarctic zone, would round Cape Horn on the homeward leg. Unfortunately, while the big U.S.A.-built clippers were engaged in the Australian trade, that continent could not furnish any sizable export cargoes for the ships that brought emigrants and goods to the antipodes. For a while, valuable gold dust and very small quantities of wool carried home to Britain permitted the big clippers operating under the British flag to show good profits on a round voyage, but the revenue (in relation to expenses per day) was made from the carrying of passengers and freight on the outward passage. Many British ships other than the packets of the established lines, such as the Black Ball and White Star, returned to London by way of China, and the smaller British ships in the Australian trade traveled both out and home around the Cape of Good Hope and did not follow the Maury course homebound or, at times, over any part of the journey. American clippers operated by Americans in the Australian trade could seldom pick up any cargo in an Australian port during the fifties, and they also stood a poor chance of obtaining freights at a China or East Indian port (including Manila), as so many American ships in the California run were available and hunting, through their agents, for cargoes at such ports to be taken

to any North Atlantic port—European or East Coast U.S.A. port. Under these conditions, as there was no export cargo available at any West Coast port of northern and central America, the finest of American-owned clippers put in the Australian trade degenerated, because of economic necessity, to carrying foul, dirty guano, with its stench, from Peru to some North Atlantic port. At the time, no other West Coast South American export product was obtainable in quantity. A fine ship put in the guano trade was but little above the status of a coolie ship, and the loading, carrying, and handling of Chinese coolies—especially from oriental ports to the Peruvian guano islands—were not materially different from the operations of an African Negro slaver. Later, as Australia became a great producing country in wool and tallow, wheat and other grains and had coal to export from Newcastle, N.S.W., to U.S.A. Pacific Coast ports and the Orient, conditions were much improved as regards outbound cargoes to Britain and elsewhere; but until California and the Pacific U.S.A. Northwest had farm and ranch products to export, the filthy and foully odoriferous guano of Peru had to be transported by many of the finest of American-owned clippers on their homeward runs—if they were to be kept in service and operated without financial loss. During the height of the clipper ship boom, many of the American ships engaged in the California trade, being unable to get any assurance of a cargo at any oriental port to carry to a North Atlantic port, were required to make the homeward passage of their voyages, sailing eastward around Cape Horn, in ballast.

*British Clippers and Their Participation in the Australian
Trade in the Seventies and Eighties*

The following tables have been prepared from available data of reported outbound sailings and arrivals of ships engaged in the British-Australian trade from the mid-seventies to the end of 1885. The passages stated as of 80 days or under are not as "from port to port," but from such point of departure in the English Channel as the captain reported, which was generally the last "bit of England" that he saw before heading for the open ocean on his run to the Atlantic bound south. The statement made that "usually the length of passage given by the command of British sailing ships is from pilot to pilot" cannot be accepted without qualification, for the point of departure of vessels sailing from London was apt to be anywhere from the Downs to "off the Lizard," and the length of the run is usually stated as from "the Channel" to some point of land near the Australian port of destination or to the time of taking on an Australian pilot. The Channel points of departure usually stated were the Lizard, Scilly, Start, Tuskar, or the ambiguous "Channel." In December 1877, both the *Cutty Sark* and *Thermopylae* made two actual starts on their passages, but could not sail down the English Channel against the westerly winds and were "forced by bad weather to put back to the Downs." The time given for their passages out is not figured from London, the real port of departure, or from the Downs on either the first or second attempt to get away, but from the Lizard off the extreme southwest coast of England. It would seem that the *Cutty Sark* left the Downs, on her second attempt to commence the sea voyage from a Channel point, on December 2, but her passage is reported as beginning at the Lizard on December 6, or four days later. The *Loch Garry*, in the 1877 outward run to Melbourne, reported her length of passage as 77 days, figured from a departure off Queenstown, Ireland.

*Passages under 80 Days from Some English Channel
Point of Departure to Sydney*

| Year | Period of Departure | No. of Passages under 80 Days | Best Passages in Days | | |
|-----------|--------------------------------|-------------------------------|--------------------------|--------------------------|------------------|
| | | | (1) | (2) | (3) |
| 1874-1875 | Nov. 21, 1874- June 8, 1875 | 5 | CUTTY SARK 73 | MERMERUS 74 | HALLOWE'EN 74 |
| 1875-1876 | Aug. 8-Nov. 29, 1875 | 2 | CUTTY SARK 75 | SAMUEL PLIMSOLL 75 | — |
| 1876-1877 | June 2-Oct. 23, 1876 | 3 | PATRIARCH 71 | SAMUEL PLIMSOLL 78 | CUTTY SARK 79 |
| 1877-1878 | June 9-Dec. 6, 1877 | 5 | CUTTY SARK 72 | PATRIARCH 74 | PERICLES 74 |
| 1878-1879 | Jan. 17-June 15, 1878 | 2 | LOCH ETIVE 76 | THOMAS STEPHENS 77 | — |
| 1879-1880 | Aug. 30, 1879 (both) | 2 | PERICLES 76 | BRILLIANT 77 | — |
| 1880-1881 | Apr. 29-June 11, 1880 | 3 | CIMBA 72 | SAMUEL PLIMSOLL 72 | THE TWEED 75 |
| 1881-1882 | Mar. 23-July 3, 1881 | 3 | CIMBA 75 | SAMUEL PLIMSOLL 79 | LOCH ETIVE 79 |
| 1882-1883 | Oct. 28-Nov. 9, 1882 | 2 | THOMAS STEPHENS 74 | PORT JACKSON 77 | — |
| 1883-1884 | Feb. 24-Sept. 27, 1883 | 6 | SAMUEL PLIMSOLL 72 | PATRIARCH 73 | SALAMIS 74 |
| 1884-1885 | Mar. 26-May 30, 1884 | 3 | THESSALUS 77 | WINDSOR CASTLE 78 | CIMBA 79 |
| 1885 | Mar. 6-June 21, 1885 | 8 | PATRIARCH 75 | CUTTY SARK 77 | SIREN 77 |

*Passages under 80 Days from Some English Channel
Point of Departure to Melbourne*

| Year | Period of Departure | No. of Passages under 80 Days | Best Passages in Days | | |
|-----------|---------------------------------|-------------------------------|-----------------------|--------------------|------------------------|
| | | | (1) | (2) | (3) |
| 1874-1875 | Aug. 16, 1874- Jan. 27, 1875 | 11 | THERMOPYLAE 64 | BEN VOIRLICH 64 | LOCH NESS 68 |
| 1875-1876 | Feb. 3-Dec. 3, 1875 | 16 | THERMOPYLAE 68 | SALAMIS 68 | MERMERUS 68 |
| 1876-1877 | Mar. 25-Oct. 21, 1876 | 15 | MERMERUS 66 | MILTIADES 70 | ARISTIDES 70 |
| 1877-1878 | Mar. 4-Dec. 20, 1877 | 16 | LOCH MAREE 67 | BEN CRUACHAN 67 | THERMOPY- LAE 74 |
| 1878-1879 | Mar. 7-July 10, 1878 | 7 | THESSALUS 68 | PARTHENOPE 71 | ARISTIDES 74 |
| 1879-1880 | Feb. 21-Oct. 3, 1879 | 4 | SOBRAON 74 | TITANIA 75 | MERMERUS 77 |

(Continued on next page)

MERCHANT SAIL

Passages under 80 Days from Some English Channel
Point of Departure to Melbourne—Continued

| Year | Period of Departure | No. of Passages under 80 Days | Best Passages in Days | | |
|-----------|------------------------|-------------------------------|-----------------------|--------------------------|-----------------|
| | | | (1) | (2) | (3) |
| 1880-1881 | Apr. 18-Dec. 4, 1880 | 13 | BEN VOIRLICH 67 | SIR WALTER RALEIGH 67 | ROMANOFF 68 |
| 1881-1882 | Mar. 31-Sept. 27, 1881 | 12 | CITY OF AGRA 69 | THEOPHANE 69 | SOBRAON 70 |
| 1882-1883 | Mar. 7-Oct. 15, 1882 | 8 | RODNEY 69 | BEN VOIRLICH 70 | SALAMIS 71 |
| 1883-1884 | Mar. 8-May 28, 1883 | 4 | LOCH TORRIDON 74 | MILTIADES 78 | MERMERUS 79 |
| 1884-1885 | June 1-Nov. 27, 1884 | 4 | MILTIADES 71 | SOBRAON 75 | LOCH LONG 75 |
| 1885 | Jan. 20-June 4, 1885 | 3 | SALAMIS 75 | THERMOPYLAE 78 | HARBINGER 78 |

The British clippers continued in the Australian wool trade until well into the nineties, fighting courageously against the ever-growing and increasingly severe competition of steam. (The last Australian wool clippers, the *Mount Stewart* and *Cromdale*, were launched in May and June of 1891, respectively, from the yard of Barclay, Curle & Company, Glasgow, for D. Rose & Company.) The following has been compiled from British records of the passages in days outbound from some English Channel point of departure to pilot off an Australian port of the seven fastest and most regular ships in this trade during the years 1886-1894 inclusive:

| Name of Ship | Ton- nage | Year Built | Builder | Austral- ian Port | | | | | | | | | | | Aver. Length of Pas- sages Days |
|--------------------|--------------|---------------|-------------------------------------|----------------------|------|----------------------|------|------|------|------|----------------------|------|---------------------|-----|---|
| | | | | | 1886 | 1887 | 1888 | 1889 | 1890 | 1891 | 1892 | 1893 | 1894 | | |
| CUTTY SARK | 921 | 1869 | Scott & Linton, Clyde | Sydney | — | 88 New- castle | 76 | 77 | 75 | 79 | 88 New- castle | 81 | 79 Bris- bane | 80½ | |
| SALAMIS | 1,079 | 1875 | Hood, Aberdeen | Melbourne | 78 | 86 | 70 | 84 | 86 | 79 | 77 | 87 | 80 | 80¾ | |
| SAMUEL PLIMSOLL | 1,444 | 1873 | Hood, Aberdeen | Melbourne | — | 93 Sydney | 76 | 81 | 84 | 78 | 87 | 79 | 79 | 82 | |
| PATRI- ARCH | 1,339 | 1869 | Hood, Aberdeen | Sydney | 97 | 79 | 79 | 77 | 87 | 82 | 80 | 99 | 77 | 84 | |
| MILTIADES | 1,452 | 1871 | Hood, Aberdeen | Melbourne | 83 | 78 | 83 | 82 | 90 | 91 | 86 | 92 | — | 85½ | |
| MERMERUS | 1,671 | 1872 | Barclay, Curle & Co., Glasgow | Melbourne | 84 | 96 | 82 | 88 | 89 | 85 | 86 | 85 | — | 87 | |
| CIMBA | 1,174 | 1878 | Hood, Aberdeen | Sydney | 97 | 84 | 88 | 85 | 89 | 93 | 83 | 93 | 88 | 89 | |

The following table shows the number and size of the early "top-flight" British clippers, all of which for a decade were designed and built for the China tea trade. During the second decade of British clipper ship construction, wood, composite, and iron clippers continued to be built for the China trade, and fast iron ships known as "wool clippers" were launched for the Australian trade. The number and size of these "top-flight" and good-looking, sharp-lined, loftily sparred ships—China tea and Australian wool clippers

—are set forth comparatively for each year up to 1870, when tea clipper construction ceased; but clippers for the colonial Australian trade continued to be built steadily for another fifteen years, and after a lapse of five years, the last of the iron wool clippers were launched in 1891.

| Year | CHINA TEA CLIPPERS | | | | | AUSTRALIAN IRON WOOL CLIPPERS | | | | |
|------|--------------------|--------------------------------|--------------|--------------|--------------|-------------------------------|--------------------------------|--------------|--------------|--------------|
| | No. of Ships Built | Average Tonnage and Dimensions | | | | No. of Ships Built | Average Tonnage and Dimensions | | | |
| | | Tonnage | Length | Beam | Depth | | Tonnage | Length | Beam | Depth |
| | | | <i> Ft. </i> | <i> Ft. </i> | <i> Ft. </i> | | | <i> Ft. </i> | <i> Ft. </i> | <i> Ft. </i> |
| 1850 | 1 | 506 | 158 | 29 | 18 | — | — | — | — | — |
| 1851 | 1 | 471 | 149 | 26 | 17 | — | — | — | — | — |
| 1852 | 1 | 699 | 174 | 32 | 20 | — | — | — | — | — |
| 1853 | 4 | 882 | 185 | 32 | 20 | — | — | — | — | — |
| 1854 | 1 | 878 | 173 | 32 | 18½ | — | — | — | — | — |
| 1855 | 2 | 682 | 152 | 28½ | 19 | — | — | — | — | — |
| 1856 | 2 | 902 | 192 | 34½ | 21½ | — | — | — | — | — |
| 1857 | 1 | 662 | 193 | 31 | 17 | — | — | — | — | — |
| 1858 | 2 | 542 | 162 | 29 | 18 | — | — | — | — | — |
| 1859 | 1 | 794 | 191 | 32 | 20 | — | — | — | — | — |
| 1860 | 3 | 759 | 179 | 33 | 20 | 1 | 1,074 | 214 | 35 | 20½ |
| 1861 | 5 | 787 | 178 | 32½ | 20 | 1 | 1,034 | 216 | 35 | 20½ |
| 1862 | 7 | 722 | 178 | 31 | 20 | — | — | — | — | — |
| 1863 | 13 | 790 | 183½ | 31½ | 19½ | — | — | — | — | — |
| 1864 | 6 | 691 | 175 | 30½ | 19 | 1 | 1,300 | 226 | 37 | 23½ |
| 1865 | 9 | 756 | 184 | 32 | 19½ | — | — | — | — | — |
| 1866 | 4 | 792 | 187 | 32½ | 19½ | 2 | 1,443 | 238 | 38½ | 24 |
| 1867 | 6 | 853 | 197 | 34 | 20 | — | — | — | — | — |
| 1868 | 5 | 861 | 198 | 33½ | 20 | 4 | 1,289 | 230 | 38½ | 22½ |
| 1869 | 8 | 793 | 194 | 33 | 19½ | 7 | 1,297 | 232 | 37 | 22 |
| 1870 | 3 | 877 | 208 | 35 | 20 | 2 | 1,200 | 226 | 36 | 21½ |

The average tonnage of the above 85 British-built tea clippers was 774½ tons and of the 18 iron wool clippers constructed for the Australian trade, 1,274 tons; i.e., about 500 tons, or 64½ per cent, more. Only two of the tea clippers considered in this comparative analysis exceeded 1,000 tons register, and ten were of less than 600 tons. Britain's famous pair of pioneer clippers, built by Hall, of Aberdeen, Scotland, to compete with the American clippers, was very small. The first one, the *Stornoway*, built in 1850, was of 506 tons (length 157.7 ft., beam 28.7 ft., depth 17.7 ft.), and the second one, the *Chrysolite*, launched the following year (1851), was even smaller, being of only 471 tons register (length 149.3 ft., beam 26 ft., depth 17 ft.). From the first, the British maintained that small ships were better adapted for tropical trade than larger and heavier vessels and that the China tea trade, with both outward and homeward passages around the Cape of Good Hope, could be handled with more satisfaction by ships of 500 tons than by "big clippers of from 1,000 to 1,500 tons or more such as the Americans are building." However, when Richard ("Dicky") Green, of the historic Blackwall Line, London, built his first (and Britain's third) clipper, the *Challenger*, in 1852, she was of larger size than the two Aberdeen-built pioneers, being of 699 tons register and measuring 174 ft. long, 32 ft. beam, and 20 ft. deep. The following year (1853), Hall, of Aberdeen, built his third clipper, the *Cairngorm* (for the owners of the *Stornoway*, Britain's pioneer clipper), and this was a sizable craft of 938 tons register, being 185 ft. long, 36½ ft. beam, and 20 ft. deep. The size of the British-built China tea clippers, however, did not steadily increase with the years, but when building for the trade commenced in earnest, ships of about 700 to 800 tons were considered a good average size and ships of 900 to 950 tons register as big as should be built for the service. The following is a record of the largest "top-flight" clipper ships built in Britain for the China tea trade:

| Name of Ship | Year Built | Tonnage | Length Ft. | Beam Ft. | Depth Ft. | Builder |
|---------------------|------------|---------|------------|----------|-----------|---------------------------|
| WILD DEER | 1863 | 1,126 | 211 | 33.2 | 20.6 | Connell, Glasgow |
| HIGHFLYER | 1861 | 1,012 | 193.6 | 35.4 | 20 | Green, London |
| SIR WILLIAM WALLACE | 1866 | 967 | 195.5 | 34.4 | 21.1 | Duthie, Aberdeen |
| LAMMERMUIR | 1856 | 952 | 178 | 34 | 22 | Pile, Sunderland |
| THERMOPYLAE | 1868 | 948 | 212 | 36 | 20.7 | Hood, Aberdeen |
| FORWARD HO | 1867 | 943 | 193.6 | 33.5 | 20.5 | Stephen, Glasgow |
| CAIRNGORM | 1853 | 938 | 185 | 36.5 | 20 | Hall, Aberdeen |
| CREST OF THE WAVE | 1853 | 924 | 184.3 | 32.3 | 20.1 | Pile, Sunderland |
| CUTTY SARK | 1869 | 921 | 212.4 | 36 | 21 | Scott & Linton, Dumbarton |

From the early days of trading between Britain (or North Atlantic ports) and Australia, it was evident that larger ships were required for the voyage in the Roaring Forties than in the Indian, East Indian, and oriental run. The record of construction of British-Australian iron wool clippers, which capitalized the experience gained with large American wood clippers during the Gold Rush and the early days of the emigrant-carrying trade, shows an appreciation of the need of size in this trade and a definite demand for ships of around 2,000 tons register to cope with competitive conditions in the eighties. In the sixties, iron wool clippers of from 1,034 tons to 1,525 tons were built; in the seventies, the ships ranged from the small *Collingwood* of 1,011 tons, built by Hood, of Aberdeen, in 1872, to the *Thessalus* of 1,782 tons, built by Barclay, Curle & Company, of Glasgow, in 1874; in the eighties, construction ranged from the *Orontes* of 1,383 tons, built by Hood, of Aberdeen, in 1881, to the *Strathdon* of 2,093 tons and the *Loch Carron* and *Loch Broom*, each of 2,075 tons—all launched in 1885, the former at Belfast, Ireland, and the latter sisters by Barclay, Curle & Company on the Clyde.

The following is a record of the comparative number and size of "top-flight" Australian wool clippers built in Britain during the various years of the period from and including 1871 up to 1891, which saw the last vessel of this type launched for the Australian trade:

| Year | No. of Ships Built | Average Tonnage and Dimensions | | | | Largest Ships Built during Year | | | |
|------|--------------------|--------------------------------|------------|----------|-----------|---------------------------------|---------|---------------------------|----------------|
| | | Tonnage | Length Ft. | Beam Ft. | Depth Ft. | (1) | | (2) | |
| | | | | | | Name | Tonnage | Name | Tonnage |
| 1871 | 1 | 1,452 | 241 | 39 | 23 | MILTIADES | 1,452 | — | — |
| 1872 | 2 | 1,341 | 238 | 37 | 22 | MERMERUS | 1,671 | COLLINGWOOD | 1,011 |
| 1873 | 7 | 1,504 | 254 | 38 | 23 | HESPERUS | 1,777 | LOCH ARD | 1,624 |
| 1874 | 6 | 1,541 | 248 | 37 | 23 | THESSALUS | 1,782 | OLD KENSINGTON | 1,777 |
| 1875 | 7 | 1,364 | 239 | 38 | 22 | PARTHENOPE | 1,563 | CASSIOPE | 1,559 |
| 1876 | 8 | 1,336 | 237 | 37 | 22 | ARISTIDES | 1,661 | HARBINGER | 1,506 |
| 1877 | 7 | 1,354 | 238 | 37 | 22 | BRILLIANT | 1,613 | PERICLES | 1,598 |
| 1878 | 2 | 1,203 | 223 | 35 | 22 | LOCH SUNART | 1,231 | CIMBA | 1,174 |
| 1879 | 1 | 1,138 | 223 | 35 | 22 | SOPHOCLES | 1,138 | — | — |
| 1881 | 4 | 1,818 | 270 | 40 | 27 | LOCH TORRIDON | 2,000 | LOCH MOIDART | 2,000 |
| 1882 | 1 | 2,132 | 286 | 41 | 25 | PORT JACKSON | 2,132 | — | — |
| 1884 | 1 | 1,890 | 275 | 40 | 24 | DERWENT | 1,890 | — | — |
| 1885 | 5 | 1,874 | 270 | 40 | 23 | STRATHDON | 2,093 | LOCH CARRON LOCH BROOM | 2,075 2,075 |
| 1891 | 2 | 1,903 | 272 | 40 | 23 | MOUNT STEWART | 1,903 | CROMDALE | 1,903 |

Of the above-mentioned fifty-four outstanding British-built Australian iron wool clippers, thirty-one were built on the Clyde and sixteen in Aberdeen (i.e., forty-seven, or 89 per cent of the total, in Scotland); six were built in England (four on the northeast coast and

two at Liverpool), and one was constructed in Ireland by Harland & Wolff, of Belfast. Of the thirty-one ships built on the Clyde, twenty-seven were constructed at Glasgow, two at Greenock, and two at Dumbarton. The most important of the Clyde shipbuilders were Barclay, Curle & Company, Glasgow, which launched twelve of the ships, and Thomas, of Glasgow, which built six of them. Of the sixteen ships constructed at Aberdeen, Hood built eleven, Hall three, and Duthie one.

Small wood ships were built for the Aberdeen White Star Line from the diminutive "clipper" brig *Childe Harold* of 116 tons, in 1825, to the Australian clipper packet *Aviemore*, in 1870. Aberdeen, after a promising start, did not become a great iron shipbuilding community like Glasgow on the Clyde, but Hood built the first iron clipper for G. Thompson & Company and its White Star Line in 1869; this pioneer all metal ship was the *Patriarch* of 1,339 tons, and it was followed by the *Miltiades* of 1,452 tons in 1871, *Samuel Plimsoll* of 1,444 tons in 1873, and *Salamis* of 1,079 tons in 1875. The famous *Thermopylae* of 948 tons, proclaimed by many marine authorities as the fastest sailing vessel to ply under the British flag, was of composite construction and was built expressly as a China tea clipper by Hood, of Aberdeen, in 1868, as was her great rival for premier speed honors of British sailing ships, the clipper *Cutty Sark* of 921 tons, built by Scott & Linton on the Clyde in 1869. Both of these ships, when driven from the China trade by steamships, were able to operate for many years in the Australian wool trade. The *Thermopylae* ran between London and China by way of Melbourne from the fall of 1868 to 1882, when she cut out the China run and operated thereafter directly between London and Sydney. The *Cutty Sark* proved to be decidedly inferior to the *Thermopylae* in the China trade. She made direct runs from London to China (1870-1872) and was in the London-Australia-China-London service until 1883, when she first participated in the wool race, making henceforth both outward and homeward passages in the Australian trade. The sailing record of the *Cutty Sark* in the Australian run was somewhat better than that of the *Thermopylae*, as it was said that she was at her best, in comparison with other British clippers, "in strong beam or quartering breezes" and "working to windward in rough water." Whereas the *Thermopylae* was evidently an exceptional sailer in any weather and sea, she was the superior of all her rivals in moderate and light winds.

Comparative Speed of Early American Clippers and Later British Colonial Wool Clippers over the Australian Course

Comparing the performance at sea of the big and powerful American clippers with the smaller, narrower, and more yacht-like British China tea and Australian wool clippers, we find that Britain never produced a sailing ship that could anywhere near hold her own with a Yankee clipper in the Roaring Forties or in any combination of heavy wind and seas. The British clippers were fundamentally of poor design for merchant ships, but they were beautiful craft and relatively fast in light airs and smooth waters. Lubbock admits that the American-built Black Ballers (with their size, power, and good depth) in the Australian trade could run before the westerlies with dry decks and skysails set when a British clipper, "with her narrow beam and low freeboard, would only be burying herself, if pressed or half-becalmed, under the lee of each roller if snugged down to the lower canvas."

The fastest ship of the Aberdeen White Star Line fleet, after the crack flyer *Thermopylae*, was reputed to be the wood clipper *Jerusalem* of 901 tons, built in 1867. This ship

reported an encounter with "the large American ship *Iroquois*" (first sighted on the British clipper's quarter far astern) when the *Jerusalem* was speeding for home with a wool cargo and, as usual with such a cargo, was very crank. We are told:

When the wind freshened, the *Jerusalem* heeled over to such an extent that it necessitated sail being taken in. Soon the American was ploughing along to leeward carrying her three topgallant sails and whole mainsail and going steady as a die, whilst the *Jerusalem* was flying along with fore and main lower topgallants and reefed mainsail, but

heeling over to such a degree that one could barely stand upright, the water roaring up through the lee scuppers. In a short time the topgallant sails and mainsail were handed and preparations made to reef the fore topsail. By this time, the *Iroquois* had just passed the beam, . . . and we shortly after lost sight of her in a blinding squall.

The *Jerusalem*, incidentally, participated in the Australian wool fleet races of 1873-1874, 1878-1879, and 1883-1884, making passages of 86, 84, and 87 days, respectively.

There was never any United States-built clipper ship named *Iroquois*, so presumably the "large American ship *Iroquois*" referred to above was the *Down Easter* of 2,121 tons built by Arthur Sewall & Company, Bath, Maine, in 1881, which was wrecked in March 1902 on a submerged and uncharted coral reef in the Straits of Sapi when passing from the Indian Ocean into the Java Sea and carrying case oil from Philadelphia to China. The British clipper *Jerusalem*, built in 1867, was sold in 1887, when the *Iroquois* was about six years old. The Sewall ship *Iroquois* was a large carrier and a fair sailer, but she made no pretensions of having speed approaching that of a clipper.

In the light weather of the tropics and particularly in the calms and baffling airs of the doldrums, the small, yacht-like, sharp-lined, and loftily sparred British clippers could "ghost along" and, it was said, cover from 25 to 100 per cent more mileage in a day than the heavier and more substantial American clippers. Lubbock says: "In doldrum weather such vessels as *Ariel*, *Thermopylae*, *Sir Lancelot*, and *Titania* [all British-built China tea clippers of from 815 to 948 tons and constructed in 1865-1868] possessed the power of ghosting along 4 or 5 knots when there was scarce a ripple on the water and when a Black Baller or California flyer would barely have had steerage way." On September 20, 1855, the McKay-built clipper *Lightning* crossed the Tropic of Cancer (Lat. 23° 27' N.) and was 25 days to Capricorn (Lat. 23° 27' S.); the British tea clipper *Ariel* (852 tons), we are told, crossed Cancer two days behind the big Black Baller and emerged from the tropics after a run of only 18 days, gaining a full week's sailing time on the 2,084-ton American clipper in the passage through the tropics (i.e., 46° 54' of latitude). The best time made between the lines of Cancer and Capricorn by the *Lightning* has been stated as 16 days (February 1855). The *Ariel* covered this distance of tropical latitude in 13 days and the *Thermopylae* in 12 days—both in November 1866; the best performance of the fast *Patriarch*, the 1,339-ton Aberdeen White Star pioneer Australian wool iron clipper, over the course (or through the tropics) was 15 days in June 1883.

A perusal of the logs of many ships suggests that between the latitude lines of the Tropics of Cancer and Capricorn the small tea clippers were usually five or six days faster than either the large Black Ball clippers (the fastest of which were American built) or the British iron clippers later constructed for the Australian trade. In the light weather of the tropics and more especially in the baffling air of the doldrums, the small tea clippers, with their enormous sail spread, could cover two miles at times to an Australian Black Baller's one. However, the smaller clippers such as were built for the China tea trade were no match in speed and comfort for the big clippers sailing under the flag of a packet line in the Australian run. Emigrants were a light and easy cargo, and the American ships in this service had both size and high freeboard. They could run before the westerlies and be dry and comfortable for passengers while making good speed.

None of the British tea clippers, which were small vessels, could be driven at a high rate of speed in heavy weather. They were fine-ended and overcanvased, with a narrow beam and low freeboard—facts which gave them the advantage in light winds and under the sailing conditions generally experienced in the tropics. The big American clippers were

beamy vessels and had ability to carry canvas coupled with power in the form of buoyancy properly placed. They were sharp below water, and the later well-designed ships had a good midship section, long overhang and big flare forward, and a buoyant supporting stern that made them capable of running before heavy gales and heavy seas. The smaller American clippers of the *Sea Witch* size and type should be compared as to performance with the later-built British tea clippers and not with the large, powerful American clippers built for the around-the-Horn and Australian service.

The *Thermopylae*, it has been claimed by the British, was "superior to any sailing vessel afloat beating to windward," and this quality, known as "weatherliness," was outstanding in some of the small British clippers in light and moderate breezes. In fresh and heavy winds, the American clippers would beat the best of the British ships going against the wind, but in heavy seas and tacking against head gales, no ships sailing the seas could compete with the American transatlantic packets, which did marvelous work bucking against heavy westerly gales and seas in making westbound crossings on the North Atlantic "ferry" route. The British China tea clipper *Flying Spur* (735 tons), built in 1860 by Hall, of Aberdeen, for Jardine & Company (length 184 ft., beam 31 $\frac{1}{3}$ ft., depth 19 $\frac{1}{3}$ ft.), claimed that she "passed the big American-built clipper *Lightning* of the Black Ball Line very easily when sailing to windward in light weather." The little *Flying Spur*, however, was also reported to have decisively beaten "the great *Sobraon*" under generally similar conditions of wind and sea. The *Sobraon* was "the pride of Britain," of 2,131 tons register, and the largest composite ship ever built.

It was generally asserted in the British marine fraternity that the largest of Britain's China tea and Australian wool clippers were fastest in heavy weather; that they stood driving well and did their best when running their easting down. In a good blow, the best sailers of the British clipper fleet of the China trade size and model were admittedly the *Thermopylae* and *Cutty Sark*. British marine historians attribute this to the fact that they were "larger and more powerful" than the average clipper built for the tea trade, each being 212 ft. long, 36 ft. beam (approximately), 21 ft. deep, and of 945 tons and 921 tons, respectively; whereas the majority of the clippers built in Britain for the China trade ran from 600 to 850 tons register, from 150 to 200 ft. long, and from 27 to 33 ft. beam.

The best day's runs of the British "flyers" fell far short of equaling those of the United States-built clippers. Whereas the big American ships running before favorable gales covered 400 to 436 nautical miles in a day (and the *Flying Scud* claimed 449 miles), the best performance in twenty-four hours of a British-built ship was that of the *Cutty Sark*, which claimed on two occasions 363 miles (and 363 and 362 miles on two consecutive days; also 182 miles in twelve hours). The next best British record was that of the *Thermopylae*, which is said to have covered 358 miles when running her easting down in the Roaring Forties (about 44° S. and 68° E.). The best claimed performances for a day's run of the other British yacht-like clippers built for the China trade were *Ariel*, 340 miles; *Sir Lancelot*, 336 miles. The most famous China-to-England tea race of all time was the classic of 1866, with three clippers, the *Ariel* (852 tons), *Taeping* (767 tons), and *Serica* (708 tons), leaving the Min River, China, on the same tide and arriving at London on the same tide after a passage of 99 days and with two other ships, the *Fiery Cross* (695 tons) and *Taitsing* (815 tons), arriving in 101 days. The best day's run of any of the contestants sailing under most favorable conditions for their type—model and sail plan—was 330 miles made June 26 by the *Ariel*, with the *Fiery Cross* reporting 328 miles on June 24; the *Taeping*, 319 miles on June 25; and the *Taitsing*, 318 miles on July 2.

The biggest reported day's runs for an American-built clipper averaged 18.2 knots per hour for the *Lightning* and 18.7 knots per hour for the *Flying Scud*, but there were numerous sailing performances with claimed speeds of 17 knots per hour as an average for a day. Spurt speeds of "over 18 knots" were reported by a large number of United States-built clippers, but claims were made at times, and evidently substantiated, of 19 and 20 knots

per hour. The *James Baines* emphatically declared that she logged 21 knots per hour for a short time, and the *Sovereign of the Seas* claimed 22 knots; but the few claims made of spurt speeds in excess of 21 knots should not be given a great deal of consideration, for in some cases a strong, favorable current was admitted. Two claims of 23 and 24 knots were evidently not official, but the mere statements of overenthusiasm on the part of imaginative junior officers. The best day's run of any British-built clipper averaged only $15\frac{1}{8}$ knots per hour, and the best twenty-four-hour performance of any of the contestants in the historic Tea Race of 1866 represents an average speed of $13\frac{3}{4}$ knots per hour. The *Cutty Sark* and *Thermopylae* claimed during their careers spurt speeds of 16 knots per hour under conditions that favored them to the maximum, but their size, model, stability or stiffness (even with ballast aboard as well as cargo), and spar plans could not stand being driven beyond 15 to 16 knots. Therefore, the superiority of the big and powerful American-built clippers to any of the small, yacht-like British racing machines in the Roaring Forties is apparent.

However, when the British built "the great *Sobraon*," which was a large and powerful clipper (and designed in 1866 "to equal in sailing performances the big American wood clippers built by McKay in 1854-1855"), they failed to produce a ship that could compete with any one of a host of United States-built clippers in the Roaring Forties. It was the proud boast of the owners and command of the *Sobraon* that throughout her sea life "no sailing ship ever passed her in a breeze either on the wind or before it," but the *Sobraon* never was in company with a "Yankee clipper." The best day's run reported for the *Sobraon* was 340 miles, which was only equal to that of the *Ariel* and 18 and 23 miles, respectively, less than the best day's runs of the *Thermopylae* and *Cutty Sark*. The *Sobraon* claimed "a little over 1,000 miles in three days and about 2,000 miles in a week," a distance overwhelmingly beaten by a large number of American clippers in that stated period of time. The *Red Jacket*, in the Australian trade, covered 2,328 nautical miles in seven consecutive days (July 4-10, 1854) following a week of good sailing in which she traversed 2,079 miles in six days, and during sixteen of the seventeen days from June 26 to July 12, she covered 4,952 miles—an average of 310 miles per day. The *James Baines*, also on the Australian run, covered 2,276 nautical miles in seven days (May 25-31, 1856), the *Lightning*, 2,188 miles (June 28-July 4, 1856), and the *Red Jacket*, in a North Atlantic passage, traversed 1,123 nautical miles in three and 2,083 miles in six consecutive days. Whereas the outstanding performance of any British clipper for two consecutive days' sailing was 725 miles claimed for the *Cutty Sark*, with no other claim for a British ship equaling 700 miles for the period, the *Red Jacket* covered 781 nautical miles in two days; the *Lightning*, 790 miles; and the *James Baines*, 798 miles. Some of the big day's runs (of 400 nautical miles or more per day) reported by United States-built clipper ships are stated herewith:

| Name of Clipper | Reported Day's Runs | Name of Clipper | Reported Day's Runs | Name of Clipper | Reported Day's Runs |
|-----------------|-----------------------|-----------------|-----------------------------------|----------------------------------|---------------------|
| FLYING SCUD | 449 | DONALD MCKAY | 421 | SOVEREIGN OF THE SEAS | 411 |
| LIGHTNING | 436; 430; 412 | RED JACKET | 417; 413; 410; 400 | FLYING CLOUD | 402 |
| JAMES BAINES | 423; 420; 407; 404 | GREAT REPUBLIC | 413 (360 miles in 19 hours) | INVINCIBLE and WESTWARD HO | 400 |

Of the eighteen above-stated day's runs reported as 400 nautical miles or over, twelve were made in the Australian trade sailing with favorable gales in the Roaring Forties of the Southern Hemisphere. Most of the American-built clippers during their careers, carrying extreme clipper ship spars and canvas and operating in the clipper ship decade of the fifties, were used in the California trade, where very big day's runs were deemed "impossible," as they also were in the China and Pacific trade. Extreme speed could be obtained by sailing ships only when traveling eastward before westerlies in the North Atlantic and in the Southern Hemisphere, and whereas the period of enjoyment of favorable, heavy blows in the North Atlantic was limited to a few days (generally two or three, but seldom as long as four),

ships in the Roaring Forties of the Southern Hemisphere in the Australia trade were favored by strong winds for weeks at a stretch. The *Lightning* reported covering 3,722 miles in ten days and 5,244 miles in eighteen days (also 1,446 miles in four days). Lieutenant Maury computed from the log of the *Flying Scud* that on an 80-day passage from New York to Melbourne, she covered in sixteen consecutive days (November 24-December 10, 1854) 4,620 nautical miles, traversing $106^{\circ} 54'$ of longitude in that time. This ship also sailed 1,053 miles in sixty-six hours, an average of 383 miles per day and 16 knots per hour for two and three-quarters days. Sailing down the coast in the North Atlantic before a heavy northwest "blow," the new Yankee clipper *Defiance* ran from Rockland to Fire Island at an average speed of 18 knots an hour and at times logged 20 knots. The big and powerful American clippers, after their spars, rigging, and canvas were tested and adjusted, were evidently limited in speed and mileage covered in a day only by the strength, direction, and force of a favorable wind of gale force. Captain McDonnell, while on the *James Baines* (about three and two-third years), said that he was always hoping to get a heavy blow that would keep up for a full day and give his ship all the wind she could handle. "If we had been favored by such a gale blowing from the right direction," he said, "I firmly believe the *Baines* could have covered 500 miles in 24 hours. My great disappointment is that the ship never had a chance to really show what she could do, and day's runs of 423, 407, and 391 miles on her maiden voyage in the Australian trade were made with strong favorable winds that were squally and not steady blows, and the *Baines* could have stood well and travelled much faster and a good deal further if she had had a gale of the maximum force experienced in the squalls."

As a measure of the general speed of sailing ships under good but not exceptional conditions, it is interesting to note that in the season of 1887-1888 the average speed for the whole Australian wool fleet, throughout its voyages home, was a little over 6 knots. To come to more recent times, it is said that during the four years 1925-1929 the big and more burdensome *Herzogin Cecilie*, which three times won the race home from Australia in which other vessels of the same general type participated, averaged about 100 days for her passages. This indicates that her mean effective speed in the desired direction during those four long voyages was a little under 6 knots. It will be seen, therefore, that the big and burdensome sailing vessels of the nineties, although designed primarily as cargo carriers, with very flat floors, sharp bilges, and fuller ends, were not very much slower in certain long-voyage, deep-sea service than the general run of the sharp-modeled and well-canvased Australian wool clippers of the seventies and eighties.

The fastest runs of British ships participating in the Australian wool trade were made by the small composite-built China tea clippers *Cutty Sark* and *Thermopylae*. However, the best passages of these extremely sharp ships, with small carrying capacity, did not equal the time made by the larger and more powerful American wood clippers. The British ships had the advantage in the light winds around the tropics, but the American ships could always outsail them in a moderate or heavy blow. The *Cutty Sark* is credited with seventeen outbound passages from some English Channel point (such as the Lizard, "off Start Point," or "off Portland," but never from the city of London) to Australia (i.e., pilot off Melbourne, Sydney, or some other port) averaging $78\frac{1}{2}$ days during the years 1872-1894 inclusive. On the homeward run, from the dropping of the Australian pilot to making some English Channel point, the *Cutty Sark* is credited with twelve passages averaging $82\frac{1}{4}$ days during the years 1883-1895 inclusive. The *Thermopylae* made some faster passages outbound than the *Cutty Sark*, but the latter ship is credited with the best runs home. However, in this connection, it should be noted that there was a very noticeable lack of standardization in the points of origin and completion of all passages of these and most of the other British clippers—both outbound and homebound. The times reported for the length of passages of the United States-built clippers engaged in the British-Australian run were between clearly stated points—port to port, pilot to pilot, etc. There was no such indefiniteness in the early Liverpool-Melbourne trade records as prevailed later in the runs of British-built clippers engaged in service between London and certain Australian ports.

The only British clipper that approached the record of the American clippers in the British-Australian trade was the *Thermopylae*, which is credited with a record of 63 days from London (November 7, 1868) to Melbourne (January 9, 1869). However, the log of the vessel shows that the *Thermopylae* must have left London much earlier than November 7; for she was at Gravesend on November 5, left Gravesend at 5:00 A.M., November 7, and passed the Lizard at 6:00 P.M., November 8, after a very fast run down the Channel. The ship reached Port Phillip Harbor at 7:00 P.M., January 9, 1869, and was, therefore, 63 days and 14 hours from Gravesend to Port Phillip Harbor. The *James Baines*, on her maiden voyage in the winter of 1854-1855, ran from Rock Light, Liverpool, to Hobson's Bay in 63 days and 18 hours and from land to land in 58 days—the record. The *Red Jacket*, in 1854, made the passage from Liverpool to Melbourne in 67 days 13 hours total time under sail, and the *Lightning*, in 1855, bound from Liverpool to Melbourne, was 67 days "from land to land"; in 1856 she was 68 days 10 hours, port to port, and in 1857, 69 days 6 hours from Liverpool to Port Phillip Heads. The *Young America*, in 1858 (April 18-June 20), equaled the record of 63 days on a passage from Liverpool to Melbourne, and the American clipper *North Wind* of 1,041 tons, built in 1853, ran from London (Downs) to Port Phillip in 66 days (November 10, 1859, to January 15, 1860). Only two passages of the *Thermopylae* out of twenty-two and one of the *Cutty Sark* out of seventeen were made from a point in the English Channel to pilot off an Australian port in better than 70 days.

On the homeward passages from Australia to England, the *Cutty Sark* claimed a 71-day run from Newcastle (December 28, 1887) to Dungeness (March 8, 1888), and the best homeward passage of the *Thermopylae* was 77 days (October 14-December 29, 1882). Of the big American-built clippers, the *Lightning*, in 1854, ran from Melbourne to Liverpool in 64 days 3 hours and from pilot to pilot in 63 days 16 hours. The *Sovereign of the Seas*, in early 1854, made a passage of 68 days and the *James Baines*, in 1855, a run of 69 days 12 hours—both from Melbourne to Liverpool. In 1883 the fast British clipper *Thermopylae*, with a passage of 105 days from Sydney, N.S.W., to the Lizard, made a slower run home than the much-advertised (in England) poor passage of the *James Baines*, made in the autumn of 1856 under what were said to be "unprecedented, unfavorable sailing conditions." The fast outward passage of the *Thermopylae* from England to Australia was made on that ship's maiden run to the antipodes—some fourteen years later than the record passage made by the *James Baines* and about ten and a half years after the record was tied by the famous American Cape Horner *Young America*. A British marine historian has said that "the *Thermopylae* repeated her record run to Australia the following year." This is positively untrue, as the 1869-1870 passage of that ship (her second outward run to Australia) originated at a Channel port on November 10, 1869, and ended at anchorage off Melbourne on January 25, 1870, being a passage of 76 days and not of 63 days.

An interesting fact, when comparing the sailing performances of the *Thermopylae* and the *James Baines* on their record runs of 63 days from England to Australia, is the relatively high speed of the smaller British vessel in the tropics and the superiority of the larger American clipper in the temperate zone and southern latitudes, where higher winds and seas generally prevail. During the three days before and three days after crossing the equator, the *Thermopylae* sailed 1,422 miles (maximum, 293; minimum, 140; average, 237 miles) and averaged $9\frac{7}{8}$ knots per hour—a remarkable rate of speed for that part of the ocean. Her best day's runs of 330 and 326 miles were made in southern waters—the Roaring Forties—in strong winds five and six days from her destination, but during favorable gales she covered materially less than 300 miles a day under heavy wind conditions that the big American clipper would have liked and taken full advantage of. On the record run of the *James Baines*, she did not do nearly as well as the *Thermopylae* in the tropics, but in heavy blows she sailed fast and far and covered 420 miles in twenty-four hours.

*Comparative Particulars and Performances of the Best British
Colonial Wool Clippers over the Australian Course*

The two ships in the sailing fleet of the British merchant marine in the seventies and eighties that stood out pre-eminently in the Australian service were the *Cutty Sark* and *Thermopylae*, with runner-up honors in wool fleet passages going to the *Mermerus* and *Salamis* and honorable mention to some six or eight more excellent iron or composite ships, of which the *Samuel Plimsoll* can be singled out for good, conservative work and uniformity in satisfactory length of passages—notwithstanding defects in her spars and rigging. The following table shows comparatively the available statistics pertaining to the dimensions, nature, and relative size of these five famous British colonial clippers:

| Name of clipper | CUTTY SARK | THERMOPYLAE | MERMERUS | SALAMIS | SAMUEL PLIMSOLL |
|-------------------------------|---|-----------------------------|---|-----------------------------|-----------------------------|
| Year built | 1869 | 1868 | 1872 | 1875 | 1873 |
| Builder | Scott & Linton and Denny Bros., Dumbarton, Scotland | Hood, Aberdeen, Scotland | Barclay, Curle & Co., Glasgow, Scotland | Hood, Aberdeen, Scotland | Hood, Aberdeen, Scotland |
| Owner | J. Willis | Geo. Thompson & Co. | Carmichael | Geo. Thompson & Co. | Geo. Thompson & Co. |
| Construction | Composite | Composite | Iron | Iron | Iron |
| Registered tonnage—net | 921 | 948 | 1,671 | 1,079 | 1,444 |
| Registered tonnage—gross | 963 | 991 | 1,752 | 1,130 | 1,512 |
| Registered tonnage—under-deck | 892 | 927 | 1,590 | 1,021 | 1,370 |
| Length | 212 ft. 5 in. | 212 ft. | 264 ft. 2 in. | 221 ft. 6 in. | 241 ft. 3 in. |
| Beam | 36 ft. | 36 ft. | 39 ft. 8 in. | 36 ft. | 39 ft. |
| Depth | 21 ft. | 20 ft. 9 in. | 23 ft. 7 in. | 21 ft. 7 in. | 23 ft. 1 in. |
| Molded depth | 22 ft. 5 in. | 23 ft. 2 in. | 26 ft. | 23 ft. 7 in. | 25 ft. 6 in. |
| Length of poop deck | 46 ft. | 61 ft. | 54 ft. | 48 ft. | 50 ft. |
| Length of main yard | 78 ft. | 80 ft. | 88 ft. | 81 ft. | 86 ft. |

The following comparative statement shows the sailing performances on the homeward run of the four best and fastest British ships in the British-Australian wool fleet for the years 1873-1890. The service performance of the *Samuel Plimsoll* has been added to this list as a matter of interest. Unfortunately, there was no standard port of departure or arrival, although London was almost always the destination. Sailings were from Melbourne, Sydney, Newcastle, and Geelong, and the lengths of passages are "as reported."

| Name of Ship | Number of Voyages | Longest Passage Days | Shortest Passage Days | Average Passage Time—Days | | |
|---|-------------------|----------------------|-----------------------|---------------------------|----------------------|-------------------------|
| | | | | Of All Voyages | Of Five Best Voyages | Of Five Longest Voyages |
| CUTTY SARK | 7 | 84 | 71 | 76.4 | 73.8 | 78.4 |
| THERMOPYLAE | 10 | 95 | 75 | 84.1 | 78.6 | 89.6 |
| MERMERUS | 15 | 109 | 78 | 89.8 | 82.4 | 97.8 |
| SALAMIS | 13 | 109 | 77 | 90.1 | 82.8 | 97.6 |
| The record of the SAMUEL PLIMSOLL, although not the next in order for fast voyages, is appended for reasons stated elsewhere. | | | | | | |
| SAMUEL PLIMSOLL | 17 | 113 | 80 | 94.7 | 84.0 | 105.2 |

*The Composite Clipper THERMOPYLAE—"the Pride of the
British Merchant Service"*

The *Thermopylae* of 948 tons, built in 1868, was frequently described as "the pride of the British merchant service." She was considered by many Britishers and by marine authorities of many other nations as the fastest of all British-built craft of the booming China tea and Australian wool clipper ship days; some enthusiastic British historians have even described her "as the fastest sailing ship ever launched." The records show that the *Thermopylae* was much faster than her great rival in the China-Britain tea trade, the *Cutty Sark*, built about the same time (i.e., one year later), of approximately the same size and rig, and also of composite construction. The average of the *Thermopylae* for her ten tea passages (according to British records) was 106.8 days; that of the *Cutty Sark* for eight such passages, 118.9 days. The best tea run of the *Thermopylae* was made in 91 days and of the *Cutty Sark*, 107 days. The *Thermopylae*, on her first voyage in 1868, sailed to Melbourne from Gravesend in a reported 63 days, and in 1869 she was the first of the British fleet to bring back tea from China—in 91 days. However, the fastest of the twenty-three British tea passages of that year was the run from Foochow of the *Sir Lancelot* (886 tons), which was reported as only 89 days, and the only other run recorded as under 100 days was that of the *Titania* (879 tons), which made the passage from Shanghai in 98 days. The *Thermopylae* was built from designs of Bernard Waymouth, Secretary of Lloyd's Register. She was the "queen" of Thompson's "White Star" clipper fleet and one of the prominent ships in British trade with the Australian colonies from her maiden voyage under canvas from London to Melbourne (November 1868-January 1869) to her last passage as a White Star liner from Sydney to London (January-April 1890)—a period in the service of about twenty-one and a half years. The *Thermopylae* was sold by Thompson to Reford, of Montreal (Rice Milling Company), in 1890 and taken off the Australian route. For about five years, she engaged in the rice trade between Rangoon and Vancouver, B. C. In 1895 the ship was sold to the Portuguese Government for a training vessel and renamed *Pedro Nunes*. On October 13, 1907, the old *Thermopylae*—then thirty-nine years of age—was towed out of the Tagus by two Portuguese warships, used as a target for torpedoes, and, in this way, given a "naval funeral," as she was then "too old and too small for the service in which she was engaged."

The records of the Aberdeen White Star Line show that between 1879 and 1890 the *Thermopylae* made eleven voyages under its house flag from Sydney, Australia, to Europe, of which eight were said to have terminated at London (or pilot for London), one at Prawle Point, and one each at the Lizard and Deal, as on these two passages the ship was bound for Rotterdam. The average length of these eight runs is stated as 86 days; minimum, 77 days; maximum, 105 days (which was the passage in 1888 from Sydney to the Lizard). On the outward run, the average time occupied on twelve passages was reported as 86 days, but eleven of the runs were to Sydney and one (79 days) to Melbourne (one passage was admittedly timed from the Lizard). Prior to being engaged in the Australia-Britain wool run, the *Thermopylae* made ten voyages from London to Melbourne, Australia, en route to China, with an average stated length of passage (evidently from pilot to pilot) of 73¼ days (minimum claimed as 63 days; maximum, 85 days)—and this during the years 1868-1878. The all-time record of the *Thermopylae* in the British-Australian service, both as a China tea trader, with an outward run to Melbourne (1868-1878), and as a British-Australian wool clipper (1879-1890), shows twenty-two outbound passages averaging 80 days between the points of departure and of arrival.

The *Cutty Sark* was the only British vessel in the seventies and eighties that could seriously dispute the contention of the *Thermopylae* that she was the fastest sailing ship in the world. The owners of the *Cutty Sark* emphatically claimed that distinction and honor for their ship, and she also had a large following among seafaring men and marine authorities generally. The *Cutty Sark* had been specifically designed and built to beat the fast Aberdeen White Star clipper, and both ships featured speed to the detriment of carrying capacity and safe, easy handling. Records of the complete list of the *Cutty Sark's* Australian voyages from 1883 to 1895 show twelve homeward passages with an average reported time of 82¼ days (minimum, 71 days; maximum, 94 days, with three voyages of this maximum duration); from the maiden voyage of the *Cutty Sark* and prior to December 1883, the vessel made her homeward passages in the China tea trade. The port of departure of the *Cutty Sark* as an Australian wool clipper was generally Sydney, occasionally Newcastle, and once Brisbane. The point of arrival in England is given on seven occasions as London, which may mean any point in the Channel, and once as Hull; the other four are specified as English Channel points. On the outward run to Australia, the vessel is credited with seventeen passages from 1872 to 1895, with an average time between certain points—supposed to cover the ocean passage—of 78½ days (minimum, 69 days; maximum, 89 days). The destination was Melbourne, Sydney, or Newcastle, but the point of departure was generally off some Channel point, such as Start Point, the Lizard, Portland, etc.

It is interesting to compare the cargoes carried by the two great rival sailing queens of the British merchant marine. According to builders' plans and model curves, both the *Thermopylae* and *Cutty Sark* had a displacement of 1,970 tons at stated load draft. It was generally admitted that in service the *Thermopylae* was able to load about one hundred tons more deadweight than the *Cutty Sark*, but this does not mean that in her prime and during her racing days she carried this extra cargo. Her owners, the Thompsons of the Aberdeen White Star Line, were conservative operators and never overloaded their ships, with the result that in 1872 the *Thermopylae* carried only 1,196,400 pounds of tea against the *Cutty Sark's* 1,303,000 pounds. In 1876 both vessels carried their largest tea cargoes: *Cutty Sark*, 1,375,364 pounds; *Thermopylae*, 1,429,100 pounds. The *Cutty Sark's* largest coal cargo from Sydney to Shanghai was 1,150 tons; the *Thermopylae's* best coal cargo in the same run was 1,208 tons.

The *Cutty Sark* was so fine in her lines that she could not stow tallow and other cask cargo, so that on the Australian run she was always loaded with wool. Up to 1891, her largest wool cargo was 4,676 bales on a mean draft of 19 ft. 8 in. Later, when the wool was compressed in baling, she carried 5,010 bales (nearly two million pounds in weight) said to be worth £100,000, for which the owners received £4,000 for freight. The cost of the loading was stated at £800. When the *Cutty Sark* carried wool, she had to load about two hundred tons of chrome ore to give her the necessary stability and stiffness. In those days it was a common practice of the British ships to carry a nonpaying ballast even with a paying cargo, and tea ships in the China run of some 1,000 tons register often carried 200 to 250 tons of ballast in addition to their 1,250,000 pounds or so of tea cargo. On one occasion, the *Cutty Sark* sailed with a cargo of scrap iron loaded "as deep as a sand scow" and drawing 21 ft., and in 1882 (she was off the Australian run from 1878 to 1883) she loaded 26,816 cases of oil in New York on a mean draft of 21 ft. 1 in. The *Thermopylae* is reported to have loaded 1,000 tons of paying cargo and 250 tons of ballast weight (or 1,250 tons deadweight) on a mean draft of 21 ft. 6 in.

The *Thermopylae* was an exceptional sailer in moderate and light winds and a notoriously fast drifter, or mover, in "gentle zephyr." It was said of her, "She goes along 7 knots an hour when a man can walk her deck with a lighted candle." It would seem that the *Cutty Sark* found her sailing qualities best suited to the Australian voyages and that the *Thermopylae* found the weather, wind, and sea conditions in the China service more to her liking, although she sailed magnificently anywhere. Lubbock says, "The average of the

Thermopylae's best ten passages out to Melbourne, from pilot to pilot, gives the astonishing time of 67 days." This is incorrect, for the following are the reported lengths of the twenty-two outbound passages of the *Thermopylae*, which are all that she made in the British-Australian trade, and the times given are from some indefinite point—all the way from Gravesend to off the Lizard—to a point, the pilot, or anchorage off the port of destination:

| Number of Passages | Length of Passage in Days | Number of Passages | Length of Passage in Days | Number of Passages | Length of Passage in Days | Number of Passages | Length of Passage in Days |
|--------------------|---------------------------|--------------------|---------------------------|--------------------|---------------------------|--|---------------------------|
| 1 | 63 | 2 | 75 | 2 | 82 | 2 | 93 |
| 1 | 65 | 2 | 76 | 1 | 83 | 1 | 109 |
| 1 | 70 | 1 | 77 | 1 | 85 | Average of 22 passages, 80 days | |
| 1 | 72 | 1 | 79 | 1 | 90 | Average of best 10 passages, 71.8 days | |
| 2 | 73 | 1 | 80 | 1 | 91 | | |

Homeward bound, the *Thermopylae* is credited with eleven passages from Sydney to London (one stated as Prawle Point) in the following times: 77, 78, 79, 80, 81, 87 (twice), 88, 89, 95, and 105 days, respectively. The average of the best five passages (lengths as stated) is 79 days and of the best nine—out of the total of eleven—83 days.

In 1883 the *Thermopylae* made a surprisingly bad passage from the Thames to Sydney—reported as 109 days. That the crack British ship, largely because of her relatively small size but also because of her hull proportions and model lines, was greatly inferior to the American-built clippers is evidenced from the following extracts from her log for twenty-five consecutive days (January 25-February 18, 1883, inclusive) while the vessel was in the North Atlantic between Lat. 48° 53' N., Long. 5° 02' W. and Lat. 36° 18' N., Long. 15° 59' W.:

| Day's Run Nautical Miles | Wind and Sea | Day's Run Nautical Miles | Wind and Sea | Day's Run Nautical Miles | Wind and Sea | Day's Run Nautical Miles | Wind and Sea | Day's Run Nautical Miles | Wind and Sea |
|--------------------------|---|--------------------------|--|--------------------------|--|--------------------------|-----------------------------|--------------------------|--|
| 50 | Strong westerly breeze | 75 | Strong N.W. gales; heavy sea | 65 | Fresh westerly breeze | 30 | Strong W.S.W. to N.W. gales | — | Strong W.S.W. gale |
| 95 | Strong westerly gale; heavy squalls; high sea | 8 | Violent gales from S.S.W. to N.W.; heavy sea | 41 | Strong S.W. breeze | 28 | Strong W.S.W. gale | 38 | Fresh W.S.W. breeze; then light airs and calms |
| 52 | Strong gale and heavy squalls; N.W. to W. | — | Violent gale | 20 | Strong S.S.W. to S.W. gale | 45 | Heavy W.S.W. gale | 102 | Light S. wind and calms; heavy swell |
| 48 | Strong gale from west; heavy squall | 14 | Violent gale; W.S.W. to N.W. | 67 | Strong S.W. breeze to N.W. strong gale | 124 | Strong W.S.W. breeze | 45 | Calms and variable winds |
| 15 | Heavy W.S.W. gale; heavy sea | 44 | Strong W.N.W. gale; heavy sea | 108 | Strong N.W. breeze to W.S.W. gale | 24 | Strong W.S.W. gale | 35 | Light variable airs |

On January 29 and 30, the log records the ship as laboring "very much," or "heavy," and "shipping much water on deck." On January 29, February 1, 6, and 10, the ship "lay to" for several hours. On January 31 and February 1, she lost main and fore topsails; also a new mizzen staysail. In the total twenty-five days, the *Thermopylae* covered only 1,173 miles—an average of less than 47 miles per day and less than 2 knots per hour. For twenty-one and a half days out of the twenty-five, the ship had too much wind, but for the last three and a half days she reported light variable winds and calms. During the twenty-one and a half days of heavy weather, from strong breezes to violent gales, the ship averaged only 45¼ miles per day and 1.88 knots per hour.

Captain Jenkins, the last commander of the *Thermopylae* under the Thompsons' Aberdeen White Star clipper flag, declared that on December 31, 1888 (less than two years before she was sold and withdrawn from the Australian trade), his ship, running her easting down in Lat. 44° S., Long. 68° E. bound out to Sydney, made 358 miles in twenty-four hours—an average of a scant 15 knots per hour for the day; her reported time for this outward passage was 91 days and arrival at Sydney, January 29, 1889.

The British developed some queer notions in regard to ship design during the period in which British sail of the clipper type competed with American clippers in the China, Australia, India, and East India trades. During the first part of the American clipper ship decade and prior to the depression that culminated in the commercial panic of 1858, American wood ships were generally maintained in good physical condition and were often favored by being paid premiums in freight for (1) speed of passage and (2) excellent condition of cargo on delivery. In later years, an oversupply of bottoms, keen competition, low freights and revenue, etc., resulted in an excessive economy of operation in many cases and trades. The masts, spars and sail spread were cut down, the number of the crew "cut to the bone," and, unfortunately, the physical maintenance of the ships was neglected at times to a conspicuous degree—and this at a time when iron ships had a natural advantage in delivering cargoes in good condition, particularly in the tea trade. Composite-built ships should have been and generally were stronger and stiffer than average British-built wood ships of similar tonnage. It was said that the best-built British composite tea clippers were "as tight as a bottle," and it was reported that such ships as the *Ariel*, built by Steele, of Greenock, Scotland, in 1865—with teak planking to bilge and elm bottom over iron frames and longitudinal stiffening—"required only ten minutes spell at the pumps every twenty-four hours of the first week loaded outward bound, after which the ship had taken up, was perfectly tight, and required no more pumping for the voyage." However, a theory developed in British clipper ship circles that the old practice of attempted rigidity of construction was a mistake and that "a ship sailed better if allowed some play in hull as well as gear." It is said that when the *Thermopylae* was built, this ridiculous theory of flexibility—of "give," or of "play"—was quite generally accepted in British yachting, racing, and the tea trade service and that the builders sought to produce "yielding and non-rigid vessels." Be this as it may, British historians tell us with pride that the *Thermopylae's* seams would open up when the ship was heavily pressed, and Lubbock argues that the length of life of some of the hardest-driven British composite clippers proves that it was possible "to get strength without rigidity." The iron framing, deck beams, longitudinals, stringers and brackets made the composite vessels, which were practically all small craft, live to a good age if kept free of the hazards of wrecking, foundering, and fire; but the composite ships were planked either wholly or in part with "imperishable Indian teak," and even if deemed indestructible by time or the elements, they, nevertheless, quite frequently had planks and sections replaced. The *Cutty Sark*, which was structurally stiffer and more rigid than the *Thermopylae*, had a much longer sea life than her famous rival. However, a large number

of American-built wood ships had a longer life than the composite-built *Thermopylae*, and the *Cutty Sark* as now afloat is a preserved and rebuilt vessel, which can be considered somewhat analogous to the United States frigate *Constitution*—built of wood in 1797 and rebuilt first because of need and later because of sentiment. At the time of this writing, she floats at an age of 145 years (with little of her original timber remaining). Many American wood sailing ships, sneeringly and falsely referred to by British marine historians as “soft-wood ships” and as vessels of “light construction,” were in active service when half a century old, and some ships, after long years in the North Atlantic sailing packet service, had their timbers and planking well impregnated and preserved by oil through many decades of steady service as whalers and survived in trade until seventy, eighty, ninety, and even a hundred years old.

THE TWEED—*an Indian-built Vessel and the Inspiration*
for the CUTTY SARK

The Tweed, built of Malabar teakwood by the Parsees, was constructed as a steamer at the Bombay Dockyard in 1854 and purchased in 1862 by Capt. John Willis (known in London as “Willis of the White Hat”) for conversion into a clipper-rigged sailing ship. She was the inspiration and served as a model for the construction in 1869 of the famous *Cutty Sark*. *The Tweed*, which was declared by her owner, Willis, in 1868, to be “the fastest ship ever built,” was of 1,745 tons register; 285 ft. length over-all, 250 ft. registered length, 39.6 ft. beam, and 25 ft. depth. She had a poop 66 ft. long and a fo’c’s’le of 57 ft. The model of this fast vessel (designed and built as a paddle-wheel steam frigate) was made from lines laid down by Oliver Lang, a dockyard draftsman working for the East India Marine. It is said that he, admittedly, pirated his idea as to form from the hulk of a French frigate in Bombay Harbor, which was renowned in her time for speed. It has been said that the original Baltimore clippers owed their model to “the clever draughtsmanship of some dead and gone French naval architect,” whose work was, therefore, seen “in the beautiful lines of old American Revolutionary and early Republican privateers.” It would appear that, on the opposite side of the world, the skill of old French designers of fast ships, who were far in the van of British and American colonial designers (the Americans, prior to the Revolution, being absolutely dominated and restrained by British thought, prejudice, and tradition), was the inspiration that led, through the modeling of *The Tweed*, to the lines of Britain’s fastest clipper, the *Cutty Sark*, as laid down by Hercules Linton. He was commissioned by John Willis to make the drawings of that ship, which was to be his “new tea clipper” and “beat any vessel afloat engaged in the China trade.” The understanding was that “she must be faster than George Thompson’s new *Thermopylae*” (built by Hood at Aberdeen in 1868) and “be modelled on exactly the same lines as *The Tweed*, but of only a little more than half the tonnage.” Willis said, “*The Tweed* is far too large for the tea trade.” She was of 1,745 tons register as before stated; whereas the *Thermopylae* was of 948 tons, and the *Cutty Sark*, originally estimated by Linton and Willis to be a ship of “around 900 to 925 tons,” actually measured 921 tons.

The Tweed is credited with a run in the British colonial (Australian) emigrant trade of 69 days from London (Channel Point) to Port Chalmers. The ship made three runs from Australia to England in the wool fleet (1873-1876), with an admirable record for speed:

| | |
|--|--|
| 1873-1874—83 days; the second of thirteen ships; best, <i>Samuel Plimsoll</i> with 82 days. | 1875-1876—69 days; the winner by a tremendous margin in a fleet of thirty-three ships. Next best times, <i>Parramatta</i> with 79 days; <i>Samuel Plimsoll</i> with 83 days. |
| 1874-1875—86 days; the seventh of twenty-four ships; best, <i>Miltiades</i> , <i>Oberon</i> , and <i>Ben Nevis</i> with 77 days. | |

The average of these three homeward passages was only 79.3 days, which can be compared with an average of $82\frac{1}{4}$ days for twelve similar passages for the *Cutty Sark* and an average of 86 days for eleven homeward runs from Australian ports reported by the *Thermopylae*. Moreover, neither of Britain's crack clippers, at any time in their careers, equaled the reported 69-day homeward passage of *The Tweed*, the best run home of the *Cutty Sark* being 71 days in 1887-1888 (Newcastle to Dungeness) and of the *Thermopylae*, 77 days in 1882 (reported as "Sydney to London"). On July 9, 1880, when in the Australian trade, *The Tweed* reported her best day's run as covering 368 miles—an average speed for twenty-four hours of $15\frac{1}{3}$ knots per hour, with a maximum spurt speed by log of 17 knots.

The Tweed was dismasted July 18, 1888, and badly damaged. She was towed into Algoa Bay, and as necessary repairs to recondition her were deemed too expensive, she was eventually broken up.

The Tweed was known during her sailing days as a London Blackwall frigate, although she was not built to operate under canvas and her sailing career was not as a Blackwaller. The fastest London Blackwall sailing frigates actually built for Australian and Indian service were the *Parramatta* of 1,521 tons (length 231 ft., beam 38.2 ft., depth 22.8 ft.), launched in 1866 by Laing, of Sunderland, and *La Hogue* of 1,331 tons (length 226 ft., beam 35 ft., depth 22.9 ft.), constructed in 1885 by the same builder. The Blackwall clipper frigate that seems to hold the fleet record for speed is the *Anglesey*, built in 1852 by Green's Blackwall, London, yard. She was of 1,018 tons (182 ft. long, 34 ft. beam, and 22 ft. deep) and described as "a short, deep little ship, fast in a blow and exceedingly fast in light airs, that was never beaten by any other Blackwall frigate." On May 29, 1871, on a voyage from London to Melbourne, the log of this frigate shows a day's run of 418 miles. However, investigators have proved that "the actual distance covered was less than that claimed and probably 380 miles is more nearly correct; but, even at this, the 24-hour run was the biggest day's work ever made by any Blackwall frigate." The ship's log shows 1,971 nautical miles covered in seven days' time (May 29-June 4), an average for a week of $281\frac{1}{2}$ miles per day and about $11\frac{3}{4}$ knots per hour. On this passage, the *Anglesey* ran out to Melbourne in 72 days and returned in 79 days, which was excellent sailing time and comparable with that of clippers.

The CUTTY SARK—the Fastest British Clipper in the Australian Wool Trade

The *Cutty Sark* had a rather unlucky start, for her builders on the Clyde (Scott & Linton) went bankrupt before they completed their contract with John Willis, of London, for her construction, and she had to be finished by Denny Brothers, of Dumbarton. Whether it was because of lack of money or of practical experience or undue haste on the part of her builders, it is known that the vessel had a bad time of it at sea on her maiden voyage and that a good

deal of her ironwork aloft proved defective, gave way, had to be patched and ultimately replaced. In the ship's race with the *Thermopylae* in 1872, the *Cutty Sark* lost her rudder, and this occurrence was the excuse of the Clyde-built ship for being beaten by the Aberdeen flyer by a week on a passage from Shanghai to London. The ships cleared Shanghai within an hour or two of each other on June 18, the *Thermopylae* arriving October 11, 1872, after a 115-day passage, and the *Cutty Sark* on October 18, after a run of 122 days. The *Cutty Sark* has been described by British historians as "a thoroughbred from keel to truck," although she was said by contemporaries to be less pleasing in appearance than the Aberdeen-built *Thermopylae* and "not as beautiful as the dainty Steele, of Greenock, creations," such as the *Ariel* (852 tons), *Sir Lancelot* (886 tons), *Chinaman* (668 tons), *Titania* (879 tons), *Labloo* (799 tons), *Kaisow* (795 tons), or the *Wylo* (799 tons), built during the years 1865-1869 inclusive; or the early Steele yacht-like tea clippers *Falcon* (794 tons), *Min* (629 tons), *Guinevere* (646 tons), *Taeping* (767 tons), and *Serica* (708 tons), built during the period 1859-1863 inclusive. The *Cutty Sark* is said to have been the most powerful of all the British tea clippers of 1,000 tons or less; this is probably true, as the *Cutty Sark* was better in the Australian than in the China trade as regards speed, and no British-built clipper "of her inches" ever rivaled her performance in easting weather.

Like the *Thermopylae*, the *Cutty Sark* continued to carry her original length of masts and spars and full suit of "racing sails" for years after the other British China clippers had been cut down in the interest of economy and, in many cases, the yards removed from the mizzen and the rig changed from ship to bark. In 1880, however, the lower masts of the *Cutty Sark* were cut down 9½ ft., her lower yards reduced 7 ft. in length, and other spars shortened in proportion.

The available statistics of the sailing performances of British ships are likely to give a false picture of the actual length of the passages from the port of origination to the port of destination. The passage of the *Cutty Sark* from London to Sydney in the winter of 1877-1878 is a case at point. The published records say that the ship made "a splendid passage of 72 days," but give the commencement of the voyage as "off the Lizard" (at the extreme western end of the English Channel and many days' sailing from London) on December 6, 1877, and the arrival at Sydney as February 16, 1878. Actually, however, the *Cutty Sark* left London in tow on November 3, 1877, and finally reached Sydney on February 18, 1878, the elapsed time from the commencement to the completion of the passage being 107 days. The ship was at the Downs, under canvas, on November 11 in bad weather and got out of control. The tug *M'Gregor* went to her assistance, and later the tug *Benachie* helped the *M'Gregor* to tow the ship back to the Thames. As the *Cutty Sark* and her cargo were valued at £85,000 (about \$413,000), the tugs were awarded £3,000 (about \$14,500) for "saving the vessel and her cargo" when in distress, unmanageable, and in danger of being driven ashore and becoming a total loss. One British writer actually refers to this winter passage of the *Cutty Sark* outbound to Australia as "a wonderful passage of 68 days" and states that the ship "left London December 12, 1877, and arrived at Sydney on February 18, 1878." He further states that on this occasion "she made her best passage out to Sydney after very nearly ending her days on the Goodwin Sands." Only the last part of this statement is correct. The ship made her second departure from the Thames on this voyage on December 2 and not December 12, and she had spent 29 days before that time (i.e., from November 3 to December 2) in a futile attempt—with cargo and passengers aboard—to get down the English Channel. Here is a case of a British ship's worst and most unfortunate sailing performance between London and an Australian port being falsely described as her best.

The recorded length of passages of the *Cutty Sark*, both outbound and homebound, between certain variable English Channel points (except one homebound run, which is stated as ending at Hull, on the River Humber) and Australian ports is as follows. The time is usually from the picking up or discharging of pilot.

| | | | | | | | | | | | | | | | |
|---------------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Stated length of passage in days..... | 69 | 71 | 72 | 73 | 74 | 75 | 77 | 79 | 80 | 82 | 84 | 86 | 88 | 89 | 94 |
| Outbound | 1 | — | 1 | 1 | — | 1 | 3 | 5 | 2 | 1 | — | — | 1 | 1 | — |
| Homebound | — | 1 | 2 | — | 1 | — | — | — | 1 | 1 | 2 | 1 | — | — | 3 |

The average of the best seven of the seventeen outbound passages as stated is 74 $\frac{1}{3}$ days and of the best six of the twelve homebound passages, 75 $\frac{1}{8}$ days. Unfortunately, these British figures, as recorded, cannot be relied upon for accuracy. The *Cutty Sark*, for instance, never made a passage as claimed of 69 days from London to Melbourne on her maiden voyage to Australia, "beating the *Thermopylae* on the run by 6 days." A comparison between the recorded and actual passages of the two rival British composite clippers on the 1872-1873 winter run out from London to Melbourne is of interest:

| | THERMOPYLAE (Captain Kemball) | | CUTTY SARK | |
|--------------------------------------|--|--|--|--|
| | As Tabulated by British Historians | As per Ship's Log | As Tabulated by British Historians | As per Ship's Log |
| Left London | Nov. 13, 1872 | Nov. 14, 1872 | Dec. 4, 1872 (off Start) | Nov. 25, 1872 |
| Dropped pilot off Dartmouth | | Nov. 17, 1872 | | Nov. 28, 1872 |
| Arrived Melbourne | Jan. 27, 1873 | Jan. 27, 1873 | Feb. 11, 1873 | Feb. 11, 1873 |
| Stated length of passage | 75 days | 71 days from pilot; 74 days from port to port | 69 days | 73 days from pilot; 78 days from port to port |

British historians, who seem to have been very partisan and prejudiced in favor of the *Cutty Sark* over the *Thermopylae*, give statistics suggesting that the Clyde-built ship beat the Aberdeen-built clipper six days on this run out to Australia; whereas the *Thermopylae* actually beat the *Cutty Sark* on this outbound passage by two days from pilot to pilot and by four days from port to port.

The *Cutty Sark* was sold in July 1895 to Ferreira & Company, Lisbon shipowners, for £2,100 and was renamed *Ferreira*. She was used for some time in the South American trade, and her rig was changed to that of a barkentine. In service and occasionally laid up, she remained under the Portuguese flag for twenty-seven years; in September 1922, she was purchased by Capt. W. H. Dowman, for sentimental and patriotic reasons, for the sum of £3,750, or some 80 per cent more than the Portuguese had paid for her over a quarter of a century earlier. The *Cutty Sark* in 1945, at the ripe old age of seventy-six years, still floats and is once more under the British flag, having been reconditioned and refitted as a full-rigged ship, with her spars arranged and proportioned as they were in the eighties and nineties. On June 18, 1938, this famous clipper finished her last voyage (in tow) when she arrived at the Thames and took her place astern of H.M.S. *Worcester*, the British naval cadet training ship at Greenhithe. She is now being used with the *Worcester* for training purposes, having been presented to that naval cadet training institution by the widow of the late Captain Dowman, her previous owner, who acquired and reconditioned her for sentimental and not trade reasons.

John Willis had two iron tea clippers built in 1870 by Maudsley, Sons & Field, London, using the lines of *The Tweed* and the same below-water model as the *Cutty Sark*. These two English-built iron sisters of the famous Clyde-built *Cutty Sark* were named the *Black Adder* and the *Hallowe'en*. The official measurements of these three presumably sister ships are set forth comparatively herewith:

| Name of Ship | Year Built | Builder | Construction | Gross Tonnage | Net Tonnage | Tonnage under Deck | Length <i>Feet</i> | Beam <i>Feet</i> | Depth <i>Feet</i> |
|--------------|------------|-------------------------|--------------|---------------|-------------|--------------------|-----------------------|---------------------|----------------------|
| CUTTY SARK | 1869 | Scott & Linton, Glasgow | Composite | 963 | 921 | 892 | 212.4 | 36 | 21 |
| BLACK ADDER | 1870 | Maudsley, London | Iron | 970 | 917 | 872 | 216.5 | 35.2 | 20.4 |
| HALLOWE'EN | 1870 | Maudsley, London | Iron | 971 | 920 | 873 | 216.5 | 35.2 | 20.4 |

The Maudsley Company, of London, was primarily a marine engineering firm and knew but little about building and rigging sailing craft. The *Black Adder*, launched in March 1870, was unfortunate from the start, for she was dismasted on her first voyage. After a series of discouraging experiences, she returned to London November 17, 1871, and the underwriters refused to pay damage claims on the ground that the ship had been sent to sea in an unseaworthy condition "because the cheeks of her masts had been secured with tap screws instead of rivets." The underwriters were supported by the courts, and the owner was engaged for some eighteen months in litigation with the builders. Up to the nineties, when the Willis fleet was sold, the *Black Adder* went on from year to year, "always just escaping destruction in spite of numerous mishaps." The ship participated in the Australian wool fleet, sailing during the winters of 1886-1887 and 1888-1889. On the first of these runs, her time of 119 days was the slowest but one of a fleet of twenty-five (the *Cutty Sark* made the passage in 72 days). On the 1888-1889 run, the *Black Adder* made a passage of 90 days as against the *Cutty Sark's* 84 days, and of twenty-seven ships making wool runs, nine of them made better time than the *Black Adder*.

The *Hallowe'en*, after an unfortunate experience requiring her to put back and discharge her cargo at the start of her maiden voyage (a run to Sydney), made a splendid record as a fast sailer and proved to have "a remarkable turn of speed, especially in light wind." She was no *Cutty Sark*, but was as lucky and as successful as her identical sister, the *Black Adder*, was unlucky and unsatisfactory. The *Hallowe'en*, which made a great record for an iron ship in the British China tea trade, apparently participated in only one of the sailings of the Australian wool clipper fleet in the seventies and eighties. In 1882 she left Sydney on November 14 and is credited with a run to London of 91 days, the stated date of arrival being February 13, 1883. On this passage, the *Hallowe'en* followed the iron wool clipper *Ben Cruachan* of 1,468 tons (built by Barclay, Curle & Company, Glasgow, in 1873) by one day throughout the entire passage—departure to arrival—which is an amazing similarity of sailing performance for two ships of very different size and model. The wool clipper *Miltiades* of 1,452 tons (built by Hood, of Aberdeen) sailed from Melbourne—as did the *Ben Cruachan*—the same day as the *Hallowe'en* left Sydney and arrived at London one day after the Willis clipper. The *Romanoff* of 1,226 tons (also built by Hood, of Aberdeen, in 1874) arrived at London the same day as the *Miltiades* (February 14), having sailed from Melbourne two days after her, or on November 16. Four ships, therefore, with departures from Australia within three days of each other (November 13-16, 1882), arrived at London within two days of each other (February 12-14, 1883) after passages of about three months' duration. There were thirty-eight ships participating in the 1882-1883 Australian wool race to England, and the honors went to the *Thermopylae* with a stated 75-day passage. The *Gladstone* of 1,159 tons (built by McMillan, Dumbarton, in 1873) was second with a run reported as 76 days; the *Mermerus* third with 81 days; the *Romanoff* fourth with 90 days; and the *Hallowe'en*, *Ben Cruachan*, and *Woollabra* (942 tons; built by Osburne, Sunderland, in 1875) were tied for fifth place, each being credited with passages of 91 days. Sixteen of the wool fleet passages of 1882-1883 were of over 100 days, and eight were of 110 days or over, the longest being that of the "fast

Blackwall frigate" *Parramatta* of 1,521 tons (built in 1866 by Laing, of Sunderland), which required 123 days for the passage.

For about a decade, the average length—as reported—of the homeward voyages from Australia of *Thermopylae* and *Cutty Sark* was 88 days and 82 days, respectively, and during this period the latter ship is credited with making the record voyage of 71 days ("to Dungeness") in the season of 1887-1888. During that winter, *Thermopylae* came second ("to London") with 79 days; after her were fifteen high-class Australian clippers that took between 80 and 96 days, while the average time of the passages of twenty-nine wool clippers that season was 95 days. There can be no doubt, therefore, that the British China tea clippers were considerably faster than the British-built Australian iron wool clippers and that the greater length of the latter failed to compensate, as far as speed alone was concerned, for their fuller section. In this connection, it should be noted that as long as the *Thermopylae* and *Cutty Sark* were employed in the China trade, their performances, although good, by no means outclassed the fleet and that neither made any outstandingly fast homeward voyage with the exception of the *Thermopylae's* first run in this service of 91 days in 1869. Following this, the *Thermopylae* averaged 107 days for four years (1870-1873) and 109.8 days for her last four years in the tea trade (1874-1878); whereas the *Cutty Sark* never did better than a passage of 107 days, averaged 114 days on her four runs of 1870-1873, and took about 120 days average during her last four years in the service (1874-1878). The speed of the winning clippers in the famous China-to-London tea race of 1866, which ended in practically a tie for first place between the *Ariel* and *Taeping*, works out, however, at a speed of only about 6.4 knots over the whole distance. The *Cutty Sark*, on her record voyage home from Australia in 71 days, was able to average more than 8 knots, but owing to the totally different conditions of wind and weather, no comparison between speeds in the China and Australia trades can afford any test of the sailing capabilities of different ships.

The MERMERUS, SALAMIS, and SAMUEL PLIMSOLL — Three "Top-Flight" British-Australian Iron Wool Clippers

The *Mermerus* was "Carmichael's superb wool clipper." It has been written of her by a British marine authority, "This beautiful ship was one of the finest and most successful of all iron wool clippers, and as a specimen of an iron sailing vessel she could hardly be beaten, either for looks, speed, or seaworthiness." It was said that the *Mermerus* carried a cargo of 10,000 bales of wool, "representing the fleeces of a million sheep and worth £130,000." Mr. Young, of the Australian Mortgage Land and Finance Company, considered this vessel "the most satisfactory ship in the wool trade." Mr. John Sanderson, a well-known Melbourne merchant, remarked, "The *Mermerus* is a wonderful ship. I can always depend on the *Mermerus*." It has been written of this popular clipper, "She never made a bad voyage, and the regularity with which she arrived each year in time for the February wool sales caused her to merit unusual confidence and receive generally the most outspoken praise." The *Mermerus* was sold to the Russians in 1898. On February 4, 1902, she arrived at Port Adelaide only 75 days out from Cardiff, and in 1904 she made the best passage to Britain from the antipodes for the year, her time from Adelaide to the Wight being claimed as only 69 days. In December 1909, the *Mermerus* was stranded in fog near Christiansand; she was refloated, but was evidently very badly damaged and on April 28, 1910, was sold to shipbreakers.

The *Salamis* was an "out-and-out" racer; she was designed to be "a slightly enlarged *Thermopylae* in iron." It was expected that with the same beam and longer ends she would

be faster than the composite record-maker; but, like many other vessels lengthened in design to obtain greater speed than that of a known vessel, she did not realize the hopes of her builders. However, it is said by British authorities that the *Salamis* was one of the "most beautiful ships ever launched and without doubt the fastest of all Thompson's iron ships." The *Salamis* set more canvas than the *Thermopylae*. She had a tremendous sail plan and a full suit of stunsails and other flying kites. It is said that she was "the last word" and "the extreme in spread of canvas." Her six main yards measured 81, 72, 64, 57, 49, and 37 ft., respectively, and the ship was only 36 ft. beam and of 1,079 tons. Built in 1875, she followed the *Samuel Plimsoll* by two years, the *Mermerus* by three years, the *Cutty Sark* by six years, and the *Thermopylae* by seven years. The *Salamis* was to a certain extent unluckily timed, for by 1875 steamers had taken a firm hold on the tea trade and clippers had been driven into other services or had to content themselves with taking business at a cut rate. In the tea trade, she was doomed, but as a wool clipper the *Salamis* set up a good record. It is said that her average time of passage in the Britain-Melbourne service for thirteen consecutive outbound voyages was 75 days, pilot to pilot. The average of all her outward passages for twenty years is given as only 77 days. Homebound, she averaged (as reported) 87 days for eighteen consecutive wool passages from Melbourne to London, which is the record for iron ships. When the Aberdeen White Star Line sold its sailing ships, the *Salamis* was bought by the Norwegians, who turned her into a bark. After many years of humdrum service, she was wrecked May 20, 1905, when thirty years old, on Malden Island in the South Pacific.

The *Samuel Plimsoll* has been described as "a satisfactory, good ship and one of the best of Thompson's ships in speed, appearance, and in demonstrated sea qualities." She was the third iron ship built for the Aberdeen White Star Line. From the first, the *Samuel Plimsoll* proved herself fast, and she gradually gained an enviable reputation for reliability and uniformity. We find in the records of the passages of the Australian wool fleet from 1873-1874 to 1889-1890 that, year after year, the *Samuel Plimsoll* was always "on the job" and for the seventeen-year period never missed a trip or experienced a bad voyage. The ship distinguished herself for consistently good passages, and she obtained a reputation with shippers for reliability because of her uniformly excellent runs between ports. This is surprising, for the *Samuel Plimsoll* had defects in her lower rigging; she was frequently dismasted and from a seafaring man's point of view was unlucky. Nevertheless, she had speed enough to overcome all handicaps of defective rigging and even distinguished herself by fast runs made in bad weather and under conditions where better-rigged ships could have been more safely driven. Moreover, she seemingly had an able and resourceful command, for under improvised jury rig she made good time.

The *Samuel Plimsoll* made good sailing runs on consecutive days as follows:

| Year | Distance Miles | Number of Days | Day's Run | | |
|------|----------------|----------------|-----------|---------|---------|
| | | | Maximum | Minimum | Average |
| 1876 | 2,247 | 7 | 348 | 264 | 321 |
| 1883 | 3,614 | 13 | 337 | 245 | 278 |
| 1885 | 4,021 | 15 | 314 | 235 | 268 |

Notwithstanding the increasing length of these long-period fast runs as the years advanced, the *Samuel Plimsoll*, like all other vessels in the Australian service, made longer passages in the wool fleet as she grew older. This may have been due to economic conditions, less expenditure in conditioning, taking fewer chances in heavy blows, deeper lading, etc. In 1899, after twenty-six years of good service, the *Samuel Plimsoll* caught fire in the Thames and had to be scuttled. After being raised and repaired, she was sold to Savill, who sent her out to Australia and ran her until 1902. She was then dismantled and so damaged on the passage out to Port Chalmers that it was decided not to repair her. She was subsequently towed to Sydney from New Zealand and later taken to Western Australia, where she was converted into a coal barge.

The *Samuel Plimsoll* was named after a man who, at the time, was receiving "broadside after broadside" of abuse in shipping circles and yet, today, is counted as one of the greatest, if not the greatest, benefactor of merchant seamen and of all who travel upon the Seven Seas. Samuel Plimsoll (1824-1898) was responsible for the load-line mark (the Plimsoll mark) that appears on the side of every British merchant ship to indicate the legal limit of submergence; it operates to prevent overloading of vessels and is intelligently graduated to cover the various seas and seasons of the year.

The Outstanding British-Australian Iron Wool Clippers THOMAS STEPHENS and PATRIARCH

Another vessel of particular quality was the *Thomas Stephens*, an iron clipper of 1,507 tons, constructed in 1869—the same year as the *Cussy Sark*. She was built by Potter, of Liverpool, for T. Stephens & Sons and was 263 ft. long, 38.2 ft. beam, and 23.1 ft. deep. The *Thomas Stephens* was described by the British as "one of the best known ships of her day, one of the tallest and fastest ships afloat, and a very successful ship financially." It was also said of her, "The *Thomas Stephens* is the most up-to-date and perfectly appointed iron passenger sailing ship built in England." In the seventies, on her first four voyages in the wool trade, the "*Stephens*" averaged 92 days, with her best passage 89 days. In the last half of the eighties, the ship had evidently slowed up, for she averaged 105½ days (best run, 100 days; slowest run, 111 days). In 1875, when engaged in the Australian packet service, the *Thomas Stephens* ran 1,000 nautical miles in seventy hours and, it is claimed, 256 miles in sixteen hours—an average speed of 16 knots per hour. Moreover, the "*Stephens*" was a lucky ship and never had a mishap or serious accident until, in her later years, after she had been cut down in spars and sails and, admittedly, was being "run cheaply." In 1896, in company with the *Thermopylae*, she was sold to the Portuguese Government. The *Thomas Stephens* was sent to the United States in 1915 during the war, when tonnage was scarce, and on her return voyage in January 1916 was torpedoed by the Germans.

Another Australian wool clipper worthy of special comment is the *Patriarch*. This vessel was outstanding among the twenty-eight sailing ships built in Britain in 1869, of which thirteen were built of iron and the balance of composite, or transitional, construction. The *Patriarch* was the first iron ship of the Aberdeen White Star Line, owner of the *Thermopylae*, and her builder, Hood, of Aberdeen, claimed that she was "the finest iron ship in the world." She was a fairly dry vessel for her type, and it is said that during her twenty-nine years of service under the British merchant flag "she never had a bad accident and never made a bad passage." The *Patriarch* was of 1,339 tons register; 222.1 ft. long, 38.1 ft. beam, and 22.3 ft. deep. Her average homeward-bound passage in the wool fleet, where she participated in fourteen annual runs from 1875-1890, as reported, occupied 86.3 days (minimum, 84 days—twice; maximum, 111 days), and she generally went out in about 80 days. The *Patriarch* is credited with having sailed 366 miles in one day on the Australian run and 2,060 miles in seven consecutive days—an average of 294 miles per day. Another ship of the same line, in the same service, that made an outstandingly fast run was the composite clipper *Centurion* (965 tons), which, in 1870, is said to have covered 1,064 nautical miles in three days—an average of 348 miles per day, with a maximum day's run of 360 miles. This means about seventy-two hours' steady sailing at an average speed of approximately 14½ knots per hour. In 1898 the *Patriarch* was sold to the Norwegians. On

February 23, 1912, when forty-three years old, she went ashore on Cape Corrientes, south of the River Plate, and was a total loss.

A British writer has said that "ships such as the *Cutty Sark*, *Patriarch*, and *Thomas Stephens* were never duplicated"; that they stand out as special ships, "touched by the wand of genius and, therefore, beyond all slavish copying." This may be true, but why omit the name of the *Thermopylae*, and, while admitting the recognition due the *Cutty Sark*, why place the *Patriarch* and *Thomas Stephens* ahead of the *Mermerus*, *Salamis*, or the reliable *Samuel Plimsoll*! Consistency of performance, with honest, steady achievement, is as much the product of genius as more flashy, briefer, and less worthy or profitable attainment. Again, why consider only British craft! In practical excellence of design and construction, did not the *Sea Witch*, *Surprise*, *Oriental*, *N. B. Palmer*, *Flying Cloud*, *Comet*, *Flying Fish*, *Swordfish*, *Westward Ho*, *James Baines*, *Lightning*, *Red Jacket*, and a host of the early American-built clippers; the *Andrew Jackson*, which at the end of the American clipper ship decade, in one year, established all-time speed records in westbound passages across the Atlantic and around the Horn to California; the *Young America* and *David Crockett* (built in 1853), with their speed and thirty years of wonderful service in the most severe and hazardous trade route of the world; and, later, the Bath-built *Down Easter*, fast sailer, and big carrier *Henry B. Hyde* (all of which ships were built of wood in America) show fully as much genius as any of the British-built composite or iron China or Australia clippers—or more! The early American-built clippers showed novelty and courage and blazed the trail; whereas the fast British sailers were merely attempts to copy the initiative, superiority, and genius of American wood shipbuilders and to adapt the principles practically demonstrated by New York and New England naval architects to the peculiar conditions of British deep-sea trade. For real merit in fighting both a turbulent and unfriendly nature and most adverse and heartbreaking economic conditions, it is probable that no sailing vessels ever built have approached the excellency of the American wood *Down Easters*, built primarily for the Cape Horn trade.

The Rivalry of the Aberdeen Iron Clippers PERICLES and BRILLIANT

Among the many fine-lined sailing ships built in Britain for the Australian trade, there were two vessels, the *Brilliant* and *Pericles*, that, year after year, engaged in some of the most exciting races on record. The rivalry of the *Pericles* and *Brilliant* can be compared with that between the *Cutty Sark* and *Thermopylae*. The ships were built in the same year (1877) by rival yards in Aberdeen, the *Pericles* by Hood for George Thompson's Aberdeen Line and the *Brilliant* in the neighboring yard of J. Duthie, Sons & Company to run in its own service. Both were full-rigged iron ships and generally similar in outward detail. The *Pericles*, of 1,671 gross tons, had a length of 259 ft. 6 in., a beam of 39 ft. 4 in., and a depth of hold of 23 ft. 6 in. The *Brilliant*, with a gross tonnage of 1,668 tons, had a length of 254 ft. 8 in., a beam of 39 ft. 7 in., and a depth of 24 ft. 2 in. Both ships were favorites with the wool shippers at Sydney. The *Brilliant*, which was particularly pleasing to the eye, was referred to on the Thames as the "Australian yacht" and in Australian waters as "Duthie's yacht." When outward bound in 1887, she was dismasted in Lat. 41° S. and had to be jury-rigged. This was done so efficiently and extensively that she actually made a day's run of 270 miles in that condition, which has been claimed as a record for sailing any ship under improvised jury rig. The *Brilliant* was sold to the Italians in 1904 and converted to a bark. She was sunk by thirty shells from a German submarine off Cape Creux on

August 25, 1916, when thirty-nine years old and bound from Baltimore, U.S.A., to Genoa, Italy.

The *Pericles* was sold to Norwegians in 1904, when twenty-seven years old, and changed owners several times thereafter. It is said that during the first World War she made "big money" for her owners in service "outside of the danger zone." She was finally broken up at Kiel, Germany, in August 1923, after forty-six years of service.

*The MELBOURNE, a Popular British-Australian Liner Built in 1875
and the Last of the Blackwall Frigate-like Sailing Ships*

The *Melbourne*—later named *Macquarie*—was not an "out-and-out" clipper, but was a well-modeled and efficiently sparred ship. Built in 1875, she measured 1,857 tons; 269.8 ft. long, 40.1 ft. beam, and 23.7 ft. deep. She was the last of Green's Blackwall Line of sailing ships. The *Melbourne* was designed to be "the finest, strongest, and most comfortable passenger sailing ship afloat." Later, she became noted for dry decks, staunch construction, and good sailing rather than for speed records between ports, although on occasions, when driven and when conditions were propitious, the *Melbourne* showed good speed. On her second voyage to Australia, she made the run out—from "the Start to Cape Otway"—in 75½ days. This could not be considered remarkable for total time, but after "a tedious drag through the northeast trades, which were exceedingly light," 22 days in the tropics, and "so little easting in the southeast trades that the vessel had to tack three times before clearing the South American Coast," the meridian of Cape Agulhas was crossed August 10 (55 days out, 27 days from the equator, 39 days from Cancer, and 17 days from Capricorn); after that the *Melbourne* "had it all her own way, strong, fair winds prevailing." The published records show that, in running down the easting, she made the amazing distance of 5,129 nautical miles in seventeen consecutive days (an average of 302 miles per day), the best day's runs being 374, 365, and 352 miles a day.

Influenced primarily, it would seem, by this record, Captain Clark, in THE CLIPPER SHIP ERA, has said that the *Melbourne* was "perhaps the fastest ship ever built in Great Britain." This enthusiastic statement is not borne out by the facts covering a period of time. Unusually favorable conditions of wind and sea are necessary for any ship to make a speed record, and in addition to such natural influences affected by geographic location, season of the year, etc., such factors as draft, trim, amount and nature of cargo, condition of ship's bottom, and the quality of the command and of the crew need to be given consideration. The *Melbourne* shows in only four of the famous Australia-to-Britain wool fleet races, and her performance in these runs was only "average" and assuredly does not warrant bestowing upon her the title of "Britain's fastest ship."

| Wool Fleet Run | Time of MELBOURNE'S Passage | Number of Ships in Run | Average Passage of All Ships | Fastest Passage | Average of Four Best Passages |
|----------------|-----------------------------|------------------------|------------------------------|-----------------|-------------------------------|
| | <i>Days</i> | | <i>Days</i> | <i>Days</i> | <i>Days</i> |
| 1878-1879 | 90 | 31 | 92.91 | 80 | 81.25 |
| 1880-1881 | 94 | 29 | 96.62 | 79 | 82.00 |
| 1882-1883 | 103 | 38 | 99.29 | 75 | 80.50 |
| 1883-1884 | 96 | 31 | 96.51 | 82 | 84.50 |

Prominent British-Australian Iron Clippers Built in the Eighties—
CLAN MACKENZIE, WENDUR, MACHRIHANISH, and
LOCH TORRIDON

The *Clan Mackenzie*, built in 1882 by R. Duncan & Company, of Glasgow, was a full-rigged iron ship and "the clipper of Dunlop's Clans." She was of 1,597 tons (259.5 ft. long, 38.2 ft. beam, 23.1 ft. deep) and has been described by British historians as an "out-and-out" clipper and also as "the heaviest rigged vessel of her time." It is said that she covered 1,000 nautical miles in three days' sailing (an average speed of 13.9 knots per hour for seventy-two consecutive hours) and that her best reported day's run was 360 miles (an average speed of 15 knots per hour for twenty-four consecutive hours). In 1885, when bound, deep laden, from Britain to Australia under the command of Capt. George R. Harris, she fell in company with the *Thermopylae*, also outbound to the antipodes. Conditions of wind and sea being exactly to the liking of the *Clan Mackenzie*, "she walked away from the *Thermopylae* and left her out of sight astern." Captain Allan of the *Thermopylae*, commenting on the episode, said that the direction and force of wind and the nature and intensity of sea were all well suited to a ship of the design and size of the *Clan Mackenzie* and that under such ideal conditions she sailed splendidly. He added, "The *Clan Mackenzie* can sail but I should like to meet her in more moderate weather." However, he further stated that he had never seen any vessel pass the *Thermopylae* since he had been in her as did the *Clan Mackenzie*. This speed queen of the British "iron clippers of the eighties," when sailing under the Norwegian flag as the *Majorka*, was sunk by a German submarine in August 1917.

It should be borne in mind that the *Clan Mackenzie* was 70 per cent larger than the *Thermopylae* when this meeting of a very fast iron clipper of the eighties and, with the possible exception of the *Cutty Sark*, the fastest composite clipper of the sixties took place. Moreover, the spars and sail spread of the *Thermopylae* had been reduced from what they were in the days of her great glory. Many a large vessel, with wind and sea to her liking, would sail past a smaller clipper only to find that the smaller ship would leave her far astern when wind and sea were moderate. One of the greatest virtues of the small but loftily sparred and big-canvased tea clippers was their ability to make mileage in the doldrums, where larger vessels could barely hold steerage way and acted as if they were anchored. In comparing the logs of sailing vessels in recorded races, it is interesting to read how one of the contestants would pass a rival two, three, or more times on a long 60- or 90-day run, each time leaving her hull down astern, and yet, with these unquestioned sailing triumphs obtained under certain conditions of wind and sea, would not make the best time to port of destination or would arrive only a few hours before her "outsailed" rival.

A fast British iron sailing vessel of medium clipper type built in the eighties was the *Wendur*, constructed by Connell in 1884 for A. Mackay. She is generally admitted to have been one of the fastest four-masted ships ever built, having been well sparred and balanced. The *Wendur* was of 1,982 tons; 292.7 ft. long, 42 ft. beam, and 23.8 ft. deep. In 1894, under Captain Whitson, she made a passage from Frederickstadt to Melbourne in the splendid time of 76 days from Dunnet Head and, when in the South Pacific, averaged 250 miles per day for three weeks; for the week ending September 1, her average day's run was 270 nautical miles. In 1895 she sailed from the longitude of the Cape of Good Hope to Melbourne, with an average run of 280 miles a day for twenty consecutive days, and she was only 14 days 18 hours in sailing from the Cape meridian to the Leeuwin; her best day's runs were 332 and 327 miles. In January 1929, this vessel is credited with a record passage of 29 days from Newcastle, N.S.W., to Valparaiso, running a very close race with the fast

ship *Loch Torridon*, which she beat by some two or three hours. Both of these sailing vessels made the run in three days' less time than the steamer record of that day. On this run, the *Wendur* traveled 2,304 nautical miles in eight days (January 14-21 inclusive), an average of 288 miles per day, with a maximum of 330 and a minimum of 253 miles; earlier in the voyage, she covered 2,274 miles in nine days (January 4-11 inclusive, with a Meridian Day), an average of 253 miles per day, with a maximum of 288 and a minimum of 230 miles.

The British iron medium clipper *Machrihanish*, built by Duncan on the Clyde in 1883, was "the clipper" of Hugh Hogarth's fleet. She was of 1,699 tons; 264.9 ft. long, 39.8 ft. beam, and 23.5 ft. deep. During a run from Cape Town, South Africa, to Wellington, New Zealand, she covered 2,628 nautical miles in nine days, an average of 298 miles per day, her best day's run being 320 miles.

The *Loch Torridon* (2,000 tons), which sailed what was virtually a dead-heat 29-day race with the *Wendur* in the South Pacific in January 1929 (previously mentioned), was an iron clipper—a four-masted shipentine—built in 1881 by Barclay, Curle & Company, of Glasgow, for General Shipping Company (Aitken, Lilburn & Company). This vessel, which was 287.4 ft. long, 42.6 ft. beam, and 24 ft. deep, is generally believed to have been "the best and fastest of the British iron four-masted barques." In 1891-1892, she took her first wool cargo from Australia to Britain and made a passage of 81 days to the Lizard and 83 days to port, beating all other vessels on that season's run. On July 30, 1892, on a voyage out to the antipodes, the *Loch Torridon*, with 350 tons of flints and a quantity of "London rubbish" for stiffening, left Gravesend for Australia. She is credited with a passage of 69 days, pilot to pilot, and 73 days, port to port. Her best week's work was 2,073 nautical miles (sometimes referred to as 2,119 miles), and in eight consecutive days she ran 2,375 miles—an average of 297 miles per day (maximum, 341 miles; minimum, 270 miles). When thirty-one years old, this fast sailer was sold to the Russians and three years later, in 1915, was dismantled and foundered near the entrance to the English Channel.

The Australian Wheat Races of the Twentieth Century—the Last Trade for Old Windjammers

The Australian trade route developed by Americans in the early 1850's from North Atlantic ports to Australia, which rounded South Africa and from Australia home ran by way of Cape Horn, saw the last service of merchant sail on the Seven Seas. (This complete voyage was an encirclement of the globe, a good part of the sailing being eastbound in the Roaring Forties—with strong, favorable westerly winds prevailing.) Early in the twentieth century, sail was doomed, as it could no longer compete with steam. For many years, the Alaskan salmon packing trade utilized old sailing ships, buying and operating them cheaply; but even after this trade collapsed, old sailing ships were to be found participating in the annual wheat races from South Australia to Europe. As San Francisco in the seventies and eighties, during the post-clipper ship era in the United States (following the completion of the transcontinental railroad), survived as a port and shipped grain to Britain and many parts of the world, so Australia survived other booms and eras of sail and other cargoes and even up to the commencement of the second World War of the twentieth century, in a fleet of old and deteriorating windjammers (all foreign owned and generally under the Finnish flag), shipped grain to Britain and other European ports. An annual wheat race—the shadow of the glorious Chinese tea and Australian wool races of the fifties, sixties,

and seventies—persisted up to 1939. Each year for a decade or more threatened to be the last as the ships grew older and more decrepit and since there must be a limit to the ignoring of needed repairs and to how low operating expense can be cut even under a foreign flag, with big ships being "bought for a song" and operated by scalpers and with but little capital investment.

Capt. Gustav Erikson, of the Aland Islands, Finland, picked up, from time to time, old sailing ships that could no longer be operated at a profit (following established economic laws of operation and accounting) in any trade route of the world. These windjammers, saved from the shipbreaker and bought at junk value, were manned by very low-paid, youthful adventurers, who did not go to sea as a means of livelihood (and, therefore, to whom wages were not important). No depreciation was charged, repairs were cut to the bone, and a ship was not expected to give many years of service. Insurance was naturally high, but freight rates for wheat from Australia to Europe were made low to attract business. Although the transport of the wheat cargo to the port of destination might take anywhere from 90 to 150 days (or the cargo might never arrive), the shipment by sailing craft held advantages to the wheat growers; they benefited by lower freight rates, and the ships were used as granaries for long periods of time and saved storage and handling costs. In 1928 twenty-five of the world's surviving square-riggers took part in the wheat "race" from Australia to Europe. In 1939 thirteen windjammers—most of which were "Captain Erikson's junk-pile ships"—took part in transporting some fifty thousand tons of wheat from South Australia to Europe; three of the vessels were forty-six years old, and one of them was a seventeen-year-old training ship fitted with an auxiliary steam engine. During the years of the "old-timer" Australian wheat races, many of the ships were able to operate in the trade by obtaining cargoes of Scandinavian lumber for a South African port on the outbound run; thus there was a substantial reduction in the cost of the outward passage, which, otherwise, had to be made in ballast, with all operating expense running out to Australia having to be added to the cost of the homeward passage, on which revenue-producing cargo was carried.

The following newspaper item from Melbourne, Australia, dated April 1938 and headed, "Sail Ships in Race Across the World—Thirteen Windjammers to Transport Grain from the Antipodes," is of interest:

Laden with wheat for the United Kingdom, thirteen windjammers will race from South Australia this year along the routes that were used by the sailing ships of a century ago. Two have already left Spencer Gulf with about 8,000 tons of wheat, and the remaining vessels will carry 50,000 tons. Practically all are four-masted barks.

The number of windjammers visiting Australia is steadily diminishing. In the season of 1920-21 thirty-six large sailing vessels entered Australian ports for wheat. By 1931 the fleet had diminished to twenty-six, and this year only thirteen are in the race. Two great ships are missing—the *C. B. Pedersen*, which was lost in a collision while homeward bound last year, and the four-masted bark *Pamir*, which has been diverted to Noumea, in New Caledonia, where she will load nickel ore for Europe after having delivered a cargo of guano at Auckland, N. Z.

But freights at 42s 6d a ton are still high enough to encourage Captain Gustaf Eriksen, the Finnish shipowner, who is the world's principal proprietor

of windjammers, to send ships to Australia, though the inward and outward voyages take 200 days or more. These racing ships will try to reach their ports of destination in a hundred days or so—although their skippers say ninety.

In all Australian ports tremendous cargoes of wheat are being loaded just now by overseas freighters. Four ships took on 28,000 tons in one day at Port Melbourne. Unusually heavy sales to Russia's Siberian stronghold, Vladivostok, have made the Soviet Australia's best wheat customer outside the United Kingdom this season.

It is more economical for the Soviet to buy wheat from Australia and transport it by sea at the prevailing low freight to her Pacific Coast than to carry it to Siberia by rail from her western wheat-growing areas. The Soviet has bought from Australia at 33s 6d to 34s a quarter, but she is exporting wheat through the Mediterranean at 38s to 40s. Freight from Australia to Vladivostok is only about 25s a ton; to the United Kingdom it is 32s.

The last square-rigged sailing ship owned and kept in service—for emotional reasons—in the United States was the *Tusitala*. She was sold to shipbreakers in the spring of 1938

and, later, was acquired by the U.S. Marine Commission for use in training sailors for the American mercantile marine. The *Tusitala*, launched in September 1883 as the *Inveruglas* of 1,747 tons, was the last ship built by Steele, of Greenock, Scotland, and she was in service in the Australian wool trade. As that business became unprofitable for "legitimate ships legitimately operated," she was sold by her original owners and during her career under several flags has been known as the *Sierra Lucena* (1,684 tons), *Sophie* (Norwegian—in 1904), and since 1923 as the American-owned *Tusitala* (1,621 tons).

XX.

THE MANILA TRADE

*Salem and Arrivals from Manila from the ASTREA in 1796 to the
DRAGON in 1858, with Salem-owned Ships Loading and
Discharging in Deep-Water Ports Thereafter*

THE SHIP *Astrea* (II) of 321 tons, built at Bradford, Mass., in 1795 for Elias H. Derby et al., of Salem, and commanded by Capt. Henry Prince, is generally credited with being "the first American vessel to visit Manila, in 1796." The authority consists solely of Salem records, and that she was the first Salem vessel to enter Manila Harbor is unquestioned; but it is probable that other American vessels had visited the Philippines and Manila before her, as an American agent was resident at Manila when the *Astrea* arrived there in 1796. Nathaniel Bowditch, the great mathematician and navigator, was supercargo on the *Astrea* during this voyage, and he kept a journal, which has been preserved. Upon her return to Salem in May 1797, the *Astrea* had a cargo aboard of 750,000 lbs. of sugar, 63,695 lbs. of pepper, and 29,637 lbs. of indigo, upon which, according to customhouse records, she paid a duty of \$24,020.

The last arrival at Salem from Manila was the bark *Dragon* of 289 tons, built at Newbury in 1850. This vessel, with Benjamin A., John A., and Samuel West, James Chamberlain, and Thomas C. Dunn as owners and the latter in command of her, entered at Salem in July 1858 with a cargo of hemp consigned to Benjamin A. West. Although this was the last vessel to unload a cargo at Salem from Manila, Salem merchants continued the trade for several years, their vessels sailing from and discharging their cargoes at other ports—generally Boston, which held great advantages over Salem as a deep-sea port. Among the Salem merchants active in continued trading with Manila were the Silsbees, Pickman & Allen, Benjamin W. Stone & Bro., Tucker Daland, Henry L. Williams, and Henry Gardner. Between the arrival at Salem of the *Astrea* in 1797 and the *Dragon* in 1858, there were eighty-two entries from Manila, and thirty of these occurred between 1828 and 1839. For a long term of years, Salem was the most active American port engaged in the Manila trade. The following ships entered at Salem with sugar and indigo cargoes from Manila from May 1799 to June 1806:

| Vessel | Ton- nage | Date of Entry | Master | Consigned to | Cargo | Duty Paid |
|------------------|--------------|------------------|---------------------|---|--|--------------|
| Ship FOLANSBE | 269 | May 1799 | Jonathan Mason, Jr. | (also reported as FOL- LANSBEE, built at Salisbury, 1797) | Indigo and sugar | |
| Ship LAUREL | 425 | July 1801 | Daniel Sage | William Gray | 115,133 lbs. indigo, 124,683 lbs. sugar, etc. | \$32,382 |
| Ship FAME | 363 | Mar. 1804 | Jeremiah Briggs | Jacob Crowninshield et al. | Sugar and indigo | |

(Continued on next page)

| Vessel | Ton- nage | Date of Entry | Master | Consigned to | Cargo | Duty Paid |
|----------------|--------------|------------------|------------------|-----------------------|---|--------------|
| Ship ESSEX | 256 | May 1805 | Joseph Orne | William Orne | Sugar and indigo | \$18,144 |
| Ship HORACE | 382 | May 1806 | John Parker | William Gray | Sugar, indigo, etc. | |
| Ship EXETER | 291 | June 1806 | Thomas B. Osgood | Benjamin Pickman, Jr. | 702,064 lbs. sugar; 14,589 lbs. indigo | \$23,526 |

The first vessel to fly the American flag at Guam was the Salem bark (or brigantine) *Lydia*, which was on a trading voyage. She sailed from Manila on October 20, 1801, under charter to the Spanish Government to carry a new governor, his family, suite, belongings and supplies to Guam. During the years of the embargo and the War of 1812, or from June 1806 to May 1816 (a period of about ten years), it would seem that there was no entry at Salem from Manila. Among the arrivals recorded during the period 1816-1838 were the following vessels bringing cargoes from Manila to Salem:

| Vessel | Ton- nage | Date of Entry | Master | Consigned to |
|----------------------|--------------|------------------|----------------------|---------------------|
| Ship ENDEAVOR | 234 | May 1816 | Timothy Brant | Nathan Robinson |
| Ship PERSEVERANCE | 241 | May 1820 | Samuel Hodgdon | Willard Peele |
| Brig ANN | 204 | July 1824 | Charles Millett | Henry Prince |
| Brig PERU | 210 | 1824 | William Johnson, Jr. | Stephen C. Phillips |
| Ship ENDEAVOR | 234 | Sept. 1826 | James D. Gillis | Nathaniel Silsbee |
| Bark DERBY | 225 | Mar. 1827 | Allen Putnam | Stephen C. Phillips |
| Bark DERBY | 225 | Apr. 1829 | John H. Eagleston | Stephen C. Phillips |
| Ship MANDARIN | 295 | Mar. 1830 | William Osgood | Pickering Dodge |
| Brig CHARLES DOGGETT | 110 | 1832 | William Driver | Richard S. Rogers |
| Ship LOTOS | 296 | June 1832 | George W. Jenks | Pickering Dodge |
| Bark DERBY | 225 | July 1832 | J. W. Chever | Stephen C. Phillips |
| Ship SUMATRA | 287 | Nov. 1832 | Charles Roundy | Joseph Peabody |
| Ship BROOKLINE | 349 | Apr. 1837 | Charles H. Allen | Stephen C. Phillips |
| Ship ST. PAUL | 463 | Apr. 1838 | Joseph Winn, Jr. | Stephen C. Phillips |

The ship *Carolina* of 395 tons, built at Medford in 1836, was acquired by David Pingree and the Fabens' (Benjamin, Charles H., and Benjamin, Jr.), of Salem, and sent out to the East Indies. In April 1842, she arrived at Salem from Manila with Charles H. Fabens in command. After a change in Salem owners, but with David Pingree maintaining his part ownership, the vessel was sold in New York in 1845 for \$14,000 (about \$35 per ton) when nine years old.

*The Ship ST. PAUL, Owned by Stephen C. Phillips, Salem's
Most Consistent Manila Trader, 1835-1851*

The ship *St. Paul* of 463 tons (length 129 ft., beam 22 ft., depth 12 ft.) was built at Boston in 1833 and was purchased in 1835 by Capt. Stephen Phillips and his son Stephen Clarendon Phillips, of Salem, for the Manila trade. This vessel had been built for the New York-New Orleans-Liverpool triangular cotton trade and was a heavily built full-modeled ship and a large carrier. The *St. Paul* was the outstanding Salem ship in the Manila trade from the commencement of her first voyage in December 1835 to her loss in the Straits of

San Bernardino in December 1851, when on her fourteenth voyage. All of her passages were in the Manila trade and all Salem voyages except her maiden one, when she sailed from New York December 21, 1835, and returned to that port December 10, 1836. On her second voyage, the *St. Paul* sailed from New York for Mobile, took cotton to Liverpool, and went thence to Manila, where she arrived with 424,462 lbs. of sugar and other merchandise on April 29, 1838, and paid custom duties of \$9,295. On her third voyage, the *St. Paul* sailed from Salem June 3, 1838, for Manila and returned home on April 8, 1839, with a cargo of 5,145 bags of sugar, 2,568 bales of hemp, and other merchandise, on which she paid custom duties of \$12,075. Her other ten completed voyages can be briefly summarized as follows:

| Voyage No. | Left Salem | Left Manila | Arrived Salem | Duties Paid | Voyage No. | Left Salem | Left Manila | Arrived Salem | Duties Paid |
|------------|----------------|---------------|---------------|-------------|------------|---------------|---------------|---------------|-------------|
| 4 | May 25, 1839 | Nov. 21, 1839 | Apr. 4, 1840 | \$11,893 | 9 | Apr. 27, 1845 | Oct. 28, 1845 | Mar. 12, 1846 | \$22,195 |
| 5 | May 28, 1840 | Nov. 30, 1840 | July 7, 1841 | 10,204 | 10 | May 15, 1846 | Nov. 1, 1846 | Mar. 19, 1847 | 10,718 |
| 6 | Sept. 11, 1841 | Mar. 17, 1842 | Aug. 8, 1842 | 10,517 | 11 | May 9, 1847 | Nov. 19, 1847 | Apr. 6, 1848 | 15,632 |
| 7 | Jan. 27, 1843 | July 4, 1843 | Jan. 8, 1844 | 21,721 | 12 | May 8, 1848 | Nov. 19, 1848 | Mar. 26, 1849 | 12,903 |
| 8 | Apr. 24, 1844 | Nov. 3, 1844 | Mar. 17, 1845 | 20,267 | 13 | Nov. 3, 1849 | Aug. 9, 1850 | Jan. 7, 1851 | 15,847 |

The *St. Paul* sailed from Salem for the last time on July 5, 1851, bound for Manila, but went ashore December 9, 1851, on Masbate Island, Straits of San Bernardino, and was lost. All on board were saved.

Salem's Prominent East Indies and Manila Shipping Merchants—Stones, Silsbees, Pickmans, Sanders, and Allen—1798-1898

A partnership of Salem shipping merchants consisting of Robert Stone and his sons; David Leavitt Pickman and his son; Nathaniel Silsbee, with his two brothers, son, and nephews; and George T. Sanders, generally known as the commercial house of Stone, Pickman & Silsbees, was established in 1798 and continued until 1860, when the Stones withdrew to operate independently as Benj. W. Stone & Bro. The Silsbee and Pickman families, with George H. Allen (of Salem and Manchester—the son of Capt. Charles H. Allen), as Silsbee, Pickman & Allen continued until about the end of the century. These Salem merchants were greatly interested in the Manila trade from early in the nineteenth century until their withdrawal from business at "the end of sail," when the last surviving sailing ship in the Manila trade, the *Mindoro*, owned by the firm of Silsbee, Pickman & Allen, was sold in 1898 for conversion to a barge. The outstanding and largest vessels of the Silsbee, Pickman & Allen fleet were the *Sooloo*, *Mindoro*, *Formosa*, and *Panay* of from 784 to 1,252 tons, built at Boston (1861-1877).

When the Stones withdrew from business association with the Silsbees, Pickmans, and other Salem merchants, the ship *Shirley* of 910 tons, built at Medford in 1850, was transferred to Benj. W. Stone & Bro. in June 1860, and the ship *Sumatra* of 1,041 tons, built at Chelsea in 1856, was taken over by the Stones in 1861; both vessels were well known in the East Indian and Manila trade. The Stones sold the *Shirley* in 1872 and the *Sumatra* in 1874, both in San Francisco.

Benjamin W. Stone was particularly fond of his "big ship" *Highlander* (1,352 tons), built by Samuel Hall, East Boston, and designed as a "half clipper." This vessel, constructed for Sturgis, Clearman & Co. et al., of Boston, and launched in December 1868, was rather promptly sold to Benj. W. Stone & Bro., of Salem, for over \$100,000 (some reports say \$110,000). When she was registered in February 1869, the owners of record were Benjamin W. Stone, William Stone, Jr., and Joseph W. Stone, with Samuel J. Foster as master. In 1880 a half interest in this ship was reported to have changed hands for \$36,000, and the vessel was sold foreign at New York in 1888 for a price stated as \$25,000. The Germans operated her in the North Atlantic trade for several years, and she was sold in 1899 for conversion to a barge. Frederick C. Matthews says that the ship was sold at the end of 1893 "to parties in Amsterdam for the trifling figure of \$8,500," and after six years of operation in the Atlantic trade she was cut down to a barge. Her name disappeared from the register in 1904. Salem records show that she was lost off Fire Island on September 11, 1902, when in tow as a coal barge. The ship *Highlander* was conspicuous for the peculiar way in which she was operated by "old Ben. Stone" and for the long stays that she made at various ports visited. These long periods of lay-up were due to Stone's policy of not moving her unless he could get cargoes at attractive low prices, and he would not sell except at what he considered to be a good profit. Benjamin Stone and his brother were not shippers who competed with other shipowners for freights, but were merchants who followed the old tradition of buying, transporting (often storing), and selling their cargoes. At times they hawked a cargo from port to port in the Orient and then kept their ship idle while waiting for a drop in the market, so that they could buy a cargo (such as hemp in Manila) and take it to the United States and sell at a satisfactory profit after considering the cost of the ship, with depreciation, and the expense of handling and transport. On one occasion, the *Highlander* was idle at Hong Kong for about two years, and on another she was held at San Francisco from October 1881 to January 1885. It was said that Stone's tactics were particularly obnoxious to hemp traders; that "the old man was never in a hurry to buy or sell, and almost invariably he made the profits that he had originally estimated." The *Highlander* was the last surviving ship of Benj. W. Stone & Bro., and her last passage as an American ship was a run from Manila to New York with a cargo of hemp in 1886.

Clipper Ships in the Philippine Trade

As far as clipper ships in the fifties and sixties are concerned, the U.S.A.-Manila trade was primarily one-way traffic, Manila being used—as was China—by Cape Horners carrying goods (and passengers) out to California and by clippers running out to Australia for obtaining a cargo to carry back to the United States to save the economic burden on voyages of a return from the outbound destination in nonrevenue-producing ballast. A very few clippers were favorable toward Manila as a port to load for the last leg of the passage home and preferred it to Hong Kong, Shanghai, or Foochow.

The *Fearless* (1,183 tons), built at East Boston in 1853 from designs by Samuel H. Pook, was a Cape Horner, and of eleven voyages from East Coast U.S.A. ports to California, the ship returned direct to New York once, via Singapore and Batavia once, via Hong Kong three times, and via Manila six times. All passages to the East Indies were made in order to get a cargo to carry home. The six passages of the *Fearless* across the Pacific from San Francisco to Manila averaged 49 days, the slowest occupied 59 days, and the two fastest runs were made in 36 and 39 days, respectively, which is good sailing. Continuing, the

Fearless ran from Manila to Boston in both 1854 and 1855 in 86 days (within two days of the record); in 1856 she made the run in 95 days, in 1863 in 100 days, and in 1865 in 109 days—an average of 95 days for five passages to Boston. The length of the runs increased as the sail spread and crew of the ship were cut down in the interest of economy. In 1860 the *Fearless* made a passage from Manila to New York in 111 days, and the average length of all her six runs from the Philippines was a scant 98 days.

The *Aurora* (1,396 tons), built by John Taylor at Chelsea, Mass., in 1853 for Stone, Pickman, Silsbee & Allen, of Salem, during her career under the American flag (she was sold to the British in May 1863), made five homeward passages from the East Indies—all from Manila. Her departures were generally made during the unfavorable season, but in 1863 she ran from Manila to Boston in 101 days (78 days from Anjer), and in 1854 she went from Manila to New York in 103 days, being only 15 days to Anjer and 88 days from Anjer to her destination.

The medium clipper ship *Starlight* (1,153 tons), built at the Briggs yard, South Boston, in the winter of 1853-1854 to the order of Baker & Morrill, of Boston, was a Cape Horner and made nine passages from New York or Boston to San Francisco. Continuing her voyages, she made five runs to Manila in times varying from 43 to 50 days and, on the last leg of her homebound journey, made five passages from Manila to New York and Boston in 107, 113, 130, 114, and 123 days, respectively, an average of a scant 117½ days. The vessel is also credited with a rather slow passage from Manila to Queenstown in 124 days, and from there she proceeded to Bristol, England, to unload. In December 1864, the *Starlight* was sold while at San Francisco to the Peruvians to transport coolies from China to the guano deposits of Peru.

The Donald McKay-built extreme clipper *Flying Fish* of 1,505 tons, built in 1851, on her maiden voyage, went out to San Francisco in 100 days 6 hours, thence to Manila in 51 days, and made the run from Manila to New York in the slow time of 123 days (93 days from Anjer). In the next two years, she covered the last leg of her course home from Manila in 107 and 109 days, respectively, making the run from Anjer to Boston in 79 days in 1853 and to New York in 80 days in 1854. In 1857 the *Flying Fish* made a passage of 117 days from Manila to Boston (91 days from Anjer), and her average time of these four runs home from Manila was 114 days and from Anjer home, a scant 86 days.

The New York Webb-built clipper *Swordfish* (1,036 tons; built in 1851) made three passages from Manila to New York during the period 1854-1858 in 102, 101, and 107 days, respectively, an average of slightly over 103 days, which is good and uniform sailing. This speed, however, was not as fast as that recorded by the *Wizard* of 1,601 tons (built by Samuel Hall, East Boston, in 1853), which made three passages from Manila to New York during the years 1855-1861 in 98, 119, and 84 days, respectively, an average of slightly over 100 days. The 84-day passage made by the *Wizard* in 1861 is the record over the course.

The *Winged Arrow* (1,052 tons; built by Briggs at South Boston in 1852) made three passages home to Boston from Manila in 1854-1856 in 112, 101, and 116 days, respectively, an average of 109⅔ days. The run from Manila to Anjer averaged a little over 26 days (best, 25 days; slowest, 28 days); from Anjer to the Cape of Good Hope, 32 days (best, 30 days; slowest, 34 days); from Manila to the Cape, a strong 58 days (best, 55 days; slowest, 60 days); and from the Cape to Boston, a little over 51 days (best, 46 days; slowest, 56 days). The uniform sailing throughout each section of these three passages (China Sea, Indian Ocean, and the Atlantic) is evident.

The *Cyclone*, a medium clipper of 1,109 tons (built by Briggs at South Boston in 1853), on her third voyage, went from San Francisco to Manila in 43 days and thence to Boston in the slow time of 128 days. In 1862 and 1863, she ran from Manila to New York in 106 and 105 days, respectively, her average for the three passages being 113 days. The *Malay* (868 tons; built by John Taylor, Chelsea, Mass., in 1852) made a passage from Manila to

New York in 127 days in 1853, one in 117 days between the same ports in 1862, and another in 124 days in 1865—an average of a scant 123 days for the three passages—which is slow sailing.

The *Northern Light* of 1,021 tons, built by Briggs at South Boston in 1851 from designs by Samuel H. Pook, of Boston, did some good sailing over the course, particularly eastbound, for in 1856 she ran out from Boston to Manila in the record time of 89 days. Later in the same year, she again left Boston bound for the Philippines and was 102 days to Angaur Island (about fifteen degrees of longitude east of Manila), successfully weathering a terrific typhoon, with high seas and gales of hurricane force, for seven days. Loading at Manila, the clipper returned to Boston in 115 days; she was 37 days to Anjer and 78 days from Anjer home. On her earlier voyage, she had covered the course homebound in 107 days. While her run from Anjer to Boston was made also in 78 days, she was 29 days in the China Sea, and here she beat the time on her second passage by eight days because of a somewhat more favorable monsoon. The clipper ship *Northern Light* has the distinction of holding the all-time record of an eastward Cape Horn passage from San Francisco to Boston made in 76 days and 8 hours in the spring of 1853.

The *John Bertram*, an extreme clipper of 1,080 tons, built at East Boston by Elwell & Jackson in 1850, made what would seem to be a record round voyage from an East Coast port to Manila and return. She left New York June 14, 1854, ran out to Manila in 96 days (82 days to Anjer), and, returning, reached Boston January 29, 1855, 90 days from Manila and 73 days from Anjer. She completed the round voyage in 7 months 14 days (229 days), including detentions, and was at sea only 186 days—an average of 93 days for the outward and homeward passages.

The medium clipper ship *Syren* of 1,064 tons, built in 1851 by John Taylor at Medford, Mass., returning to North Atlantic ports, made three passages from Calcutta in 97, 104, and 104 days, one from Whampoa in 108 days, and one from Manila in 105 days. She also made one passage from Batavia to London in 96 days and two passages from Baker's Island to Liverpool in 109 and 133 days, respectively. The following statement shows the number of clipper ship passages during the years 1852-1866 from Manila to New York or Boston (the only U.S.A. East Coast ports used), of which records are readily available. The number of these westward, or homeward, passages is ninety and is divided among the years as follows:

| Year | Number | Year | Number | Year | Number | Year | Number | Year | Number |
|------|--------|------|--------|------|--------|------|--------|------|--------|
| 1852 | 2 | 1855 | 12 | 1858 | 3 | 1861 | 1 | 1864 | 3 |
| 1853 | 9 | 1856 | 8 | 1859 | 4 | 1862 | 11 | 1865 | 3 |
| 1854 | 11 | 1857 | 10 | 1860 | 7 | 1863 | 5 | 1866 | 1 |

A digest of each of these homeward passages from Manila made by United States clippers is set forth herewith for each of the years 1852-1866 inclusive:

| Name of Clipper and Tonnage | Launched | Builder | Sailed from Manila | Destination | | Passage in Days | Remarks |
|-----------------------------|---------------|-------------------------------|--------------------|-------------|----------|-----------------|---|
| | | | | Port | Date | | |
| 1852 | | | | | | | |
| FLYING FISH (1,505 tons) | Sept. 1851 | Donald McKay, East Boston | May 17 | New York | Sept. 17 | 123 | Ninety-three days from Anjer. Last leg of maiden voyage around the world via San Francisco. |
| GOLDEN GATE (1,341 tons) | July 12, 1851 | J. A. Westervelt, New York | 1852 | New York | 1852 | 103 | Via Batavia. Last leg of maiden voyage around the world via San Francisco. |

(Continued on next page)

| Name of Clipper and Tonnage | Launched | Builder | Sailed from Manila | Destination | | Passage in Days | Remarks |
|-----------------------------------|------------------|--|--------------------------|-------------|--------------|--------------------|--|
| | | | | Port | Date | | |
| <i>1853</i> | | | | | | | |
| EUREKA (1,041 tons) | Feb. 9, 1851 | J. A. Westervelt, New York | Mar. 18 | New York | July 16 | 120 | Last leg of second voyage around the world via San Francisco, from where she sailed to Hong Kong, but loaded at Manila. |
| FLYING FISH (1,505 tons) | Sept. 1851 | Donald McKay, East Boston | May 6 | Boston | Aug. 21 | 107 | Seventy-nine days from Anjer. Last leg of second voyage around the world via San Francisco. |
| SOUTHERN CROSS (938 tons) | Mar. 19, 1851 | E. & H. O. Briggs, East Boston | Feb. 18 | New York | June 3 | 105 | Last leg of second voyage around the world. Was 53 days from San Francisco to Manila. |
| GOLDEN CITY (810 tons) | Aug. 4, 1852 | J. A. Westervelt, New York | May 7 | New York | Aug. 26 | 111 | Last lap maiden voyage around the world via San Francisco. Damaged by collision when one day out and lost jib boom 78 days from Anjer. |
| GEM OF THE OCEAN (702 tons) | 1852 | Hayden & Cudworth, Medford, Mass. | May 1853 | Boston | Aug. 1853 | 110 | Last lap maiden voyage, San Francisco to Manila, in 46 days; 85 days from Anjer. |
| RAVEN (711 tons) | July 1, 1851 | James M. Hood, Somerset, Mass. | 1853 | New York | 1853 | 102 | Last lap of second voyage, San Francisco to Manila, 50 days. |
| MALAY (868 tons) | Aug. 26, 1852 | John Taylor, Chelsea, Mass. | 1853 | New York | 1853 | 127 | Last lap of maiden voyage, San Francisco to Manila, 44 days. |
| INO (895 tons) | Jan. 4, 1851 | Perrine, Patterson & Stack, New York | Dec. 17 | New York | Apr. 4 | 108 | Last leg of third voyage around the world, San Francisco to Manila, 49 days. |
| WINGED RACER (1,767 tons) | Nov. 1852 | Robert E. Jackson, East Boston | Aug. | Boston | Nov. | ? | Seventy-five and a half days from Batavia. Last leg of maiden voyage, San Francisco to Manila, 52 days. |
| <i>1854</i> | | | | | | | |
| FEARLESS (1,184 tons) | July 28, 1853 | A. & G. T. Sampson, East Boston | Mar. | Boston | June | 86 | Last leg of voyage around the world in 9 months 12 days, including all detentions; 74 days from Anjer. |
| WINGED ARROW (1,052 tons) | 1852 | E. & H. O. Briggs, South Boston | Apr. 1 | Boston | July 22 | 112 | Last leg of second voyage, San Francisco to Manila, in 36 days—very fast; 84 days from Anjer; 52 days from Cape. |
| FLYING FISH (1,505 tons) | Sept. 1851 | Donald McKay, East Boston | Apr. 2 | New York | July 20 | 109 | Last leg of third voyage, San Francisco to Manila, 42 days. |

(Continued on next page)

| Name of Clipper and Tonnage | Launched | Builder | Sailed from Manila | Destination | | Passage in Days | Remarks |
|---------------------------------|-------------------|---|--------------------------|-------------|------------------|--------------------|--|
| | | | | Port | Date | | |
| 1854—Continued | | | | | | | |
| AURORA (1,396 tons) | Nov. 5, 1853 | John Taylor, Chelsea, Mass. | 1854 | New York | 1854 | 103 | Eighty-eight days from Anjer. The second fastest of her five passages from Manila home. |
| RINGLEADER (1,154 tons) | Sept. 1853 | Hayden & Cudworth, Medford, Mass. | May | Boston | Aug. | 112 | Last leg of maiden voyage, San Francisco to Manila, 47 days. |
| SEAMAN'S BRIDE (668 tons) | June 25, 1851 | R. & E. Bell, Baltimore | Sept. 12 | New York | Jan. 6, 1855 | 116 | Eighty-one days from Java Head; 51 days from the Cape. Sailed to Hamburg Mar. 13, 1855, and sold to Germans. |
| CHALLENGER (1,334 tons) | Dec. 19, 1853 | Robert E. Jackson, East Boston | Oct. 10 | Boston | Jan. 23, 1855 | 104 | Eighty-three days from Anjer. Last leg of maiden voyage, San Francisco to Manila, 52 days. |
| TELEGRAPH (1,078 tons) | May 1851 | J. O. Curtis, Medford, Mass. | July | Boston | Oct. 13 | ? | Seventy-six days from Anjer. Last leg of third voyage. |
| SWORDFISH (1,036 tons) | Sept. 20, 1851 | William H. Webb, New York | Oct. | New York | Jan. 1855 | 102 | Last leg of third voyage, San Francisco to Hong Kong, 42 days; went to Manila to load. |
| WINGED RACER (1,767 tons) | Nov. 1852 | Robert E. Jackson, East Boston | July | Boston | Nov. | 133 | Seventy-nine days from Anjer; 54 days to Anjer. Last leg of second voyage, San Francisco to Manila, 51 days. |
| JOHN BERTRAM (1,080 tons) | Dec. 9, 1850 | Elwell & Jackson, East Boston | Nov. 1 | Boston | Jan. 30, 1855 | 90 | Seventeen days to Anjer; 73 days from Anjer. A very fast passage. |
| 1855 | | | | | | | |
| N. B. PALMER (1,399 tons) | Feb. 5, 1851 | Westervelt & Mackey, New York | 1855 | New York | 1855 | 99 | Captain Frisbie reported a run of 99 days from Manila home under not very favorable sailing conditions. |
| CHALLENGE (2,006 tons) | May 24, 1851 | William H. Webb, New York | 1855 | New York | 1855 | 117 | Seventy-five days from Anjer; unfavorable monsoon in China Sea; 42 days to Anjer. |
| FLYAWAY (1,274 tons) | 1853 | William H. Webb, New York | July 18 | New York | Nov. 1 | 106 | On July 29, struck a coral reef and had to jettison about 100 tons of cargo. Last leg of second voyage. |
| FEARLESS (1,184 tons) | July 28, 1853 | A. & G. T. Sampson, East Boston | Feb. 24 | Boston | May 21 | 86 | Seventy-seven days from Anjer. This run and the one made in 1854 within two days of record. |

(Continued on next page)

| Name of Clipper and Tonnage | Launched | Builder | Sailed from Manila | Destination | | Passage in Days | Remarks |
|----------------------------------|------------------|--|--------------------------|-------------|------------------|--------------------|---|
| | | | | Port | Date | | |
| <i>1855—Continued</i> | | | | | | | |
| GOLDEN WEST (1,441 tons) | Nov. 16, 1852 | Paul Curtis, East Boston | Feb. | New York | May 17 | 99 | Struck a reef in Gaspar Straits and had to jettison 200 tons of hemp cargo to get off. San Francisco to Manila, 55 days. |
| JOHN GILPIN (1,089 tons) | Aug. 1852 | Samuel Hall, East Boston | Dec. 6 | New York | Mar. 26, 1856 | 111 | Eighty-eight days from Anjer. Last leg of third voyage around the world. |
| JOHN LAND (1,054 tons) | Mar. 26, 1853 | E. & H. O. Briggs, South Boston | 1855 | Boston | 1855 | 108 | Last leg of second voyage around the world via San Francisco. |
| OCEAN PEARL (847 tons) | Aug. 15, 1853 | J. Magoun, Charlestown, Mass. | July 18 | Boston | Nov. 16 | 121 | Last leg of second voyage around the world. Went via Valparaiso, Honolulu, Hong Kong, and Manila. |
| SOUTHERN CROSS (938 tons) | Mar. 19, 1851 | E. & H. O. Briggs, East Boston | June 19 | Boston | Oct. 13 | 116 | Last leg of voyage around the world. San Francisco to Manila, 57 days. |
| WINGED ARROW (1,052 tons) | 1852 | E. & H. O. Briggs, South Boston | May 5 | Boston | Aug. 14 | 101 | Last leg of voyage around the world. San Francisco to Manila, 47 days. |
| WIZARD (1,601 tons) | Mar. 1853 | Samuel Hall, East Boston | July 24 | New York | Oct. 30 | 98 | Return passage of voyage from New York to Singapore, Hong Kong, and Manila; 74 days from Anjer. |
| YOUNG AMERICA (1,961 tons) | Apr. 30, 1853 | William H. Webb, New York | Sept. 21 | New York | Dec. 31 | 101 | Last leg of second voyage. San Francisco to Hong Kong, 42 days. Loaded at Manila. |
| <i>1856</i> | | | | | | | |
| FEARLESS (1,184 tons) | July 28, 1853 | A. & G. T. Sampson, East Boston | 1856 | Boston | 1856 | 95 | In 1854 and 1855, she had covered the course in 86 days—a record for two consecutive passages. |
| JACOB BELL (1,381 tons) | Nov. 12, 1852 | A. C. Bell, New York | 1856 | New York | 1856 | 113 | Return passage of voyage from New York to Bombay; only 78 days on run out. |
| MAMELUKE (1,303 tons) | Aug. 1855 | E. & H. O. Briggs, South Boston | June 24 | New York | Oct. 28 | 126 | Thirty-four days to Java Head; 69 days to Cape; 96 days to equator. Last leg of maiden voyage around the world via San Francisco. |
| RADUGA (587 tons) | 1848 | Currier & Townsend, Newbury, Mass. | June 2 | Boston | Sept. 21 | 111 | Last leg of voyage around the world via Cape Horn, Valparaiso, and Honolulu; thence 37 days to Manila. |

(Continued on next page)

| Name of Clipper and Tonnage | Launched | Builder | Sailed from Manila | Destination | | Passage in Days | Remarks |
|------------------------------------|-------------------|--|--------------------------|-------------|--------------|--------------------|---|
| | | | | Port | Date | | |
| <i>1856—Continued</i> | | | | | | | |
| REPORTER (1,474 tons) | Sept. 3, 1853 | Paul Curtis, East Boston | July 16 | Boston | Nov. 1 | 108 | Last leg of voyage around the world. San Francisco to Manila, 58 days. |
| NORTHERN LIGHT (1,021 tons) | Sept. 25, 1851 | E. & H. O. Briggs, South Boston | 1856 | Boston | 1856 | 107 | Twenty-nine days to Anjer; 78 days from Anjer. Went out from Boston to Manila in 89 days. |
| WHIRLWIND (960 tons) | Sept. 13, 1852 | James O. Curtis, Medford, Mass. | 1856 | New York | Late 1856 | 116 | Return passage of a voyage from New York to Melbourne. Went out in 80 days. |
| WINGED ARROW (1,052 tons) | 1852 | E. & H. O. Briggs, South Boston | Apr. 12 | Boston | Aug. 6 | 116 | Twenty-six days to Anjer; 90 days from Anjer; 56 days from Cape. Last leg of voyage around the world via San Francisco. |
| <i>1857</i> | | | | | | | |
| FLYING FISH (1,505 tons) | Sept. 1851 | Donald McKay, East Boston | Apr. 29 | Boston | Aug. 24 | 117 | To Anjer, 26 days; then 24 days to South African coast. Cape, July 7, 43 days from Anjer. St. Helena, July 17. Was 91 days from Anjer; 38 days from St. Helena. |
| CYCLONE (1,109 tons) | Aug. 18, 1853 | E. & H. O. Briggs, South Boston | 1857 | Boston | 1857 | 128 | Last leg of voyage around the world. San Francisco to Manila, 43 days. |
| EAGLE (1,296 tons) | May 3, 1851 | Perrine, Patterson & Stack, New York | Apr. | London | Aug. | 116 | Went out from London to Shanghai. Put into Manila to bury her captain and returned to London. |
| FLYING CHILDERS (1,125 tons) | Nov. 11, 1852 | Samuel Hall, East Boston | 1857 | New York | 1857 | 128 | Return passage on voyage from Hampton Roads, Va., to Melbourne; thence to Manila to load. |
| JACOB BELL (1,381 tons) | Nov. 12, 1852 | A. C. Bell, New York | Aug. 6 | New York | Dec. 3 | 119 | Was 50 days to Anjer and only 69 days from Anjer; 40 days from Cape and 20 days from Atlantic equator. |
| NORTHERN LIGHT (1,021 tons) | Sept. 25, 1851 | E. & H. O. Briggs, South Boston | 1857 | Boston | 1857 | 115 | Seventy-eight days from Anjer. Return passage of voyage between Boston and the Philippines. |
| SNOW SQUALL (742 tons) | 1851 | Alfred Butler, Cape Elizabeth, Maine | 1857 | New York | 1857 | 111 | Last leg of voyage around the world via Montevideo. Was 42 days from San Francisco to Manila. |

(Continued on next page)

MERCHANT SAIL

| Name of Clipper and Tonnage | Launched | Builder | Sailed from Manila | Destination | | Passage in Days | Remarks |
|--------------------------------|-------------------|---------------------------------------|--------------------------|-------------|------------------|--------------------|---|
| | | | | Port | Date | | |
| <i>1857—Continued</i> | | | | | | | |
| SWORDFISH (1,036 tons) | Sept. 20, 1851 | William H. Webb, New York | Jan. 18 | New York | Apr. 29 | 101 | Went out from New York to Panama and crossed Pacific to Manila. |
| WHIRLWIND (960 tons) | Sept. 13, 1852 | James O. Curtis, Medford, Mass. | July 20 | New York | Nov. 10 | 113 | Went out to Melbourne in 79 days; was 43 days from Melbourne to Manila. |
| WITCHCRAFT (1,310 tons) | Dec. 21, 1850 | Paul Curtis, Chelsea, Mass. | Sept. 30 | Boston | Feb. 4, 1858 | 127 | Thirty-eight days to Java Head; 89 days from Java Head. Went out to Melbourne and returned via Hong Kong and Manila. |
| <i>1858</i> | | | | | | | |
| WIZARD (1,601 tons) | Mar. 1853 | Samuel Hall, East Boston | June 26 | New York | Oct. 23 | 119 | On Aug. 8, she lost her mizzen-topgallant mast and a whole suit of sails in severe gale. Was 33 days to Anjer and 86 days from Anjer to New York. |
| SWORDFISH (1,036 tons) | Sept. 20, 1851 | William H. Webb, New York | 1858 | New York | 1858 | 107 | The previous year had gone over same course in 101 days. |
| PHANTOM (1,174 tons) | Dec. 8, 1852 | Samuel Lapham, Medford, Mass. | Oct. 5 | Boston | Jan. 20, 1859 | 103 | Last leg of voyage around the world. San Francisco to Manila, 54 days. |
| <i>1859</i> | | | | | | | |
| COMET (1,836 tons) | July 10, 1851 | William H. Webb, New York | Sept. 24 | New York | Jan. 17, 1860 | 115 | Thirty-eight days to Anjer; 77 days from Anjer; 41 days from Cape. Last leg of voyage around the world via San Francisco. |
| REPORTER (1,474 tons) | Sept. 3, 1853 | Paul Curtis, East Boston | 1859 | Liverpool | Aug. 1859 | 109 | Part of voyage, New York-San Francisco; thence to Manila in 49 days. Liverpool and back to New York. |
| RED GAUNTLET (1,038 tons) | Dec. 1, 1853 | James W. Cox, Robbinston, Maine | Mar. 12 | New York | June 23 | 103 | Went out to Manila from Cardiff, Wales, arriving Oct. 31, 1858. |
| NABOB (1,246 tons) | Jan. 21, 1854 | John Taylor, Chelsea, Mass. | 1859 | New York | 1859 | 102 | Was dismasted in Indian Ocean when 26 days out. Covered last 10,000 miles in 76 days under jury rig — a wonderful performance. |

(Continued on next page)

| Name of Clipper and Tonnage | Launched | Builder | Sailed from Manila | Destination | | Passage in Days | Remarks |
|--|------------------|--|--------------------------|-------------|------------------|--------------------|--|
| | | | | Port | Date | | |
| 1860 | | | | | | | |
| RINGLEADER (1,154 tons) | Sept. 1853 | Hayden & Cudworth, Medford, Mass. | Mar. 31 | New York | Aug. 2 | 124 | At Anjer Apr. 19; at Cape May 26; at equator July 3. Was 19 days to Anjer, 105 days from An- jer, and 68 days from Cape. Bad weather in Atlantic. |
| SWEEPSTAKES (1,735 tons) | June 21, 1853 | D. & A. Wester- velt, New York | Mar. 6 | New York | June 12 | 98 | Fourteen days to An- jer; 84 days from Anjer; 82 days from Java Head; 47 days from Cape. |
| ROMANCE OF THE SEAS (1,782 tons) | Oct. 23, 1853 | Donald McKay, East Boston | June 23 | Boston | Oct. 10 | 109 | Return passage of voy- age from New York to Hong Kong (116 days); then loaded at Manila. |
| FEARLESS (1,184 tons) | July 28, 1853 | A. & G. T. Sampson, East Boston | Sept. 26 | New York | Jan. 15, 1861 | 111 | Went out in 107 days from Boston to Hong Kong and loaded at Manila for return passage. |
| DON QUIXOTE (1,429 tons) | Sept. 1853 | Samuel Lapham, Medford, Mass. | 1860 | New York | 1860 | 112 | Last leg of voyage around the world via San Francisco. Could not get re- turn cargo at Hong Kong or China port. |
| EAGLE (1,296 tons) | May 3, 1851 | Perrine, Patterson & Stack, New York | Nov. 13 | New York | Mar. 24, 1861 | 131 | At Cape Town Jan. 27, 1861. Return to New York after trading on Asiatic coast following voy- ages between Britain and China. |
| CHARMER (1,055 tons) | Oct. 28, 1854 | George W. Jackman, Newburyport, Mass. | Nov. 14 | New York | Mar. 21, 1861 | 128 | Went ashore on a reef; jettisoned some hemp cargo to get off. At Anjer Dec. 4, 1860. |
| 1861 | | | | | | | |
| WIZARD (1,601 tons) | Mar. 1853 | Samuel Hall, East Boston | Jan. 11 | New York | Apr. 5, 1861 | 84 | Fastest passage on rec- ord: 12 days to An- jer; 72 days from Anjer; 44 days from Cape. |
| 1862 | | | | | | | |
| CHARGER (1,136 tons) | Oct. 25, 1856 | E. G. Pearce, Portsmouth, N. H. | July 10 | New York | Nov. 16 | 129 | Forty-one days to Java Head; 88 days from Java Head; 67 days from Cape, where she was detained 15 days by heavy gales. |
| CYCLONE (1,109 tons) | Aug. 18, 1853 | E. & H. O. Briggs, South Boston | 1862 | New York | 1862 | 106 | Seventh voyage. Was 50 days from San Francisco to Manila. |

(Continued on next page)

| Name of Clipper and Tonnage | Launched | Builder | Sailed from Manila | Destination | | Passage in Days | Remarks |
|------------------------------------|------------------|---|--------------------------|-------------|------------------|--------------------|--|
| | | | | Port | Date | | |
| 1862—Continued | | | | | | | |
| DASHING WAVE (1,180 tons) | July 15, 1853 | Fernald & Pettigrew, Portsmouth, N. H. | 1862 | Boston | 1862 | 141 | Thirty-three days to Anjer; 108 days from Anjer. Off Cape in heavy gales for 30 days. |
| FLYING CHILDERS (1,125 tons) | Nov. 11, 1852 | Samuel Hall, East Boston | Aug. 28 | London | Dec. 18 | 112 | Sold at London, upon arrival, because of Civil War. Became British ship GOLD-EN SOUTH. |
| GALATEA (1,041 tons) | Mar. 16, 1854 | Joseph Magoun, Charlestown, Mass. | 1862 | New York | 1863 | 115 | Ten years later, went over the same course in 121 days. |
| MALAY (868 tons) | Aug. 26, 1852 | John Taylor, Chelsea, Mass. | 1862 | New York | 1862 | 117 | Went over the course in 127 days in 1853 and 124 days in 1865. |
| RAVEN (711 tons) | July 1, 1851 | James M. Hood, Somerset, Mass. | July 1 | New York | Nov. 9 | 131 | Return passage of voyage from New York to China, Japan, and Siam. |
| REYNARD (1,051 tons) | 1856 | George W. Jackman, Newburyport, Mass. | May 20 | New York | Oct. 13 | 146 | Forty-two days to Anjer; 104 days from Anjer. Very slow passage made under unfavorable conditions. |
| SKYLARK (1,209 tons) | Aug. 4, 1853 | James M. Hood, Somerset, Mass. | Dec. 10 | Liverpool | Apr. 25, 1863 | 136 | Stopped at St. Helena. Was at Anjer Dec. 29, 19 days out, and at St. Helena Mar. 6, 1863. |
| TORNADO (1,802 tons) | Jan. 1852 | Jabez Williams, New York | May 1 | New York | Aug. 29 | 120 | Went out to Manila from Cardiff, Wales. Strong westerly gales in Indian Ocean. |
| WHITE SWALLOW (1,192 tons) | Mar. 26, 1853 | Hayden & Cudworth, Medford, Mass. | June 7 | Boston | Oct. 7 | 122 | Forty-eight days to Anjer. Strong adverse monsoon. Seventy-four days from Anjer—good sailing. |
| 1863 | | | | | | | |
| AURORA (1,396 tons) | Nov. 5, 1853 | John Taylor, Chelsea, Mass. | Early 1863 | Boston | May | 101 | Twenty-three days to Anjer; 78 days from Anjer. Fastest of five passages made between the ports. |
| COMPETITOR (871 tons) | Feb. 1853 | James O. Curtis, Medford, Mass. | July 27 | New York | Nov. 20 | 116 | Return passage home after trading on Asiatic coast. |
| CYCLONE (1,109 tons) | Aug. 18, 1853 | E. & H. O. Briggs, South Boston | Mar. 1 | New York | June 14 | 105 | Fifty-six days to Cape; 49 days from Cape. Last leg of eighth voyage. |
| FEARLESS (1,184 tons) | July 28, 1853 | A. & G. T. Sampson, East Boston | 1863 | Boston | 1863 | 100 | Made two passages from Manila to Boston in the near record time of 86 days. |
| MOUNTAIN WAVE (708 tons) | Dec. 13, 1852 | Joshua Magoun, Charlestown, Mass. | Mar. 9 | New York | July 4 | 117 | One hundred days from Java Head. Beat ship DANUBE, which sailed with her, by seven days. |

(Continued on next page)

| Name of Clipper and Tonnage | Launched | Builder | Sailed from Manila | Destination | | Passage in Days | Remarks |
|----------------------------------|------------------|---|--------------------------|-------------|------------------|--------------------|---|
| | | | | Port | Date | | |
| 1864 | | | | | | | |
| GAME COCK (1,392 tons) | Dec. 21, 1850 | Samuel Hall, East Boston | Dec. 30 | New York | Apr. 11 | 103 | Fifty-five days to Cape; 48 days from Cape; 27 days from equator. |
| SEA SERPENT (1,337 tons) | Dec. 1850 | George Raynes, Portsmouth, N. H. | Apr. 21 | New York | Aug. 5 | 106 | Fifty-seven days to Cape; 49 days from Cape. |
| WHITE SWALLOW (1,192 tons) | Mar. 26, 1853 | Hayden & Cudworth, Medford, Mass. | Dec. 8 | New York | Mar. 20, 1865 | 103 | Regarded as a fast run, considering the date and conditions. |
| 1865 | | | | | | | |
| FEARLESS (1,184 tons) | July 28, 1853 | A. & G. T. Sampson, East Boston | July 22 | Boston | Nov. 8 | 109 | Twenty-six days to Anjer; 83 days from Anjer to Cape, 30 days. Detained there 4 days by heavy westerly gales. |
| MALAY (868 tons) | Aug. 26, 1852 | John Taylor, Chelsea, Mass. | 1865 | New York | 1865 | 124 | Damaged during severe gale off the Cape. |
| YOUNG AMERICA (1,961 tons) | Apr. 30, 1853 | William H. Webb, New York | Apr. 16 | New York | July 25 | 100 | To Java Head, 32 days; Java Head to pilot off Barnegat, 65 days 12 hours— extremely fast. |
| 1866 | | | | | | | |
| ENDEAVOR (1,137 tons) | 1856 | Robert E. Jackson, East Boston | Feb. | New York | May | 101 | Reported as a very fast run for the period. |

The homeward, or westward, passages from Manila to North Atlantic ports herein mentioned number ninety; there were fifty-five to New York, thirty-one to Boston (eighty-six to United States ports), and two each to London and Liverpool (four to British ports). An overwhelming percentage of these passages was the last leg of around-the-world voyages from an East Coast United States port around Cape Horn to California and from San Francisco to China (or an oriental or East Indian port) in ballast looking for a cargo to carry home around the Cape of Good Hope. Many of the passages from Manila to a North Atlantic port were of ships that tried and were unable to obtain cargoes at Hong Kong or a Chinese port and, in desperation, sailed to Manila hoping to find some paying freight there. Some of the homeward runs from Manila were made by ships that sailed direct from San Francisco to Manila to load, and others were the last legs of voyages that were from an East Coast port out to Australia, China, or some East Indian (or even Indian) port. These ships finally loaded at Manila for the return passage. Very few American clipper ships in the fifties or sixties made round voyages from an East Coast U.S.A. (or from any North Atlantic) port to Manila, and whereas records of ninety homeward-bound passages from Manila have been found available in more or less detail, only the following four outbound passages to Manila have been similarly reported; however, many more passages were undoubtedly made by clipper ships during the period 1849-1866, both outbound and homebound, than those here recorded.

| Name of Clipper and Tonnage | Launched | Builder | Departure | | Arrival at Manila | Passage in Days | Remarks |
|-----------------------------------|-------------------|--|-----------|------------------|--------------------------|--------------------|--|
| | | | Port | Date | | | |
| RADUGA (587 tons) | 1848 | Currier & Townsend, Newbury, Mass. | New York | Apr. 24, 1849 | Aug. 4, 1849 | 102 | Outward bound on her second voyage. Returned from Macao to New York in 104 days. |
| JOHN BERTRAM (1,080 tons) | Dec. 9, 1850 | Elwell & Jackson, East Boston | New York | June 14, 1854 | Sept. 18, 1854 | 96 | Eighty-two days to Anjer; 14 days from Anjer to Manila. Returned to Boston in 90 days; 73 days from Anjer. |
| NORTHERN LIGHT (1,021 tons) | Sept. 25, 1851 | E. & H. O. Briggs, South Boston | Boston | 1856 | 1856 | 89 | Believed to be a record. Returned home in 107 days; 78 days from Anjer. |
| NORTHERN LIGHT (1,021 tons) | Sept. 25, 1851 | E. & H. O. Briggs, South Boston | Boston | Dec. 11, 1856 | Made Angaur Island | 102 | Was 7 days in a terrific hurricane. Ship blown off course and damaged. Returned from Manila to Boston in 115 days. |

But few clipper ships ever outsailed the steam-powered Confederate raider *Alabama*, and seldom was Captain Semmes outwitted by the command of a northern sailing ship. However, Capt. Isaac N. Jackson, a Yankee skipper of Winthrop, Maine, when in command of the *Belvedere* (1,320 tons; built at East Boston in 1857), is credited with both outsailing and outwitting Captain Semmes in the *Alabama* in December 1863, when the Yankee ship was in the Java Sea homeward bound from Manila. It is said that, with a favorable wind, the *Belvedere* sailed away from her pursuer, who lost contact with his prey. Later, Captain Semmes, smarting because of his failure, lay in wait for the *Belvedere* at the outlet of the Straits of Sunda, but Captain Jackson, by perfect timing, took advantage of a good wind and a dark night and escaped the trap set for him. The surprising thing about these episodes is that the *Belvedere*, although built during the latter part of the clipper ship era, was not a clipper ship and was deemed by many authorities not to qualify even as a "medium," or a "half," clipper. Many of the later-day Down Easters averaged faster passages and could outsail her. She was wrecked and lost on the Pacific Coast in late 1886, when a scant thirty years old.

American Sailing Ships in the Philippine Trade Following the Clipper Ship Era

The *Great Admiral* was an outstanding "half clipper" built by Robert E. Jackson, East Boston, and launched April 10, 1869. She saw general service on the Seven Seas under the Black Horse flag of William F. Weld & Company, Boston. After about twenty-eight years in world trade, during which she covered about three-quarters of a million miles, she was sold in March 1897 to Capt. E. R. Sterling for use in the Pacific coal and lumber trade, in which she operated with hard usage until her end in December 1906 following thirty-seven and a half years of sea service. During the years 1869-1896 inclusive, the *Great Admiral* made sixty-five ocean passages of from 3,400 to 17,500 nautical miles, of which five were

runs from San Francisco to Manila or a Philippine port and six were from Manila to either New York or Boston. On her maiden voyage, which was around the world via Cape Horn and San Francisco, the *Great Admiral* crossed the Pacific to Hong Kong (37 days) in 1869, but not finding a cargo at the China port, she ran over to Manila in 4 days and loaded there for New York. In 1883-1884, she ran from San Francisco to Manila, but had to go over to Hong Kong (7 days) to get a cargo, following which she made a passage of 95 days from the China port to New York. A comparison between this homeward passage from Hong Kong with the three earlier ones from Philippine Island ports (Manila, Iloilo, and Cebu) is of interest. The mileage covered on the run from Hong Kong in 1883 was 14,069 miles, and the average on the three consecutive runs home from Philippine ports (made in 1871, 1872, and 1875) was 14,065 miles. The Hong Kong passage of 95 days was much shorter than the average of 111 days for the three runs home from the Philippines, but in 1870 the passage from Manila to New York was made in only 89 days. In 1872, following the arrival of the *Great Admiral* at Manila from San Francisco, the vessel went to Iloilo (3 days) to load for Boston, and in 1875 she crossed the Pacific from San Francisco to Iloilo, but had to go to Cebu (3 days) to get a cargo for New York.

The following is a comparative record of the six passages made by the *Great Admiral* from Philippine ports to New York and Boston and of the five passages from San Francisco to a Philippine port. As the ship grew older, her sail area and the number of her crew were reduced because of economic conditions. On her early voyages, thirty-six men were carried, including the captain and officers, but in the nineties all the officers and crew, including the command, numbered only twenty-three men—a reduction of thirteen men, or 36 per cent.

| Year | Voyage | Passage | | Reported Mileage | Length of Passage in Days | Reported Average Mileage per Day |
|-----------|---|---------------|------------------------|------------------|---------------------------|----------------------------------|
| | | From | To | | | |
| 1870 | Maiden voyage: New York-San Francisco-Hong Kong-Manila-New York | Manila | New York | 12,656 | 89 | 145½ |
| 1871 | Second voyage: New York-San Francisco-Manila-New York | Manila | New York | 13,905 | 114 | 122 |
| 1872 | Third voyage: New York-San Francisco-Manila-Iloilo-Boston | Iloilo | Boston | 14,172 | 115 | 123 |
| 1875 | Sixth voyage: Liverpool-San Francisco-Iloilo-Cebu-New York | Cebu | New York | 14,119 | 111 | 127 |
| 1886 | New York (1885)-Melbourne-Newcastle-Hong Kong-Manila-New York | Manila | New York | 13,551 | 126 | 107½ |
| 1895 | Baltimore-San Francisco-Manila-Boston | Manila | Boston | 14,826 | 130 | 114 |
| 1870-1895 | Last leg of six voyages | Philippines | East Coast U.S.A. port | Average 13,871 | Average 114 | Average 121½ |
| 1871 | Second voyage | San Francisco | Manila | 7,181 | 43 | 167 |
| 1872 | Third voyage | San Francisco | Manila | 7,534 | 44 | 171 |
| 1875 | Sixth voyage | San Francisco | Iloilo | 6,824 | 45 | 151½ |
| 1883 | Cardiff-Hong Kong-San Francisco-Manila-Hong Kong-New York | San Francisco | Manila | 7,642 | 43 | 178 |
| 1895 | Baltimore-San Francisco-Manila-Boston | San Francisco | Manila | 7,091 | 46 | 154 |
| 1871-1895 | Intermediate leg of five voyages | San Francisco | Philippines | Average 7,254 | Average 44 | Average 165 |

The *South American* of 1,694 tons, built by Smith & Townsend, East Boston, Mass., and launched in September 1876 for Henry Hastings, of Boston, was popularly designated a "half clipper," and the claim was made in the late seventies that she was "the finest wooden sailing ship afloat." During the period of her sea life (December 3, 1876-September 15, 1889,

or 12 years 9½ months), the *South American* made thirty-one ocean passages of from 28 to 130 days each in addition to two Pacific coastal runs of 13 and 8 days, respectively. Of the thirty-one deep-sea runs, none was outbound direct from an East Coast U.S.A. port to the Philippines, but on the last leg of her maiden voyage in 1877 and on her uncompleted final voyage in 1889, she loaded in the Philippines for Boston. She was wrecked on a reef off the South African coast on September 15, 1889, and became a total loss. The two passages to a Philippine port (one to Manila and the other to Iloilo) were both transpacific runs and were made in 45 and 57 days, respectively. The following is a record of the four passages made either to or from a Philippine Island port during the lifetime of the *South American*:

| Year | Voyage | Passage | | Length of Passage in Days |
|------|--|---------------|-------------------|---------------------------|
| | | From | To | |
| 1877 | New York (1876)-San Francisco-Manila-Boston | San Francisco | Manila | 45 |
| 1877 | " | Manila | Boston | 110 |
| 1889 | New York (1888)-Sydney-San Diego-Nanaimo-San Francisco-Iloilo-Boston | San Francisco | Iloilo | 57 |
| 1889 | " | Iloilo | Cape of Good Hope | 55 |

A trio of Salem ships owned by Silsbee, Pickman & Allen and built by John Taylor, East Boston, in the sixties and seventies was designed for and used in the Philippine trade with a great measure of success and has been called "the last of the Salem East Indiamen." The *Sooloo (II)*, the first of the trio, built in 1861, was of only 784 tons. She made nineteen successful voyages to the East and on her last was so damaged by collision with the schooner *Messenger* when near home that it was with difficulty that she was worked into Vineyard Haven and later towed to Boston, where she was sold in 1887 and converted into a coal barge. The second of the fleet was the popular *Mindoro* of 1,065 tons gross (970 tons net), launched in November 1864. This ship was 169 ft. long, 38.7 ft. beam, and 23.7 ft. in depth. After making her maiden voyage from New York via Cape Horn to San Francisco, thence to Hong Kong, Manila, and home, she made all her subsequent outward passages around the Cape of Good Hope to Far Eastern or Australian ports, generally running home from a Philippine Island port, and many of the cargoes carried were the property of her owners. The *Mindoro* reached Boston upon the completion of her last East Indian voyage in 1893 and was towed to Salem, where she was laid up for several years. She was sold to New York owners in 1898 for conversion into a towing coal barge. The *Panay*, the last of the trio, was of 1,190 tons (length 186.7 ft., beam 37 ft., depth 23.5 ft.). She was built in 1877 and, like her sisters, was considered "a lucky and a profitable ship in the Manila trade." However, the *Panay* was wrecked in the Philippines in July 1890, when thirteen years old and about the time that she and the *Mindoro* were finding it difficult to make money in the trade. This fleet was built primarily as carriers of hemp, used in New England in the manufacture of Manila hemp rope, although the vessels often carried some sugar on their homeward runs. Each ship was armed with a mounted cannon and carried stands of arms to repel any pirates that might be encountered in eastern waters. A fourth vessel built at Chelsea for the same owners and generally classed with their *Sooloo*, *Mindoro*, and *Panay* was the somewhat larger *Formosa* of 1,252 tons. This vessel was not regularly employed in the Philippine trade, and she was lost in Allas Straits, near Java, when twelve years old.

American sailing ships built after the Civil War were designed, because of economic conditions, to carry a good cargo at a fair rate of speed, and extreme speed was deliberately sacrificed in order to obtain more of a paying load while also reducing the size of the crew, the sail spread, and operating expenses. The American sailing ship of the post-clipper ship era gradually became known as the Down Easter, for she was built Down East and was of the type long championed by practical Maine shipbuilders and shipowners. Most Down

Easters were Cape Horners, and when San Francisco became a grain exporting port and Puget Sound a great lumber shipping area, around-the-world voyages, with the transpacific run in ballast from San Francisco to a Chinese or East Indian port to seek a cargo for the homeward passage, became less and less common. American sailing ships traded with the Philippines during the seventies, eighties, and nineties, but the number of passages from an East Coast U.S.A. port to Manila or any other Philippine port was few. Hemp and sugar in moderate quantities were shipped from the Philippines to the United States, but the tonnage required for this movement was not great. In the nineties and particularly after the Spanish-American War and the United States's occupation of the Philippines, coal shipments to Manila were in demand, with cargoes generally moving from Newcastle, N.S.W., and later from Norfolk, Va. The demand in the Philippines for Puget Sound lumber and general American products developed at the turn of the century under United States rule, and as the demand for hemp waned, exports of Philippine sugar and other agricultural and natural products increased; but the trade was decidedly limited and spotty, and outside of big bulk cargoes such as coal and lumber, the steamships handled most of it. The sailing records of American windjammers in the Manila or Philippine trade following the Civil War are meager, but the following are passages of Down Easters in the Manila trade of which data are available:

| Name of Ship and Net Ton- nage | Year Built | Builder | Passage | | Length of Passage in Days | Remarks |
|--------------------------------------|---------------|---|------------------|------------------------|---------------------------------|--|
| | | | From | To | | |
| BOHEMIA (1,663 tons) | 1875 | Houghtons, Bath, Maine | Manila 1895 | Delaware Breakwater | 88 | Very fast last leg of voyage, New York - Rio - Newcastle (N.S.W.) - Manila - Phila- delphia. |
| MARY L. STONE (1,420 tons) | 1874 | Goss & Sawyer, Bath, Maine | Manila 1892 | New York | 90 | Went out to Saigon from New York in 91 days. |
| DAUNTLESS (995 tons) | 1869 | Maxson, Fish, Mystic, Conn. | Manila 1883 | Boston | 96 | Went out (1882) to Colum- bia River from New York. |
| BELLE OF OREGON (1,110 tons) | 1876 | Goss & Sawyer, Bath, Maine | Manila 1887 | New York | 102 | Eighteen days to Anjer; 84 days from Anjer. |
| GOV. GOODWIN (1,413 tons) | 1877 | Campbell & Brooks, East Boston, Mass. | Manila | Boston | 102 | In early 1890's. Captain Oakes. Best day's run, 262 miles. |
| SERVIA (1,773 tons) | 1883 | Houghtons, Bath, Maine | Manila | New York | 103 | Best day, 273 miles. Went out from New York to Kobe, 153 days; Kobe to Manila, 9 days. |
| E. B. SUTTON (1,758 tons) | 1881 | Chapman, Bath, Maine | New York 1903 | Manila | 108 | A successful Cape Horner. |
| ST. JAMES (1,488 tons) | 1883 | Flint, Bath, Maine | New York 1899 | Manila | 113 | New York to Anjer, 14,855 miles in 96 days; Anjer to Manila, 17 days. |
| FARRAGUT (1,549 tons) | 1876 | John Currier, Jr., Newburyport, Mass. | Manila 1877 | Boston | 114 | Maiden voyage. Went out to San Francisco from New York, 124 days; San Fran- cisco to Manila, 46 days. |
| CLEOPATRA (1,233 tons) | 1867 | Stack, Williamsburg, N. Y. | Manila 1870 | New York | 126 | Went out (1869) from New York to San Francisco, 118 days. |
| L. SCHEPP (1,776 tons) | 1878 | Titcomb & Thompson, Kennebunkport, Maine | New York 1901 | Manila | 134 | New York to Anjer, 102 days; Anjer to Manila, 32 days. |
| RINGLEADER (1,145 tons) | 1868 | Pierce & McMichael, Chelsea, Mass. | Manila 1869 | New York | 144 | Last leg of maiden voyage, Boston - San Francisco - Ma- nila-New York. |
| SUSQUEHANNA (2,628 tons) | 1891 | Sewalls, Bath, Maine | Norfolk | Manila | 148 | A very slow run. |
| SUSQUEHANNA (2,628 tons) | 1891 | Sewalls, Bath, Maine | Norfolk | Manila | 204 | Extremely slow. Arrived when being posted as "missing." |

(Continued on next page)

| Name of Ship and Net Ton- nage | Year Built | Builder | Passage | | Length of Passage in Days | Remarks |
|---------------------------------------|---------------|---------------------------------|------------------|--------------|---------------------------------|--|
| | | | From | To | | |
| EDWARD O'BRIEN III (2,157 tons) | 1882 | O'Brien, Thomaston, Maine | Cebu 1897 | St. Helena | 123 | Continued on to Boston. Cap- tain Oliver died at sea. |
| FLORENCE (1,604 tons) | 1877 | Goss & Sawyer, Bath, Maine | Anjer 1897 | Philadelphia | 91 | From Manila out from New York to Sydney, 104 days. |
| FLORENCE (1,604 tons) | 1877 | Goss & Sawyer, Bath, Maine | Anjer 1896 | New York | 97 | From Manila out from New York to Java. |
| FLORENCE (1,604 tons) | 1877 | Goss & Sawyer, Bath, Maine | New York 1895 | Anjer | 107 | To Java ports and on to Manila. |

But very few cargoes were taken from United States ports to the Philippines prior to the Spanish-American War, following which many cargoes of coal were shipped from East Coast U.S.A. ports (such as Norfolk, Va.) to Manila for the use of the American Navy. Coal was also shipped from Newcastle, N.S.W., to Manila on ships that had run out to an Australian port and had to go to an East Indian or China port to find a cargo for a homeward passage. In 1897 the *Florence* (1,604 tons; built at Bath, Maine, in 1877), during a voyage from New York to Sydney, Australia (104 days), and return via Manila to Philadelphia, ran from Newcastle, N.S.W., to Manila in 40 days, which was claimed to be a record at the time. Another Down Easter, the *St. Mark* (1,896 tons; also built at Bath, Maine, in 1877), carrying coal from Newcastle to Manila in 1899, required 101 days to complete the passage because of phenomenally light adverse sailing conditions, or two and a half times the time of the *Florence's* fast run. In 1901 another Bath-built Down Easter, the *St. Paul* (1,824 tons; built in 1874), carried coal from Newcastle to Manila and, being unable to get any outbound cargo, proceeded in ballast to Seattle, where she was sold to fish packers. (In 1930 this ship, when fifty-six years old, was bought as "a specimen of the once famous American wooden sailing ship" to be used on Puget Sound as a museum dealing with the history of the Pacific Northwest.) The *Bohemia* of 1,663 tons, built by the Houghtons at Bath, Maine, in 1875 for their own account, did some fast sailing on her 1894-1895 voyage from New York to Australia via Rio de Janeiro and return to Philadelphia via Manila, but the claim made of a fast run of 35 days from an Australian port to Manila is lacking in detail.

The *Jonathan Bourne* (1,472 tons; built at Bath, Maine, in 1877) made a voyage from New York to Australia in 1884 and commenced her return carrying coal bound for Manila; she struck an uncharted reef and was lost, her crew (and passengers) making the island of Apo in the Philippines. The *Paul Revere* (1,657 tons; built at Boston in 1876), in the early 1900's, took two cargoes of coal from Newcastle to Manila and was sold at Manila for conversion into a barge. The *Challenger* (1,399 tons; built at Bath, Maine, in 1877), in 1902, rigged as a bark, engaged in the Pacific lumber and coal trade and went ashore on the island of Corregidor when carrying coal from Newcastle, N.S.W., to Manila. She was lightened, refloated, and repaired. She sailed for San Francisco, but was 40 days in the China Seas, making no headway against northeast monsoons; severe gales followed for 16 days in the Pacific, and the passage from Manila to San Francisco occupied 106 days. The *Emily F. Whitney* (1,207 tons; built at East Boston in 1880) made some Australian voyages via the Cape of Good Hope and on the return passages carried coal from Newcastle, N.S.W., to Manila and sugar and hemp from there to New York and Boston.

The *Farragut* (1,549 tons; built at Newburyport, Mass., in 1876), on her maiden voyage, made a 46-day run from San Francisco to Manila looking for a cargo. On her second voyage, the ship carried ice from Boston to Madras, India, in 106 days and returned home after loading at Manila. The *Oregon* (1,364 tons; built at Bath, Maine, in 1875), on her maiden voyage, ran from Norfolk, Va., to Liverpool, then took coal from Cardiff to Hong Kong; after discharging, she went in 3½ days to Manila and, loading sugar, carried it in 47 days to

San Francisco and took wheat from that port in 102 days to Queenstown, Ireland. The *Francis* (1,974 tons; built at Bath, Maine, in 1885), on her second voyage, took oil out to Hiogo and then went to Manila, where she loaded sugar for San Francisco; after discharging, she returned to Manila for a second cargo of sugar, following the delivery of which she sailed from San Francisco with wheat for Liverpool. The *Levi C. Wade* (1,525 tons; built at Bath, Maine, in 1878) sailed from Manila July 3, 1884, with sugar for San Francisco and "went missing." Most passages from San Francisco to Manila in the heyday of sail were made in ballast, but at times no cargo was obtainable at Manila for ships that desired to travel east to an American port. The *McLaurin* (1,312 tons; built at Newburyport, Mass., in 1878) reached San Francisco in March 1901 in ballast from Manila. The *Frank Jones* (1,453 tons; built at Portsmouth, N. H., in 1874) left San Francisco March 30, 1877, in ballast bound for Manila to seek a cargo to carry home. While she was in tow leaving the harbor, the hawser parted, and the ship went ashore and was lost.

The *Cyrus Wakefield* (2,013 tons; built at Thomaston, Maine, in 1882) made fourteen voyages to California and on twelve of them returned east via Cape Horn; on one she sailed westward around the world via the Philippines and the Cape of Good Hope. In August 1900, the ship was sold when on the Pacific Coast to the Quartermaster Department, U.S. Army, for \$75,000. She loaded coal at Nanaimo, B.C., for Manila and, upon arrival there, was converted into a coal barge and stationed at that port. The *Alex McNeil* (1,088 tons; built at Waldoboro, Maine, in 1869) took a cargo of lumber from Puget Sound to the Philippines in 1902, discharged at Manila, sailed December 10 for the Northwest Coast, and was wrecked and became a total loss on Pratas Reef two weeks later. The *Tacoma* (1,739 tons; built at Bath, Maine, in 1881) was chartered by the U.S. Government to transport horses from San Francisco to Manila. She made three voyages in this service and had a fine record. The *P. N. Blanchard* (1,589 tons; built at Yarmouth, Maine, in 1876) was at Manila with the American ships *Great Admiral* (1,497 tons) and *R. R. Thomas* (1,333 tons) when the U.S. battleship *Maine* was blown up in Havana Harbor. The *P. N. Blanchard* loaded quickly with hemp, got away before the Battle of Manila Bay, and made a very fast run of 12 days to Anjer, where she heard of Commodore Dewey's destruction of the Spanish fleet and capture of the city. The *Great Admiral* and *R. R. Thomas*, getting less expeditious dispatch at Manila, had sailed for Hong Kong to complete loading before the battle. The *Vigilant* (1,723 tons; built at Kennebunkport, Maine, in 1877), took coal from Norfolk, Va., to Manila in 1899 for the American fleet and reached port with her cargo on fire; she was scuttled, later refloated and repaired, and used as a storage hulk for kerosene.

The *Adam M. Simpson* (1,525 tons; built at Bath, Maine, in 1875) took case oil out from New York to Hong Kong in 1883; she then went to Iloilo in the Philippines to load sugar and in December, on her passage home, struck a reef in Palawan Passage and was a total loss. The *Moses Day*, built in 1868 and owned by Southard, of Richmond, Maine, was wrecked in December 1873 on the coast of Mindanao (of the Philippines), but all aboard succeeded in reaching Manila in the ship's boats. The *Grecian* (1,677 tons; built at Kennebunkport, Maine, in 1876) sailed from Iloilo for New York in March 1885 and was stranded and lost on Great Danger Bank, off the Philippine island of Balabac. The *Matchless* (1,198 tons; built at East Boston in 1870) was wrecked on a reef and lost June 15, 1883, in the Straits of Sunda when on a passage from Iloilo to Boston laden with sugar. The *Whittier* (1,295 tons; built at Newburyport, Mass., in 1869) made most of her voyages to Australia, India, or the Philippines, but many of them originated or terminated at Liverpool. On July 14, 1880, when eleven and a half years old, the *Whittier*, when bound for Cebu in the Philippines from Batavia, was wrecked on the Saracen Reef off the coast of Borneo and became a total loss.

The *Phineas Pendleton* (1,253 tons; built at Brewer, Maine, in 1866) was loading at Manila for New York in August 1885, when she caught fire and became a total loss. The *St. Charles I* (1,166 tons; built at Thomaston, Maine, in 1866) went from Manila to New

York in 1879, then carried case oil out to Hiogo, but before she could discharge and again sail to Manila for another cargo to carry to New York, she was destroyed by fire. The *Henry S. Sanford* (1,159 tons; built at Bowdoinham, Maine, in 1869) was unfortunate in her two ventures in the Philippine Islands trade. In 1887, on a passage from Manila to New York, Capt. George W. Pendleton and four of the crew died of beriberi. On her next voyage, she went from New York to Sydney, thence from Newcastle to Manila with coal, and while loading at Cebu for home she dragged her anchor and was badly damaged in collision during a typhoon. After being towed to Manila, the ship was condemned, sold, and converted to a coal hulk.

The *Frank N. Thayer II* (1,648 tons; built at Newburyport, Mass., in 1878) met a tragic fate when, after engaging in the Cape Horn trade, she made a couple of voyages to the Far East. In January 1886, when bound from Manila to New York, the ship was destroyed by fire by two Manilamen (who were part of her crew) after they had stabbed to death the two mates and cut up Captain Clarke so badly that he was left for dead. The captain, however, was saved by other members of the crew in a small boat and landed at St. Helena. The *Northern Light* (1,795 tons; built at Quincy, Mass., in 1872) made an eventful voyage in 1882-1883 from New York to Yokohama, returning home by way of Manila, where she loaded sugar and hemp. The crew was mutinous, and one man stabbed and mortally wounded the chief officer. Off the Cape of Good Hope, the rudderhead twisted off in heavy seas, water got below and dissolved the sugar, and the ship became so crank that hemp stowed in the between decks had to be jettisoned. The *Northern Light* put into Port Elizabeth, where the cargo was discharged and repairs made. The substitute chief officer left the ship, and an ex-convict signed in his place organized a second mutiny, planning to murder Captain Slocum and take possession of the vessel. The plot was discovered in time, and the mate was put in irons and kept there until he was turned over to the authorities upon a very belated arrival at New York.

The last voyage as an American ship of the *Enoch Train* (1,787 tons; built at East Boston in 1854) prior to being sold to the British was a run in 1873 from Manila to New York. The *Favorita* (1,194 tons; built at Mystic in 1862) made her last voyage in 1876 under the Stars and Stripes, going from Boston to Melbourne, thence to San Francisco, and from there in ballast to Manila, where she loaded for home. Upon her arrival, she was sold to the Germans. The *Don Quixote* (1,174 tons; built at Medford, Mass., in 1868) reached New York in June 1879 from Manila and was sold to the Germans for \$30,000. The *Springfield* (1,043 tons; also built at Medford, Mass., in 1868), on her third voyage, ran from New York to Melbourne and thence to San Francisco, Puget Sound, Manila, and home. On her fourth voyage, she went from New York around the Horn to San Francisco and thence to the Philippines, where she loaded for home. After making six voyages under the American flag, the *Springfield* was also sold to the Germans. The *S. F. Hersey* (991 tons; built at Searsport, Maine, in 1865), on her last voyage under the American flag, went from Boston out to Melbourne, took coal from Newcastle, N.S.W., to Hong Kong, and loaded at Manila for New York; following her arrival, she was sold to the British in 1886 for the Australian-Pacific trade.

The *St. James* (1,488 tons; built at Bath, Maine, in 1883) was a typical Down Easter designed for the Cape Horn trade. In 1899 she made a passage to Manila via the Cape of Good Hope, carrying coal from Norfolk, Va., to the Philippine port in 113 days; returning, she loaded at Hong Kong and ran home in 114 days. Upon her arrival at New York in March 1900, she was sold to the California Shipping Company. The *St. James* thereupon loaded for California and is said to have made the last passage around the Horn by a sailing ship carrying a general cargo from New York to San Francisco. The *William H. Connor* (1,496 tons; built at Searsport, Maine, in 1877) saw deep-sea service under canvas for twenty-five years, carrying principally lumber, coal, and oil. Her last voyage as a sailing ship was from New York to Fremantle, Newcastle, Manila, Hong Kong, and back to New

York, where she was sold to Lewis Luckenbach in 1902 for conversion into a coal tow barge. The *Jabez Howes* (1,581 tons; built at Newburyport in 1877) was a first-class Cape Horn which carried some 2,250 tons of coal westward and 2,600 short tons of wheat eastward around the Horn. Prior to 1900, the *Jabez Howes* made nineteen westward Cape Horn passages to California and eighteen eastward passages to North Atlantic ports. This ship made only one Cape of Good Hope voyage, and in 1887 she went from New York to Melbourne in the fast time of 80 days and came home via Manila. During the 1900's, the "*Howes*" was in the transpacific lumber and coal trade, carrying lumber out from Puget Sound and coal from Newcastle to San Francisco or Honolulu. In 1908 she became a salmon packer and was wrecked on the Alaskan coast in April 1911, when thirty-three and a half years old. The *J. B. Walker* (2,106 tons; built at Thomaston, Maine, in 1879) was in the Cape Horn trade almost exclusively from 1880 until 1896, when she commenced to carry coal or case oil to the Far East. In December 1896, she was at Cebu in the Philippines, and in January 1900 she was sold for \$30,000 when on a passage from Manila to New York. At this time, she was rigged as a bark. The last voyage of the *J. B. Walker* under canvas was out to Manila, Hong Kong, and Hiogo, and returning home in ballast via Cape Horn she put into Valparaiso for provisions. The vessel was sold to Lewis Luckenbach in 1903 for conversion into a tow barge.

The big wood Sewall four-masted shipentines occasionally took coal cargoes to Manila following the American occupation of the Philippines. The *Susquehanna* (2,628 net tons; built at Bath, Maine, in 1891) did some good general sailing on the Seven Seas. She ran from New York to San Francisco in 117 days, from San Francisco to Liverpool in 94 days, from San Francisco to New York in 109 days, from the Hawaiian Islands to the Delaware Breakwater in 89 days, and from Hong Kong around South Africa to New York in 102 days. However, she seemed hoodooed when sent to the Philippines with coal, for the two passages made from Norfolk, Va., to Manila occupied 148 and 204 days, respectively, and she completed the latter run in unprecedented light airs just about the time that she was being given up as lost. The big *Shenandoah* (3,258 net tons; built by the Sewalls at Bath in 1890) took a cargo of coal from Norfolk, Va., to Manila in 1905, then proceeded to Puget Sound, and carried a load of lumber from there to New York in 131 days.

Arthur Sewall & Company's steel fleet made passages from East Coast U.S.A. ports to Manila during 1904-1906, and Mark W. Hennessy says that the *Erskine M. Phelps*, coal laden, led a list of seven passages of Sewall steel ships to Manila, making a good run out from Philadelphia in 104 days. This same vessel, the following year, made another satisfactory run and reported reaching anchorage at Cavite October 27, 1906, with coal, "114 days out from Delaware Capes." The Sewall-owned British-built *Kenilworth*, which boasted of her speed, sailed from New York September 21, 1904, with a cargo of case oil for Manila and arrived at anchor outside the harbor May 10, 1905, after a distressingly long passage of 231 days (reported as 230 days). The *Edward Sewall* arrived at Manila June 8, 1905, with coal from Baltimore and reported a passage of 143 days. During the same year, the Sewall five-masted steel schooner *Kineo* required 161 days to make a passage from Norfolk to Manila. On May 23, 1906, the *William P. Frye* was reported at Manila with coal from Norfolk after a run out of 170 days, and shortly afterwards (May 24) the *Arthur Sewall* reached Cavite with coal from Philadelphia after a passage of 163 days via Batavia, where she was delayed because of fire in her cargo (a common occurrence in these Sewall ships, although they were equipped with Clayton fire extinguishing plants); this passage of the *Arthur Sewall* was reported as "121 days under sail, on the course, at sea." All these coal passages to Manila of the Sewall ships were one-way traffic, and they could not pick up any return cargoes such as sugar, hemp, etc., because of competition of steam tramps. These Sewall vessels, therefore, were compelled to sail from Manila in ballast and go elsewhere searching for a cargo.

XXI.

THE INDIAN TRADE

The Opening of Trade with India by American Vessels

THE British East India Company enjoyed a monopoly in marine trade between British, Indian, and oriental ports at the time of the birth of the republic of the United States, and this monopoly continued through the greater part of the first half of the nineteenth century. The British did all within their power to close all Indian and Eastern ports to the young American merchant marine and keep United States ships out of Indian, East Indian, and Chinese ports. In 1783 the ship *Empress of China* sailed from New York to Canton and was the first American vessel to go to China. At that time, Indian and Indian Ocean trade was generally barred to the United States, but in the latter part of the seventeenth and the early years of the eighteenth century, a number of New York merchants carried on a fairly extensive trade with the pirates who infested the seas about Madagascar. However, at that time New York was a British colony. In this profitable early Madagascar trade, American products were taken out in New York vessels and exchanged for Eastern goods, which the pirates had taken from vessels captured by them in the Indian Ocean. Philadelphia evidently enjoyed some trade beyond the Cape of Good Hope before the Revolution, but this was protected by the British flag. The Isle of France (or Mauritius) and its small island neighbor, the Isle of Bourbon, which lie in the Indian Ocean about five hundred miles east of Madagascar directly in the sailing route between the Cape of Good Hope and the East Indies, were taken by the French in 1761 and soon became important as a way station for ships of the French East India Company engaged in trade between France and the French possessions in India and the East Indies. In 1783, France extended to American vessels the privilege of touching at the Isle of France for provisions and water and in late 1784 extended the privilege to include the landing of American produce at the Isles of France and Bourbon and the loading of the products of these islands or of the East Indies in return.

In November 1784, Elias Hasket Derby, the Salem merchant-adventurer, sent his first ship—the *Grand Turk*—to the Cape of Good Hope to investigate the possibility of trade at and beyond the Cape, and this vessel was lying at the South African port in March 1785 when the pioneer American China trader *Empress of China* called at the Cape on her way home to complete her first oriental voyage. In December 1785, the *Grand Turk* sailed from Salem for the Isle of France and was the first Salem vessel to clear from that port for a destination east beyond the Cape of Good Hope. Upon arrival at the Isle of France, the prices asked for coffee and sugar (the expected return cargo) being high, the *Grand Turk* carried French freight from the islands to Whampoa, the port of Canton. She completed a very profitable voyage and reached Salem in May 1787, being the first Salem vessel to arrive from any port beyond the Cape of Good Hope and one of the first American vessels to complete a passage home from China.

Britain did not grant the United States permission for American vessels to trade at British ports in India until the Jay Treaty was signed in 1794, but in 1785 the government

of British India had considered it to its economic interest to extend a gratuitous license, revocable at its pleasure, to American vessels to trade at British-Indian ports. The local governments of the French, Dutch, Portuguese, and Danish settlements of India were encouraging American trade, and Britain felt that its policy of exclusion would work to the detriment of British power and prestige in India. Elias Hasket Derby developed his Salem-Isle of France trade and built up a great fortune thereby. He traded extensively and bought and sold ships as well as cargoes. In September 1788, two of his vessels, the *Peggy* and the *Sultana*, arrived at Bombay from the Isle of France, being among the very first American vessels to be seen at that port. The ship *Peggy* arrived at Salem in June 1789, bringing the first cargo of Indian cotton ever to reach America. About this time, the ships *Atlantic* and *Light Horse* and the brigantine *Sultana* of the Derby fleet traded with Calcutta and Madras as well as Bombay, and the *Atlantic* and *Light Horse* carried "blackwood" and cotton from Indian ports to Canton. Elias Hasket Derby, from the late eighties of the eighteenth century to his death in 1799, devoted most of his thought and energies to commerce with the Far East. He became the leading American merchant trading to the Isle of France and occasionally sent ships on direct voyages from Salem to Batavia, Manila, and Calcutta. It was not until after the Jay Treaty of 1794 was signed that the American-Indian trade assumed sizable importance. Mr. Derby carried on an extensive commerce with Calcutta during the last ten years of his life, but during the decade from 1794 to 1804 the number of American ships trading to India increased several times over, and many of these vessels flew the Derby flag.

The first *Grand Turk* owned by Mr. Derby was sold at the Isle of France in 1788 for an amount said to be twice the value placed on the ship by her American owner. The Derby ship *Grand Turk II*—a "great ship" of 560 tons and too large for the port of Salem—made a round voyage between Salem and Calcutta in 1792-1793. From Captain Hodges' old logbook, which has been preserved, we find that the ship sailed from Salem March 11, 1792, passed Tristan d'Acogna May 31 and the Cape of Good Hope June 22, and anchored at the mouth of the Hooghly River, taking pilot on board for Calcutta, on August 18, 1792, but she did not reach her destination until August 24. The ship left Calcutta on her return passage December 30, 1792, cleared the Hooghly for Madras January 7, 1793, was at Madras from January 17 to February 6, passed the Cape of Good Hope April 2, passed St. Helena and the Ascension Islands on April 19 and 24, respectively, and arrived at Salem June 12, 1793, after a round voyage that, including port detentions of well over four months, occupied fifteen months. Mr. Derby found that his *Grand Turk II* was too large both for Salem Harbor and for his trade, and after sending her on a European voyage with a return to New York, he was glad to dispose of her at the latter port at a sacrifice.

After 1793, when war broke out between France and England, United States vessels enjoyed a great advantage for some time because of their neutrality, and this fact undoubtedly increased American commerce with India. In 1794, Elias Hasket Derby ordered built for him by Enos Briggs at South Salem two vessels for the Indian trade, which were described as ketch-rigged and were two-masted vessels square-rigged on both masts, with the mainmast much taller than the mizzenmast and stepped much farther aft than on a brig. This permitted the so-called "ketch" (or "catch") to use much larger jibs than was customary with two-masted square-riggers of the brig or brigantine types. The first of these Derby ketches built especially for the Indian trade was the *Eliza*, which was 93 ft. long, 25 ft. beam, and only 9 ft. deep. She was a very beamy, shallow vessel, with fine lines (especially aft), a weak midship section, a very low block coefficient, and a tonnage rated at 184 tons. On her maiden voyage, the *Eliza* sailed from Salem under Capt. Stephen Phillips on December 23, 1794, and went direct to Calcutta, where she loaded 240,000 pounds of sugar and some other goods. She reached Salem to complete her return passage on October 7, 1795, making the round voyage in the splendid time of 9 months and 15 days. The second of the two Derby ketches built especially for the Indian trade was named the *John*. She was a deeper vessel than the *Eliza*, but of the

same length, beam, and rig, measuring 258 tons. The *John* sailed on her maiden voyage on June 16, 1795, under Capt. Jonathan Derby for Calcutta, touching at the Isle of France, Madras, and Tranquebar en route. She reached her outward port of destination January 1, 1796, and, returning, visited the Isle of Bourbon. She arrived home (Salem) on August 12, 1796, with a rich cargo of merchandise, pepper, and coffee. The *John* was turned around quickly at Salem, for on September 17, 1796, Mr. Derby, the owner, wrote Capt. "Jona" Derby a letter of instructions for the ship's second Indian voyage, of which the following are extracts:

The Ketch *John* of which you are Master being now ready for sea, I do advise and order you to come to sail and make the best of your way for Corunna, in Spain, and there sell what you can to advantage for Dollars, and be sure you do not run any risque of being seized, and then make the best of your way for France and at any Port where you find the best Market, dispose of your present cargo, my wish is to procure about one half the amount in Spanish Dollars, the other half if Brandy is low, say at half a crown or a small matter higher, lay it out in Brandy—a few casks of Claret wine if cheap. The Brandy at that price you may safely calculate to pay you one hundred per cent. See that every cask is in good order, 4 Iron hoops on each, and if any one is not so good, let it be put between decks. I mean you should do your own business and whatever agreement you make with any merchant, have it in writing that you shall be dispatched in so many days as you shall agree upon—the price of the goods stipulated, and that you are not to pay any commissions, as I really believe it will be the best in the end. You are to go this voyage the same as all my other Captains, that is to put in five per cent of the stock out and to receive ten per cent of the stock at home. . . . When you have completed your business [in France] make the best of your way for the Island of Bourbon, and then if you can do tolerable well—I think you had best agree for your cargo for so many sacks

of Coffee to be dispatched in so many days. I calculate you will have considerable more than will load your ship with Coffee—in that case let your mate tarry there to ship on some other vessel, or tarry yourself if the quantity is large or if you think best take an obligation from some of the best men in the Island to deliver it to my orders—but if you cannot make out to your mind at Bourbon you may go to the Isle of France and finish your business there but if that will not do, go to the Coromandel Coast and dispose of your cargo, taking considerable Pulicat Handkerchiefs, and then to Calcutta and there taking in for Ballast about 40 or 50 tons of Sugar, and fill up the ship with the best of white Ginger—some Bales of Blue Gilly Handkerchiefs, some of Mock Pulicat, some bales of Blue M—— cloth and then make the best of your way for Salem.

It is my orders in case of any accident happening to Capt. Derby that Nathan Robinson, the assistant to Capt. Derby and Mr. Tibbetts the mate take charge of the Ketch and Cargo, and finish the voyage taking these orders as their guide. I think I had rather you would take 4500 Bales of Coffee at Bourbon, to be dispatched in 15 or 20 days for the whole stock than to go on to India but I think you will purchase more than that as the voyage in that case would be a short one and but little expense compared with the other.

The ketch *John* cleared Salem for Corunna, but went to Bordeaux instead and sailed from there for the Cape of Good Hope and the Isle of France. On June 4, 1797, Capt. Jonathan Derby wrote the vessel's owner from the Isle of France that he was sending the *John* home under Mate Tibbetts as master, with Mr. Robinson the supercargo, as he had decided not to go to India because of "the very unfavorable accounts" which he had received from that quarter, and he felt that he should personally remain at the Isle of France because of the large amount of property "in this colony" owned by Mr. Derby, which included much of the discharged cargo of the *John*—then unsold. The captain referred to the fact that the "present situation of affairs between France and America" necessitated care in handling Derby-owned property. The *John*, on her homeward passage, was taken by the French privateer *Jean Bart* on August 31, 1797, which put a prize crew of twenty men aboard her, but on September 15 the American "catch" was captured by the British frigate *L'Amiable* off the northeast coast of Puerto Rico. The British Admiralty prize court at Tortola was compelled, because of the facts, to turn the "catch" *John* back to her American owner, but the decree of October 25, 1797, required that "one-eighth part of the gross value of the said brigantine or catch *John* . . . be paid to her recaptor." The value of the *John* and her cargo was placed at £31,797, and records show that the British demanded and obtained \$10,117 as prize money and \$2,845 for court costs, but in any event Mr. Derby obtained

possession of his ketch. Mr. Derby was indignant at the attitude of the British, for he protested and appealed the court ruling and wrote his agent:

They obtained a sentence against one-eighth of the vessel and cargo, although it was clear that she was no prize to the French, and, of course, could not be one to them, vessels under similar circumstances, coming from the Isle of France to the United States, having been cleared in the admiralty at Guadaloupe. Not content with taking his eighth, at a fair and impartial valuation by disinterested persons, or an eighth of the goods as they rose, the agent insisted on valuing the vessel and cargo as he pleased—nearly 200 per cent. above what it ought to have been,—in this unprecedented manner fixing the amount of the eighth; and then demanding his payment out of those goods in the cargo, that he had purposely stated at a lower rate than the others; threatening, that unless a compli-

ance was made with his infamous demands, that he would obtain an order from the judge, to have both the vessel and cargo sold at auction, and, in this manner, take from them both their neutral quality. Unless the payment of a prohibitory duty could be submitted to, it must have been sent to London in British bottoms. Besides this, he must have submitted to a rule established by the judge, of allow 5 per cent. to the agent for sales, $2\frac{1}{2}$ auctioneer's fees, $2\frac{1}{2}$ wharfage, storage, etc., and other charges, amounting in all to $22\frac{1}{2}$ per cent. Knowing it to be the judge's determination to expose him to these difficulties, he complied with their exactions, and I am deprived of nearly one-quarter of the property, instead of one-eighth—or of no part, had justice been done.

The *John* reached Salem January 19, 1798, seven and a half months after leaving the Isle of France and after a voyage of some sixteen months' duration. Capt. Jonathan Derby did not return home until many months later; his health was impaired, and he died within a year. The brig *Leopard*, belonging to William Gray, of Salem, arrived at Salem in November 1797 and had a good deal of merchandise aboard belonging to Mr. Derby, shipped home by Capt. Jonathan Derby of the ketch *John*. The records show that for various Derbys, the *Leopard* landed 105,000 pounds of coffee, 21,000 pounds of indigo, and 7,655 pounds of sugar; she also carried a draft of \$14,623 from the captain of the *John* for Mr. Derby.

The ketch *John* lay at Salem over four months, during which time she was fitted with guns and became one of the first armed Salem vessels during the Undeclared War with France. On May 26, 1798, she cleared for Cadiz with Capt. Stephen Phillips (late of the *Eliza*) as master. After completing a profitable Mediterranean voyage, the *John* was re-sparred and rigged as a three-masted ship and sailed from Salem, as such, for Surinam on June 25, 1799, under Capt. Joseph Ropes. Elias Hasket Derby died September 8, 1799. His heirs operated the ship *John* for several years and then sold her to the Crowninshields, of Salem, who in the War of 1812 fitted her out as a privateer with 16 guns and 160 men. She was successful on her first cruise, taking eight prizes, but on her second cruise was taken by the more heavily armed British brig *Peruvian* on February 5, 1813.

William Gray, who became the greatest shipowner and shipping merchant in the United States, launched into foreign trade as soon as the Revolution was over, and he was one of the first Salem merchants to embark in trade with China and India. In 1792 he sent the brig *Enterprise* on a voyage to the East, and his preserved letter of instructions to Capt. William Ward ordered the vessel to proceed to the Cape of Good Hope, Isle of France, and "Calcutta in the Bay of Bengal and there take sugar, saltpeters, bandanno silk handkerchiefs or such other goods as you suppose will answer best in this market." Mr. Gray found Salem an inadequate port for the operating and handling of big ships in foreign trade because of shallow water and an inferiority to such ports as New York and Boston in the receiving and distribution of cargo, etc. Therefore, he used better located ports, with deeper water, quite extensively and in 1809 moved to Boston. At that time, records show, Mr. Gray was the owner of fifteen ships, seven barks, thirteen brigs, and a schooner. In January 1797, Capt. William Ward took Mr. Gray's ship *John* of 175 tons (built in 1795) from New York direct to Calcutta, and the owner's letter of instructions to Captain Ward requests that he return with 120 tons of sugar, filling the ship with such other goods "as will answer best in this market, such an assortment as you brought the last voyage with the exception of bandanno handkerchiefs"; moreover, a shipment of ginger is suggested instead of pepper (which too many ships were bringing to Salem direct from Sumatra).

Early Fast Passages of United States Ships in the Indian Trade

In the early Federalist period, American ships were making fast passages to and from ports in the Indian Ocean. The Salem, Mass., ship *Belisarius* of 261 tons (Capt. George Crowninshield), built in 1794, arrived home July 26, 1796, and reported a passage of 70 days from the Isle of France (Mauritius) and a round voyage completed in seven and a half months. Old records show, however, that the Philadelphia brig *Rose* arrived home (or at some point in the Delaware, where the passage was considered to end) on June 8, 1796, having made the run from the Isle of France (in the Indian Ocean) in 68 days, during which, it was claimed, she had sailed from the Cape of Good Hope to the Delaware Capes in the amazing time of 43 days. It was also said that the *Rose* had completed a round voyage from Philadelphia to Port Louis (Mauritius) and return, including port detention, in 6 months and 19 days. On January 17, 1805, the Salem-built and owned ship *Hazard* (325 tons; launched in 1799) arrived home under Captain Burril and reported a run of only 64 days from Bourbon (Réunion), an island in the Indian Ocean near Mauritius.

The ship *America* is reported to have arrived at Boston in March 1800, having made a passage from Calcutta in 103 days, said to be a record between the ports; but on April 9, 1801, the *Indus* (Captain Chapman) reached Boston and claimed a passage of only 96 days from pilot off Sand Heads, Calcutta. On March 25, 1808, the Girard ship *Montesquieu* (Captain Wilson) reached the Delaware, making a passage reported as 86 days from Madras, India, and on March 28, 1808, we are told, the *Pekin* (Captain Swain) "took her pilot off Cape Henlopen after a passage of 102 days from Calcutta."

Forty-two years before the extreme clipper *Witch of the Wave* (1,498 tons) made her 81-day all-time record from Calcutta to New York, the little brig *Fox* of only 225 tons (90 ft. long, 23½ ft. beam, and 12 ft. deep), built by Henry Eckford, New York, arrived at New York on December 26, 1809, after a passage of only 90 days from Calcutta and an absence from New York on her maiden round voyage to India and return of only 7 months and 14 days. This was an outstanding speed record of the first decade of the nineteenth century, and the *Witch of the Wave*, which took the sailing honors in 1851, was 6⅔ times as large and 2½ times as long as the speedy little *Fox* and was built forty-two years after her.

Following the close of the War of 1812, the fast American ship *Trident* of 461 tons, built in 1805 by A. & N. Brown, New York, arrived at New York in November 1816 under the command of Captain Rae, who reported a passage of 102 days from Sand Heads, Calcutta, during what was generally considered the unfavorable monsoon season. On January 3, 1818, the *Glide* of 306 tons (Captain Tucker), built at Salem in 1811, arrived home and reported a run of 98 days from Sand Heads, and on April 3, 1819, the ship *Cirie* of 353 tons reached New York and claimed a record run of 97 days from Calcutta (Sand Heads).

The "Salem Packet" *George* (328 tons; built at Salem in 1814 for a privateer and owned by Joseph Peabody) left Salem, Mass., May 25, 1822, under the command of Capt. Samuel Endicott, crossed the equator twenty-four days later, reached the Cape of Good Hope in 51 days, and took pilot off Sand Heads for Calcutta August 22 after a passage of only 89 days 4 hours. In 15 days (July 24-August 7), running up the Indian Ocean, the *George* (or *The George*) covered 3,118 miles, an average of 208 miles per day and 8.7 knots per hour; her best day's run was 240 miles (10 knots per hour), and her spurt speed was 11 knots by log. Continuing in the United States-Indian trade, the "Salem Packet" made other runs of 97, 100, and 101 days to Calcutta. The ship, which was 111 ft. long and 27 ft. beam (a ratio of

4.1 to 1), was no clipper and was incapable of clipper speed; yet she made long passages in clipper ship time by maintained good sailing. The early Boston transatlantic packet *Emerald* (359 tons; 110 ft. long and 27 ft. beam; built in 1822 by John Wade, Boston) arrived off Boston Light, Mass., in 1829 after a passage reported by Capt. Augustine Heard of 91 days 20 hours from Sand Heads (Calcutta), and the ship *America* (418 tons; 119 ft. long and 28 ft. beam; built at Newburyport in 1822) arrived off Sand Heads July 28, 1833, only 89 days out from Boston, which performance was within $3\frac{1}{3}$ days of the clipper ship *Beverly's* all-time record established some twenty-four years later.

American-built Clipper Ships in the Indian Trade

There was never the demand for speed in the Indian trade that developed in the China run and later in the California and Australia trades. India was a land of bulky freights (as were the Philippines), and few of its cargoes compared in value with those of China. Moreover, in the tea trade, the ships, because of the cargo, which deteriorated with age, had to run for market, and a bonus was paid for speed. In the thirties and forties of the nineteenth century, China trade, with its call for speed, eclipsed that of India, and following the discovery of gold in California and Australia "speed was king." Around mid-century, clipper ships were sent from East Coast United States ports to San Francisco and a little later to Australia (principally from British ports), and these clippers, being unable to obtain return cargoes in California (and the Pacific Northwest) or Australia, looked to oriental ports to give them paying freights to carry home. When the volume of goods available for shipment from China to North Atlantic ports proved inadequate to supply the demand for the greatly increased marine tonnage, ships looked to East Indian and Indian ports for return cargoes, and by 1854 Calcutta and Bombay were supplying freights (as was also Manila) for returning clippers engaged in the California and Australia trades. The India-United States trade, which had not been conspicuous as to volume for many years, boomed during the years 1854-1857 of the clipper ship era. Massachusetts ports (Boston and Salem), from the early days of the republic, had done the bulk of the trading of United States ports with Indian and East Indian ports (Calcutta, Bombay, and Manila), and during the first six years of the fifties (the clipper ship decade) about four times as many Indian passages originated and terminated at Boston as at New York (America's premier port). However, from 1858 to the end of the Civil War (1865), New York shared pretty evenly with Boston in a greatly lessened number of clipper ship passages made between Indian and United States ports, and during this period American ships made very few passages in the British-Indian trade.

Some United States-built clipper ships made outstanding records for speed in the Indian trade. The performance of the *Sweepstakes* (1,735 tons) in running from New York to Bombay in 1857 in only 74 days and returning in 80 days, thus completing a round voyage in only 154 days at sea, has never been equaled between any North Atlantic and Indian port. The *Jacob Bell* (1,381 tons) made a fine passage of 77 days from New York to Bombay in 1856; the *James Baines* (under the British flag), on her last voyage before being burned at her dock at Liverpool in April 1858, ran from Calcutta to Liverpool in the record time of 77 days. The *Witch of the Wave* (1,498 tons) made the all-time record passage from Calcutta to Boston in 81 days in 1853, running from Sand Heads to the Cape of Good Hope in 37 days. The *Staffordshire* (1,817 tons) went over this course some two and a half months

earlier in 83 days (reported as 82 days—and a record at the time), and the little *Beverly* of 676 tons, in late 1855 (arriving at Boston January 4, 1856), made the homeward run between the ports in 83 days. The *Beverly* also holds the all-time record from Boston to Calcutta, making an eastward run between the ports in the fall of 1857 in 85 days 16½ hours, pilot to pilot. The *Typhoon* (1,611 tons) went out to Calcutta from England in 80 days from the Lizard in 1854, and the *Hurricane* (1,608 tons), on a passage from London to Calcutta in 1855, was 82¼ days from the Needles to the mouth of the Hooghly River. This clipper, on her return passage in early 1856, ran from Sand Heads, Calcutta, to Falmouth, England, in 83 days, which was reported as "79 sailing days," and it was claimed that she had made a round voyage between England and Calcutta in only 161 sailing days. The *Flying Scud* (1,713 tons) ran from New York to Bombay in 81 days in April-July 1856. The *Webfoot* (1,091 tons), in the winter of 1858-1859, made the passage from Calcutta to New York in 85 days, and on February 4, 1866, the *Longwood* (1,179 tons), built at Newburyport, Mass., in 1863 as a good-carrying and economically rigged "half clipper," reached New York from Calcutta to complete a fast passage of 86 days, beating the extreme clipper *Antelope* (1,186 tons) three days on the run.

The *Panther* (1,278 tons) was a medium clipper built by Paul Curtis at Medford, Mass., in 1854 that was used extensively in the Indian trade during the years 1854-1862. Although this ship was generally acknowledged as a fast sailer in the Cape of Good Hope trade, she was slow on the Cape Horn route, for the average length of her six westward passages from either Boston or New York to San Francisco was 150 days. Her first three long-distance voyages (following a run from Boston to New Orleans and a transatlantic passage thence to Liverpool) were in the British-Indian trade. On these outward runs in 1854, 1855, and early 1857 (one from Liverpool and two from London) to Calcutta, the *Panther* did some good uniform sailing, averaging 94⅔ days per passage (best, 92 days; slowest, 99 days). The two return passages, on which she enjoyed fair luck, were made in 100 days to London and 91 days to Boston, respectively, an average of 95 days for five runs in the Indian service. On the return trip of her second England-Calcutta voyage, the *Panther* had severe adverse weather in the Bay of Bengal and Indian Ocean and did not clear the Cape of Good Hope until 70 days out. In 1859, following an arrival at Calcutta from San Francisco, the *Panther* made a run of 99 days from that Indian port to New York, which was fair time and would have been fast but for bad weather experienced in the North Atlantic, where she was held for twelve days north of Bermuda. In 1861 the ship went out from Liverpool to Calcutta and Bombay and returned to Boston from Calcutta, arriving home August 31, 1862, having had "no sailing chance." She encountered light head winds and calms in the Bay of Bengal, no favorable trades, and "a long succession of westerly gales from Madagascar until west of the Cape." Of the nine passages made by the *Panther* in the Indian trade, four were outbound from British ports and five homeward runs, two to British and three to United States East Coast ports. On the six passages where good or fair sailing conditions were experienced, the *Panther* averaged 95⅔ days per passage—which is good sailing. The ship was lost by stranding when in tow leaving a British Columbia port in January 1874; she was in her twentieth year at the time.

The *Meteor* (1,068 tons), a medium clipper built by the Briggs yard at South Boston in 1852, was a Cape Horner. Prior to 1862, when the ship was sold in the Far East to the British, the *Meteor* made five passages in the Indian trade (one outbound from England, three homeward bound from Calcutta to Boston, and one from Rangoon to Falmouth, England, in 110 days in the fall of 1857). She averaged 98.6 days per passage, her three runs home to Boston averaging 96⅓ days and being amazingly uniform (95 days in 1853, 98 days to Boston—but only 93 days to Cape Cod—in 1854-1855, and 96 days in 1860). In 1861 the *Meteor* ran from England to Calcutta in 94 days, and the average of her four passages (three from and one to Calcutta) was only 95¾ days.

The *Dashing Wave* (1,180 tons), which lived to the ripe old age of sixty-seven years, was a medium clipper built at Portsmouth, N.H., in 1853. Designed as a Cape Horner, this vessel made five passages from Calcutta to Boston during the years 1854-1860 to complete her voyages and averaged 99 days; three of them averaged a scant 91 days. The best run of the *Dashing Wave*, made in late 1857, occupied only 84 days, being beaten by only the *Witch of the Wave* (81 days), *Beverly* (83 days), and *Staffordshire* (83 days) and equaled by only the *Charger*.

The *Nor'wester*, a clipper of 1,267 tons built by Lapham at Medford, Mass., in 1854, on her second voyage (1855), made an excellent run from Boston to Calcutta of 87 days; she returned in 95 days and averaged 91 days for these two passages. This outbound passage is evidently the second best on record between the ports, being beaten by only the 86-day run of the *Beverly* made in 1857. This fine passage of the *Nor'wester* was reported as 86 days 21½ hours, although some records refer to it as a 91-day passage, but say that it was an "89-day run, pilot to pilot." The time from the meridian of Greenwich (in Lat. 38° S.) to the Calcutta pilot grounds, stated as 36½ days, was very fast sailing. One marine authority says that the *Nor'wester*, after making the second all-time fastest record from Boston out to Calcutta in a scant 87 days, pilot to pilot, which includes time lost by anchoring in a calm overnight off Sand Heads before the pilot was taken aboard, "returned to Boston in 86 days." This does not check with other available records of the return passage, which was evidently an unlucky one, as the ship, sailing on December 15, 1855, lost her fore-topmast, main topgallant mast, and jib boom on January 24, 1856, in a violent gale off Algoa Bay, South Africa, and had to put into St. Helena because of cholera aboard. The arrival at Boston is said to have been March 22, 1856, or ninety-eight days after the reported date of sailing from Sand Heads. It was said that the *Nor'wester* was at St. Helena three days and made the run in 95 sailing days. If the passage claimed of 86 days is correct, then they must be net sailing days on the course, and the round voyage would have been made in some 172 net sailing days; whereas the evidence suggests 181 days (86 days out and 95 days return). On her next voyage, which was around the Horn to California, the *Nor'wester* went from Calcutta to Falmouth, England, in the slow time of 135 days. On Voyage No. 5, she ran from Calcutta to Boston in 106 days and the next year occupied 113 days traversing the same course, making her average for five passages 108 days.

The *Cyclone* (1,109 tons), another medium clipper built in 1853 and sold to the British in 1863, made five passages in the Indian trade during the years 1855-1858 inclusive, two outbound to Calcutta (one from Boston and one from London) and three from Calcutta to Boston. The outward runs averaged 105½ days, the homeward runs 112 days, and the average of the five passages in the trade was 109.8 days. The fastest sailing of the *Cyclone* in the Indian trade was shown in 1858 on her last voyage in that service; she went out from London to Calcutta in 99 days and returned thence to Boston in 108 days.

The clipper ship *Mystery* of 1,155 tons, built by Samuel Hall, East Boston, in 1852-1853, made only one complete voyage for her original American owners (Boston-San Francisco-Shanghai-London) before being sold at London in March 1854 to British owners interested in the Indian trade. Her maiden voyage under the British flag was between London and Bombay: 101 days out and 98 days return—a round trip of 199 days at sea—which was deemed "fast and most satisfactory." The *Mystery* was then sent out to Australia and made a run from London (Deal) to Sydney (July-October 1855) in 92 days; she then proceeded to Calcutta, loaded for London, and had very bad luck on her run home, requiring 147 days to reach Deal. On her third voyage under British ownership, the ship, in November 1856-August 1857, went out to Bombay in 102 days and returned to London in 112 days. The average of her first five passages in the British-Indian trade was, therefore, 112 days (101½ days out for two trips from London to Bombay and 105 days return); but her long passage

from Calcutta to London sent her average up from $103\frac{1}{4}$ days for four passages to 112 days for five.

The medium clipper ship *Syren* (1,064 tons), built by John Taylor, Medford, Mass., in early 1851 for Silsbee, Pickman et al., Salem, Mass., was intended for the East Indian service; but because of trade conditions, she became a Cape Horner, was sold several times, and, when seventy years old, was listed in Lloyd's as the Argentine bark *Margarida*. In 1857, after five voyages in the California trade, the *Syren* went from Boston to Calcutta in 99 days and returned in 97 days, occupying 196 days at sea for the round voyage. On two later occasions, the last lap of her voyages in the Cape Horn and around-the-world trade via San Francisco consisted of 104-day passages from Calcutta to Boston, so her average of four runs in the Indian trade (one outward and three homeward bound) was 101 days. The little medium clipper ship *Hippogriffe* of 678 tons, built at East Dennis on Cape Cod in early 1852, after a maiden voyage in the California Cape Horn trade, made two voyages in the Indian trade and averaged $109\frac{1}{4}$ days for the four passages ($108\frac{1}{2}$ days out and 110 days home). The first of these voyages was from Boston to Calcutta and return to Philadelphia, and she went out in 110 days and returned in 112 days. The second originated at London, and the vessel went out to Calcutta in 107 days and returned to Boston in 108 days.

The *Hurricane*, an extreme clipper of 1,608 tons built in New York Harbor on the Jersey side of the North River in 1851, made some fast runs in the fifties before being sold to the British at Singapore in early 1860. The last lap of her third voyage in the Cape Horn California trade was a run from Calcutta to London (February-April 1855) in 100 days. The ship then made a round voyage from London to Calcutta and return under British charter, running out from the Needles in 82 days 6 hours and returning in early 1856 from Sand Heads to Falmouth in 83 days, with a passage reported as occupying only "79 sailing days." It is said that this round voyage was the all-time fastest record between England and an Indian port and is reported as 161 sailing days. The three passages made by the *Hurricane* in the British-Indian trade of 100, 82, and 83 days, respectively, average about 88 days, which is fast, but her round voyage of 1855-1856 averages $82\frac{1}{2}$ days from the Needles to Sand Heads and return to Falmouth and $80\frac{1}{2}$ sailing days as reported.

The *Beverly* (676 tons), for a small medium clipper that had the reputation of being a good carrier, made some fast runs in the U.S.A.-India trade. She was a Boston-owned ship built at Medford, Mass., in early 1852. In 1855 the *Beverly* was sent out to Australia; returning, she ran from Sand Heads, Calcutta, to Boston (October 13, 1855-January 4, 1856) in 83 days, which stands as the second fastest all-time record between the ports. On August 29, 1857, the *Beverly* sailed from Boston for Calcutta and arrived at Sand Heads November 23 after a passage of 86 days and 85 days $16\frac{1}{2}$ hours, pilot to pilot, said to be the all-time record between the ports. Continuing, the little ship went from Calcutta to San Francisco in 80 days (evidently within one day of the record) and, after loading lumber at Puget Sound, ran to Valparaiso in 52 days. For several years, the *Beverly* traded with Australia, India, and in the Pacific. There is a report that in 1862 she ran out from Liverpool to Calcutta (length of passage unstated) and, returning to the North Atlantic, reached Boston June 15, 1863, after a run of 108 days from Calcutta. The average of the three stated lengths of passages of the *Beverly* in the Indian trade, all between Boston and Calcutta (one outward and two homeward), is $92\frac{1}{3}$ days. During the Civil War, the *Beverly* was "sold foreign," but before she changed her flag and register, she outsailed the Confederate raider *Florida* and escaped capture.

The extreme clipper ship *Game Cock* of 1,392 tons, built by Samuel Hall, East Boston, in late 1850, while somewhat of a disappointment to her owners in speed, nevertheless, was very fast and did some good sailing in Cape of Good Hope runs, the Indian Ocean, and Eastern waters. In 1859 she ran from New York to Java Head in 76 days and made 337 miles in one day. Returning, she made a passage of 87 days from Colombo to New York

(June-August 1861), and although deep laden and with her sail spread and crew cut down in the interest of economy, she covered 342 nautical miles in one day and 2,143 miles in seven consecutive days—an average of 306 miles per day and a record for those waters. In 1856 the *Game Cock* went out from New York to Bombay in 97 days and returned from Calcutta to Boston in 94 days. The average length of these three stated passages of the *Game Cock* in the U.S.A.-India trade during the years 1856-1861 was $92\frac{2}{3}$ days. The ship made some fast passages in the late sixties and seventies, such as 92 days from New York to Hong Kong and 75 days from New York to Melbourne. She ended her days at South Africa in 1880, when thirty years old.

The Maine-built clipper *Flying Scud* of 1,713 tons, the holder of the record for the biggest day's run ever made by a sailing vessel, is known to have made three passages in the Indian trade. One of them, a run of 81 days from New York to Bombay in 1856, was very fast, although it was four days longer than a passage made between the same ports by the *Jacob Bell* (1,381 tons), which sailed one month before her and encountered better sailing conditions over the course. In 1859 the "*Scud*" made the fastest passage of the year between a British port and Bombay with a run of 92 days to Liverpool, but in 1855 she required 110 days to make a summer run from Calcutta to Liverpool. The average of these three passages of the *Flying Scud* in the Indian trade (one outward and two homeward) was $94\frac{1}{3}$ days.

The *Typhoon* was an extreme clipper of 1,611 tons, launched at Portsmouth, N.H., February 18, 1851, that showed her speed by running across the Atlantic in better than 14 days the first time that she moved under canvas; she was the first American clipper to be seen at Liverpool and the largest merchant ship to enter the Mersey. Following her transatlantic voyage, the *Typhoon* went from New York around the Horn to San Francisco (108 days) and, continuing westward around the world, was 79 sailing days to Calcutta and 107 days thence to London, making the run from Sand Heads to the Cape of Good Hope in only 37 days—a performance never beaten and equaled by only the *Witch of the Wave*. Completing her next voyage from New York to California, the *Typhoon* carried tea from Shanghai to London (106 days) and was then chartered by the British for an Indian voyage. She went out from London to Calcutta in 87 days, being only 80 days from the Lizard to the mouth of the Hooghly River, and returned in 94 days from Calcutta (Sand Heads) to London (Deal). The average length of these three passages of the *Typhoon* in the British-Indian trade (one outward and two homeward) was 96 days; but on the one round voyage between England and Calcutta the time at sea was 181 days (an average of $90\frac{1}{2}$ days per passage), and the run from the Lizard to Sand Heads and return to Deal occupied only 174 days (an average of 87 days per passage). The *Typhoon* was sold in 1863 at Singapore to the British because of conditions brought about by the Civil War.

The *Messenger* (1,351 tons), an extreme clipper built by Jacob Bell, of New York, in early 1852, was shortly thereafter bought by William Platt & Company, Philadelphia. In 1856 the last leg of an around-the-world via California voyage was a passage of 95 days from Calcutta to Philadelphia. This was followed by an excellent run from New York out to Bombay in 90 days, the ship having to buck an adverse monsoon in the Indian Ocean. From Bombay the *Messenger* returned to Liverpool in 104 days under weather conditions that were not favorable for speed. These three passages of the clipper in the Indian trade averaged $96\frac{1}{3}$ days.

The medium clipper *Edwin Forrest* of 1,141 tons, built by Kelly, East Boston, in 1853, concluded her first long voyage in 1854-1855 with a run of 106 days from Calcutta to London. She was then chartered by the British for a round voyage in the Indian trade and went out to Calcutta (time unknown), returning to London May 13, 1856, after a good passage of 98 days. Concluding a later voyage in 1858-1859 from New York to San Francisco, thence to Melbourne and Calcutta, the "*Forrest*" ran from the Indian port to New

York in 102 days. The average time of the three of her four known passages in the Indian trade for which records are available was 102 days.

The *Flying Dragon*, a fast ship of 1,127 tons with clipper characteristics built at Bath, Maine, in 1853, is known to have made four passages in the Indian trade during the period 1854-1857. She sailed from New York October 30, 1854, for Calcutta and went out in 101 days, returning to Boston in 100 days. In 1856 the last leg of a California around-the-world voyage was a run from Calcutta to Boston in 125 days. The following year over the same course, the "*Dragon*" ran from Sand Heads (September 16, 1857) to the Cape of Good Hope in 49½ days, but the date of her arrival in Boston is unknown. The average of her three Indian passages for which the time is known was 108⅔ days.

Other American clippers with three records of Indian passages available were the *Mary* of 1,148 tons (built at Marblehead, Mass., in 1854), which reported a passage of 107 days from Calcutta to Boston in 1856 and runs from Calcutta to London of 114 days in 1857-1858 and of 118 days in 1863—an average of 113 days for three homeward passages; the *Southern Cross* of 938 tons (built by Briggs, East Boston, in early 1851), which reported three passages from Calcutta to Boston in the years 1852, 1854, and 1856 in 97, 119, and 124 days, respectively, an average of 113⅓ days; and the *Fleetwood* of 663 tons (built at Portsmouth, N.H., in 1852), which made a run from Boston to Calcutta in 1854-1855 in 116 days, went over the same course the following year (1855-1856) in 112 days, and sailed from Calcutta home to Boston in 1855 in 133 days—an average for the three recorded passages of 120⅓ days.

The time occupied at sea by American clippers making round voyages in the Indian trade ran from 154 days (New York-Bombay in 1857-1858) for the *Sweepstakes* of 1,735 tons, 161 sailing days (Needles-Calcutta-Falmouth in 1855-1856) for the *Hurricane* of 1,608 tons, and 174 days (Lizard-Calcutta-Deal in 1854-1855) for the *Typhoon* of 1,611 tons. Other round voyages as reported, with the length of the recorded two passages (out and home) added, were:

| Name of Clipper | Ton-nage | Date and Indian Port | Length in Days at Sea | Name of Clipper | Ton-nage | Date and Indian Port | Length in Days at Sea |
|-----------------|----------|------------------------------------|-----------------------|-----------------|----------|-------------------------|-----------------------|
| JAMES BAINES | 2,515 | 1857-1858 (Calcutta) | 179 | MYSTERY | 1,155 | 1854-1855 (Bombay) | 199 |
| MESSINGER | 1,351 | 1856 (Calcutta and Bombay) | 185 | HORNET | 1,426 | 1856-1857 (Calcutta) | 199 |
| NOR'WESTER | 1,267 | 1855-1856 (Calcutta) | 186 (184 s.d.) | SIMOON | 1,436 | 1858-1859 (Bombay) | 201 |
| MATCHLESS | 1,033 | 1854-1855 (Calcutta) | 188 | FLYING DRAGON | 1,127 | 1854-1855 (Calcutta) | 201 |
| DAVID BROWN | 1,717 | 1855 (Bombay) | 188 | RADIANT | 1,318 | 1856-1857 (Calcutta) | 205 |
| DAVID CROCKETT | 1,679 | 1855 (Aden and Bombay) | 189 | ARCHER | 1,095 | 1855-1856 (Calcutta) | 213 |
| GAME COCK | 1,392 | 1856-1857 (Bombay and Calcutta) | 191 | MYSTERY | 1,155 | 1856-1857 (Bombay) | 214 |
| MESSINGER | 1,351 | 1856-1857 (Bombay) | 194 | HIPPOGRIFFE | 678 | 1854-1855 (Calcutta) | 215 |
| SYREN | 1,064 | 1857-1858 (Calcutta) | 196 | HIPPOGRIFFE | 678 | 1853-1854 (Calcutta) | 222 |
| PANTHER | 1,278 | 1854 (Calcutta) | 199 | CYCLONE | 1,109 | 1855-1856 (Calcutta) | 222 |

Of the twenty-three round Indian voyages mentioned, which occupied from 154 to 222 days at sea, six were from U.S.A. ports to Calcutta and return, five from British ports to Calcutta and return, four from British ports to Bombay and return, two between a U.S.A.

port and both Bombay and Calcutta (the deep-sea ocean passage alone being considered on the length of the round ocean voyage), two between a U.S.A. and a British port via Calcutta and two via Bombay, one from a British port out to Aden, returning from Bombay, and one a round voyage between a U.S.A. port and Bombay. Fourteen of the round voyages either originated or terminated at a British port and thirteen at a U.S.A. port. Sixteen of the voyages were to or from Calcutta, nine to or from Bombay, and one was out to Aden.

Ships engaged in the Indian trade did not make a quick turn-around at the Indian end, and Calcutta was a notoriously slow port to enter, discharge, load cargo, and depart therefrom. After the pilot was taken aboard off Sand Heads, delay was often experienced in entering the river; the passage up and down the Hooghly River was often a tedious affair, and to this was added the time taken changing the position of the ship when discharging and loading cargo. The record time of a round voyage in the North Atlantic port-India trade of 154 days at sea, held by the *Sweepstakes*, occupied 10 months 11 days from New York (May 9, 1857) to the return to New York (March 20, 1858), and this voyage was to and from Bombay, which was a much easier port to enter and leave than Calcutta; nevertheless, the clipper was held there from July 22 to December 30, a period of 5 months and 8 days (161 days). The *Nor'wester*, with a round voyage of 184 sailing days, left her pier at Boston June 22, 1855, and returned from Calcutta March 22, 1856, after an absence of 9 months (274 days). The medium clipper ship *Santa Claus*, when she reached Boston August 15, 1855, boasted of the fact that she had made a round voyage from Boston to Bombay and return in exactly 9 months (or 273 days); but the lengths of her sea passages were not good, the homeward run being made in 114 days, and the outward passage (time unknown) was referred to as an average run, considering sailing conditions. The *Hurricane* reported a round voyage at sea from the Needles to the mouth of the Hooghly and back to Falmouth in $165\frac{1}{4}$ days and $161\frac{1}{4}$ sailing days, and the dates reported (August 12, 1855, to April 2, 1856) figure 7 months and 21 days (234 days) for the round trip, including 69 days' detention at the Calcutta end. However, some records give the entire length of the round voyage, London to Calcutta and return to London, as 9 months and 10 days (284 days). The *James Baines* is said to have made a round voyage between England and Calcutta in 8 months and 8 days (251 days), of which 180 days were spent at sea and 71 days at the Calcutta end; this, however, was not a commercial voyage, as the "*Baines*" was chartered by the British Government to take troops and supplies out to India during the Indian mutiny in 1857 and had certain official priorities. The American-built (but British-owned) clipper left her anchorage at Portsmouth, England, on August 8 with a thousand troops aboard, and these were quickly unloaded and the ship given "special dispatch" in discharging upon her arrival at the Hooghly.

United States-built clipper ships entered the Indian trade in 1852 and were quite active in both the British-Indian and American-Indian trade during the four years 1854-1857 inclusive. They made a noticeable number of voyages in the Indian trade during the seven years 1853-1859 inclusive, but withdrew in the early sixties and the years of the Civil War, at which time British-owned ships regained the monopoly of the British-Indian trade. The Indian trade with the United States reached a low ebb, from which it never recovered. Of the large number of passages made by American clipper ships in the Indian trade, data of some 165 passages, giving ports of departure and destination, dates, and length of run, have been found readily available. Consideration of them is of interest and affords an index, in a relative sense, of the nature and extent of the service during the years; for the passages recorded were not selected with any regard for the length of the runs or for any particular year, period, or ports of either departure or arrival. The 165 recorded passages consist of 41 outward runs from United States (17) and British (24) ports to India and 124 homeward runs from India to United States (92) and British (32) ports. Of the outward passages, $41\frac{1}{2}$ per cent and of the homeward passages, 74 per cent were from or to United

States ports. The date and nature of the clipper ship passages herein considered can be briefly summarized as follows:

| Year | Total Passages Considered | Outward | | | Homeward | | |
|-------------------|---------------------------|-------------------|--------------------|-----------|-----------------|------------------|------------|
| | | From U.S.A. Ports | From British Ports | Total | To U.S.A. Ports | To British Ports | Total |
| 1852..... | 2 | — | 1 | 1 | 1 | — | 1 |
| 1853..... | 9 | 1 | — | 1 | 8 | — | 8 |
| 1854..... | 27 | 3 | 4 | 7 | 15 | 5 | 20 |
| 1855..... | 37 | 6 | 5 | 11 | 17 | 9 | 26 |
| 1856..... | 28 | 4 | 3 | 7 | 15 | 6 | 21 |
| 1857..... | 22 | 3 | 5 | 8 | 8 | 6 | 14 |
| 1858..... | 11 | — | 3 | 3 | 6 | 2 | 8 |
| 1859..... | 8 | — | — | — | 6 | 2 | 8 |
| 1860..... | 3 | — | — | — | 3 | — | 3 |
| 1861..... | 6 | — | 3 | 3 | 3 | — | 3 |
| 1862..... | 4 | — | — | — | 3 | 1 | 4 |
| 1863..... | 3 | — | — | — | 2 | 1 | 3 |
| 1864..... | 1 | — | — | — | 1 | — | 1 |
| 1865..... | 4 | — | — | — | 4 | — | 4 |
| Total..... | 165 | 17 | 24 | 41 | 92 | 32 | 124 |

The following is a comparative record of each of the 165 Indian passages herein considered, with data of the size, age, and builder of the clipper ships making the runs:

| Name of Clipper | Ton-nage | Built (launched) | Builder | Departure | | Arrival | | Passage in Days |
|-------------------|----------|-------------------|--|-----------------------------|--------------------|---------|------------------|---|
| | | | | Port | Date | Port | Date | |
| 1852 | | | | | | | | |
| SOUTHERN CROSS | 938 | 1851 (Mar. 19) | E. & H. O. Briggs, East Boston | Calcutta | Feb. 13 | Boston | May 21 | 97 |
| | | | | | | | | Last lap of maiden voyage. Went from Boston to San Francisco and was at Calcutta (Sand Heads) Dec. 25, 1851, after a record run of 56 sailing days from San Francisco via Honolulu and Singapore. |
| TYPHOON | 1,611 | 1851 (Feb. 18) | Fernald & Pettigrew, Portsmouth, N.H. | Calcutta | 1852 | London | 1852 | 107 |
| | | | | | | | | Ran to Cape in 37 days. A performance equaled by only the WITCH OF THE WAVE in 1853. |
| 1853 | | | | | | | | |
| WITCH OF THE WAVE | 1,498 | 1851 (Apr. 6) | George Raynes, Portsmouth, N.H. | Calcutta (Sand Heads) | Apr. 13 | Boston | July 3 | 81 (all-time record) |
| | | | | | | | | Thirty-seven days to Cape of Good Hope. Record equaled by only TYPHOON in 1852. Crossed line 58 days out. |
| STAFFORD-SHIRE | 1,817 | 1851 (June 17) | Donald McKay, East Boston | Calcutta Sand Heads | Jan. 23 Jan. 26 | Boston | Apr. 20 | 83 (reported 82) |
| | | | | | | | | Thirty-nine days to Cape of Good Hope. Very fast. A record run at the time. |
| JOHN LAND | 1,054 | 1853 (Mar. 26) | E. & H. O. Briggs, South Boston | Calcutta (Sand Heads) | 1853 | Boston | 1854 | 88 |
| | | | | | | | | Last leg of maiden voyage. A fast run. |
| METEOR | 1,068 | 1852 (Oct. 27) | E. & H. O. Briggs, South Boston | Calcutta | Oct. 13 | Boston | Jan. 16, 1854 | 95 |
| | | | | | | | | Maiden voyage. Was 113 days from Boston to San Francisco (reported as 110); thence 83 days to Calcutta. |

(Continued on next page)

| Name of Clipper | Ton-nage | Built (launched) | Builder | Departure | | Arrival | | Passage in Days |
|-------------------------|----------|-------------------|--|--|---------|----------------------|-----------------|-----------------|
| | | | | Port | Date | Port | Date | |
| <i>1853—(Continued)</i> | | | | | | | | |
| R. B. FORBES | 757 | 1851 (July 31) | Samuel Hall, East Boston | Calcutta | Sept. 8 | New York | Dec. 18 | 101 |
| | | | | Last lap of second voyage. Was 127 days from Boston to San Francisco; thence 87 sailing days to Calcutta via Honolulu and Singapore. | | | | |
| WINGED ARROW | 1,052 | 1853 (Mar.) | E. & H. O. Briggs, South Boston | Calcutta (Sand Heads) | Apr. 23 | Boston | Aug. 3 | 102 |
| | | | | Last lap of maiden voyage. Was 113 days from Boston to San Francisco; 52 days to Singapore; thence to Calcutta. | | | | |
| HIPPO-GRIFFE | 678 | 1852 (Apr. 5) | Shiverick Bros., East Dennis, Mass. | Boston | 1853 | Calcutta | 1853 | 110 |
| | | | | Outward passage of second voyage. Returned to Philadelphia from Calcutta in 112 days. | | | | |
| POLYNESIA | 1,084 | 1852 (July 2) | Samuel Hall, East Boston | Calcutta (Sand Heads) | June 20 | Boston | Oct. 9 | 111 |
| | | | | Last lap of maiden voyage. Was 140 days from Boston to San Francisco; 65 days to Singapore; thence to Calcutta. | | | | |
| QUEEN OF THE PACIFIC | 1,356 | 1852 (Nov.) | Pembroke, Maine | Calcutta | 1853 | Boston | 1854 | 119 |
| | | | | Last lap of maiden voyage (Boston-San Francisco-Singapore-Calcutta). | | | | |
| <i>1854</i> | | | | | | | | |
| TYPHOON | 1,611 | 1851 (Feb. 18) | Fernald & Pettigrew, Portsmouth, N.H. | London Lizard | May | Calcutta Calcutta | 1854 | 87 80 |
| | | | | Outward run of a round voyage under British charter. | | | | |
| INVINCIBLE | 1,769 | 1851 (Aug. 6) | William H. Webb, New York | Bombay | 1854 | Liverpool | 1855 | 92 |
| | | | | Last lap of voyage as White Star liner (Liverpool to Melbourne, Australia). | | | | |
| LOTUS | 660 | 1852 (Oct. 26) | J. Taylor, Chelsea, Mass. | Calcutta (Sand Heads) | May 24 | Boston | Aug. 26 | 94 |
| | | | | Last lap of voyage, New York-San Francisco-Singapore-Calcutta-Boston. | | | | |
| TYPHOON | 1,611 | 1851 (Feb. 18) | Fernald & Pettigrew, Portsmouth, N.H. | Calcutta | 1854 | London (Deal) | 1855 | 94 |
| | | | | Round trip, London-Calcutta, 181 days at sea. | | | | |
| EMPRESS OF THE SEAS | 2,197 | 1853 (Jan. 14) | Donald McKay, East Boston | London | Nov. 28 | Bombay | Mar. 5, 1855 | 97 |
| | | | | Outward run of second voyage, New York-Quebec-London-Bombay-London-New York. | | | | |
| METEOR | 1,068 | 1852 (Oct. 27) | E. & H. O. Briggs, South Boston | Calcutta | Dec. 28 | Boston | Apr. 5, 1855 | 98 |
| | | | | Was off Cape Cod Mar. 31, 93 days out, and held up four days by adverse weather. | | | | |
| MYSTERY | 1,155 | 1853 (Jan. 11) | Samuel Hall, East Boston | Bombay | Dec. | London | Mar. 1855 | 98 |
| | | | | Round voyage, London-Bombay, 199 days at sea. | | | | |
| MATCHLESS | 1,033 | 1853 (June 30) | Isaac Taylor, Chelsea, Mass. | Calcutta | 1854 | Boston | 1854 | 99 |
| | | | | Last lap of maiden voyage. Went from San Francisco to Calcutta via Singapore in 93 days. | | | | |

(Continued on next page)

| Name of Clipper | Ton- nage | Built (launched) | Builder | Departure | | Arrival | | Passage in Days |
|-------------------------|--------------|---------------------|---|--|----------|-----------------------------|------------------|--------------------|
| | | | | Port | Date | Port | Date | |
| <i>1854—(Continued)</i> | | | | | | | | |
| PANTHER | 1,278 | 1854 (Jan.) | Paul Curtis, Medford, Mass. | Liverpool | 1854 | Calcutta | 1854 | 99 |
| | | | | Maiden long-distance voyage. Made 3,000 miles the first 17 days. | | | | |
| JOHN GILPIN | 1,089 | 1852 | Samuel Hall, East Boston | Calcutta (Sand Heads) | Nov. 4 | Boston | Feb. 12, 1855 | 100 |
| | | | | Calcutta to Cape, 37½ days; 24 days from Cape to line. Bad weather in North Atlantic. | | | | |
| PANTHER | 1,278 | 1854 (Jan.) | Paul Curtis, Medford, Mass. | Calcutta | 1854 | London | 1855 | 100 |
| | | | | Round voyage, England-Calcutta, 199 days at sea. | | | | |
| OCEAN PEARL | 847 | 1853 (Aug. 15) | J. Magoun, Charlestown, Mass. | Calcutta | June 15 | Boston | Sept. 24 | 101 |
| | | | | Last lap of maiden voyage. Went from San Francisco to Singapore in 44 days and thence to Calcutta. | | | | |
| FLYING DRAGON | 1,127 | 1853 (June) | Trufant & Drummond, Bath, Maine | New York | Oct. 30 | Calcutta (Sand Heads) | Feb. 8, 1855 | 101 |
| | | | | Outward passage of second voyage. Returned to Boston in 100 days. | | | | |
| MYSTERY | 1,155 | 1853 (Jan. 11) | Samuel Hall, East Boston | London (Deal) | Jan. 28 | Bombay | Oct. 7 | 101 |
| | | | | British ownership. Sold after maiden voyage under American flag. | | | | |
| WITCH OF THE WAVE | 1,498 | 1851 (Apr. 6) | George Raynes, Portsmouth, N.H. | Calcutta (Sand Heads) | Apr. 1 | Boston | July 12 | 102 |
| | | | | Calcutta to Cape, 57 days (slow); Cape to Boston, 45 days (fast). Last lap of third voyage. | | | | |
| SKYLARK | 1,209 | 1853 (Aug. 4) | James M. Hood, Somerset, Mass. | Calcutta | 1854 | New York | 1854 | 102 |
| | | | | Last lap of maiden voyage, New York-San Francisco-Calcutta-New York. | | | | |
| WESTWARD HO | 1,650 | 1852 (Sept. 24) | Donald McKay, East Boston | Calcutta | 1854 | Boston | 1854 | 103 |
| | | | | Last lap of second voyage. New York-San Francisco, 105 days; San Francisco-Calcutta, 87 days. | | | | |
| EDWIN FORREST | 1,141 | 1853 (Oct. 5) | Daniel D. Kelly, East Boston | Calcutta | 1854 | London | 1855 | 106 |
| | | | | Went out from New York to Australia and returned via Calcutta to London. | | | | |
| HIPPO- GRIFFE | 678 | 1852 (Apr. 5) | Shiverick Bros., East Dennis, Mass. | London | 1854 | Calcutta | 1855 | 107 |
| | | | | Outward run on third voyage. Returned to Boston in 108 days. | | | | |
| MALAY | 868 | 1852 (Aug. 26) | John Taylor, Chelsea, Mass. | Calcutta | 1854 | New York | 1854 | 107 |
| | | | | In 1855 ran from Calcutta to Boston in 115 days. | | | | |
| GEM OF THE OCEAN | 702 | 1852 | Hayden & Cud- worth, Medford, Mass. | Calcutta | 1854 | Boston | 1854 | 108 |
| | | | | Return passage of a voyage to Australia. | | | | |
| NEPTUNE'S CAR | 1,616 | 1853 (Apr. 16) | Page & Allen, Portsmouth, Va. | Calcutta | July 12 | New York | Oct. 29 | 109 |
| | | | | Last lap of voyage, New York-San Francisco-Singapore-Calcutta and home. | | | | |
| QUEEN OF THE SEAS | 1,356 | 1852 (Sept. 18) | Paul Curtis, Medford, Mass. | Calcutta | Sept. 21 | Newport, R. I. | Jan. 10, 1855 | 111 |
| | | | | Last lap of second voyage, Boston to Sydney, out in 105 days; thence to Calcutta and home. | | | | |

(Continued on next page)

| Name of Clipper | Ton-nage | Built (launched) | Builder | Departure | | Arrival | | Passage in Days |
|---|----------|-------------------|--|-------------------------------|-----------------|--|------------------|-----------------|
| | | | | Port | Date | Port | Date | |
| <i>1854—(Continued)</i> | | | | | | | | |
| HIPPO-GRIFFE | 678 | 1852 (Apr. 5) | Shiverick Bros., East Dennis, Mass. | Calcutta | 1854 | Phila- delphia | 1854 | 112 |
| Homeward run on second voyage. Went out from Boston to Calcutta in 110 days. | | | | | | | | |
| DASHING WAVE | 1,180 | 1853 (July 15) | Fernald & Pettigrew, Portsmouth, N.H. | Calcutta | 1854 | Boston | 1854 | 115 |
| Practically the same time as made by the GREY FEATHER and SYREN. Was 76 days from San Francisco to Calcutta. | | | | | | | | |
| FLEET-WOOD | 663 | 1852 | George Raynes, Portsmouth, N.H. | Boston | Oct. 25 | Calcutta | Feb. 18, 1855 | 116 |
| Outward run, third voyage, 34 days to line and 82 days thence to Calcutta. Returned to Boston in 133 days. | | | | | | | | |
| SOUTHERN CROSS | 938 | 1851 (Mar. 19) | E. & H. O. Briggs, East Boston | Calcutta | May 21 | Boston | Sept. 17 | 119 |
| Last lap of voyage, New York-San Francisco-Singapore-Calcutta-Boston. | | | | | | | | |
| <i>1855</i> | | | | | | | | |
| HURRICANE | 1,608 | 1851 (Oct. 25) | Isaac C. Smith, Hoboken, N.J. | London Needles | Aug. Aug. 12 | Calcutta (mouth of the Hooghly) | Nov. 3 | 82¼ |
| Said to be a record at the time. Also reported as 84 days 12 hours from Portsmouth, England, to Sand Heads, pilot to pilot. | | | | | | | | |
| BEVERLY | 676 | 1852 (Apr. 19) | Paul Curtis, Medford, Mass. | Calcutta (Sand Heads) | Oct. 13 | Boston | Jan. 4, 1856 | 83 |
| Said to be the second fastest passage on record. Went out from Boston to Melbourne in 83 days. | | | | | | | | |
| EUTERPE | 1,985 | 1854 (Dec. 7) | Horace Merriam, Rockland, Maine | Calcutta (Saugor Roads) | Aug. 12 | London (Downs) | Nov. 5 | 85 |
| From Calcutta to Cape, 39 days; Cape to London, 46 days. Made the round voyage in 175 days at sea—very fast. | | | | | | | | |
| DAVID CROCKETT | 1,679 | 1853 (Oct. 18) | Greenman & Co., Mystic, Conn. | Liverpool | Jan. | Aden | Mar. | 85 |
| Returned from Bombay to Liverpool in 104 days. | | | | | | | | |
| NOR'WESTER | 1,267 | 1854 (Apr.) | Samuel Lapham, Medford, Mass. | Boston | June 23 | Calcutta (Sand Heads) | Sept. 17 | 87 |
| Reported as 86 days 21½ hours. Press stated a 91-day passage and 89 days, pilot to pilot. | | | | | | | | |
| MATCHLESS | 1,033 | 1853 (June 30) | Isaac Taylor, Chelsea, Mass. | Calcutta | Apr. 18 | Boston | July 16 | 89 |
| Return passage of voyage from Boston to Calcutta, 1854-1855. | | | | | | | | |
| CONTEST | 1,098 | 1852 (Oct. 9) | J. A. Westervelt, New York | New York | July 10 | Bombay | Oct. 8 | 90 |
| Went to Hong Kong and returned to New York, making slow passage of 139 days from Whampoa. | | | | | | | | |
| DAVID BROWN | 1,717 | 1853 (Oct. 8) | Roosevelt & Joyce, New York | Bombay | 1855 | Liverpool | 1855 | 90 |
| Made round voyage, England-Bombay, 188 days at sea. | | | | | | | | |
| EUTERPE | 1,985 | 1854 (Dec. 7) | Horace Merriam, Rockland, Maine | New York | Jan. 31 | Calcutta | May 1 | 90 |
| Maiden passage. Returned to London in 85 days. Round voyage in 175 days at sea. | | | | | | | | |

(Continued on next page)

| Name of Clipper | Ton-nage | Built (launched) | Builder | Departure | | Arrival | | Passage in Days |
|--|----------|------------------|--|-----------------------|--------------------|-----------|---------------|-----------------|
| | | | | Port | Date | Port | Date | |
| <i>1855—(Continued)</i> | | | | | | | | |
| GOLDEN RACER | 838 | 1852 | J. C. C. Morton, Thomaston, Maine | Calcutta (Sand Heads) | Jan. 11 | Boston | Apr. 11 | 90 |
| Last lap of her second voyage, Baltimore-San Francisco-Calcutta-Boston. | | | | | | | | |
| BLUE JACKET | 1,790 | 1854 (Aug. 27) | Robert E. Jackson, East Boston | Madras | 1855 | London | 1856 | 92 |
| Last leg of maiden voyage. Liverpool to Melbourne, 68 days; thence to London via India. | | | | | | | | |
| PANTHER | 1,278 | 1854 (Jan.) | Paul Curtis, Medford, Mass. | London | 1855 | Calcutta | 1855 | 93 |
| Outward run on second voyage from England to India. Returning, had very severe weather in Bay of Bengal and was 70 days to Cape. | | | | | | | | |
| WHIRLWIND | 960 | 1852 (Sept. 13) | James O. Curtis, Medford, Mass. | Calcutta | Oct. 10 | New York | Jan. 12, 1856 | 94 |
| Return passage of voyage, New York-Melbourne; thence 40 days to Calcutta and home. | | | | | | | | |
| NOR'WESTER | 1,267 | 1854 (Apr.) | Samuel Lapham, Medford, Mass. | Calcutta Sand Heads | Dec. 11 Dec. 15 | Boston | Mar. 22, 1856 | 95 at sea |
| Ninety-eight days, port to port. Was partly dismasted Jan. 24, 1856, off African coast. Put into St. Helena with cholera aboard; there three days. | | | | | | | | |
| DAVID BROWN | 1,717 | 1853 (Oct. 8) | Roosevelt & Joyce, New York | London | Jan. 30 | Bombay | May 8 | 98 |
| Twenty-three days to line; 46 days to Cape and 52 days thence to port in unfavorable weather. | | | | | | | | |
| NORTH WIND | 1,041 | 1853 (Apr. 30) | A. C. Bell, New York | New York | 1855 | Calcutta | 1855 | 99 |
| Returned to New York in 98 days. | | | | | | | | |
| HURRICANE | 1,608 | 1851 (Oct. 25) | Isaac C. Smith, Hoboken, N.J. | Calcutta (Saugor) | Feb. 3 | London | May 14 | 100 |
| To Cape, 48 days; from Cape, 52 days. | | | | | | | | |
| FLYING DRAGON | 1,127 | 1853 (June) | Trufant & Drummond, Bath, Maine | Calcutta (Saugor) | Mar. 20 | Boston | June 28 | 100 |
| Was 52 days to Cape; 80 days to line. Round voyage, 201 days at sea. | | | | | | | | |
| MIDNIGHT | 962 | 1854 (Apr. 17) | Fernald & Pettigrew, Portsmouth, N.H. | Calcutta | Mar. 11 | Boston | June 20 | 101 |
| Last leg of maiden voyage, Boston-San Francisco-Singapore-Calcutta and home. | | | | | | | | |
| RACER | 1,669 | 1851 (Feb. 8) | Currier & Townsend, Newburyport, Mass. | Calcutta | Feb. 3 | London | May 15 | 101 |
| Last leg of voyage, London-Sydney-Calcutta and return to London. | | | | | | | | |
| RING-LEADER | 1,154 | 1853 | Hayden & Cudworth, Medford, Mass. | Calcutta | 1855 | London | 1855 | 102 |
| Second voyage. Boston to Melbourne, 78 days; thence 53 days to Calcutta. | | | | | | | | |
| NORTHERN LIGHT | 1,021 | 1851 (Sept. 25) | E. & H. O. Briggs, South Boston | Calcutta | Nov. | New York | Feb. 1856 | 102 |
| Said to have returned in company with the NORTH WIND and sailed "even with her" on the sea run. | | | | | | | | |
| DAVID CROCKETT | 1,679 | 1853 (Oct. 18) | Greenman & Co., Mystic, Conn. | Bombay | 1855 | Liverpool | 1855 | 104 |
| Went out from Liverpool to Aden (Jan.-Mar.) in 85 days. | | | | | | | | |

(Continued on next page)

| Name of Clipper | Ton-nage | Built (launched) | Builder | Departure | | Arrival | | Passage in Days |
|---|----------|------------------|---------------------------------------|-----------------------|---------|----------------|--------------|-----------------|
| | | | | Port | Date | Port | Date | |
| 1855—(Continued) | | | | | | | | |
| GRACE DARLING | 1,197 | 1854 (Apr.) | E. & H. O. Briggs, South Boston | Calcutta (Sand Heads) | 1855 | Boston | 1855 | 104 |
| Fifty days to Cape; 81 days to line and 23 days home. Was 74 days from San Francisco to Calcutta. | | | | | | | | |
| MORNING LIGHT (II) of Philadelphia | 938 | 1853 | William Cramp, Philadelphia | Calcutta (Sand Heads) | 1855 | Delaware Capes | 1855 | 104 |
| Last leg of second voyage. Philadelphia-San Francisco, 121 days; Calcutta, 92 days. | | | | | | | | |
| LIVE YANKEE | 1,637 | 1853 | Horace Merriam, Rockland, Maine | Calcutta (Sand Heads) | Mar. 21 | London | July 3 | 104 |
| Fifty-four days to Cape; 50 days from Cape. Was 75 days from San Francisco to Calcutta via Hong Kong and Singapore. | | | | | | | | |
| GEM OF THE OCEAN | 702 | 1852 | Hayden & Cudworth, Medford, Mass. | Calcutta | 1855 | Boston | 1855 | 105 |
| Last lap of voyage, Boston-Australia-Calcutta-Boston. | | | | | | | | |
| ARCHER | 1,095 | 1852 (Dec. 29) | James M. Hood, Somerset, Mass. | Portsmouth, England | 1855 | Calcutta | 1855 | 106 |
| Returned to London in 107 days. | | | | | | | | |
| HIPPO-GRIFFE | 678 | 1852 (Apr. 5) | Shiverick Bros., East Dennis, Mass. | Calcutta | 1855 | Boston | 1855 | 108 |
| Went out from London to Calcutta in 107 days. | | | | | | | | |
| FLYING SCUD | 1,713 | 1853 (Nov. 2) | Metcalf & Norris, Damariscotta, Maine | Calcutta | Apr. 30 | Liverpool | Aug. 18 | 110 |
| Went out to Melbourne; thence 45 days to Calcutta. | | | | | | | | |
| CYCLONE | 1,109 | 1853 (Aug. 18) | E. & H. O. Briggs, South Boston | Boston | 1855 | Calcutta | 1856 | 112 |
| Following a run home from Calcutta in 118 days. | | | | | | | | |
| FLEET-WOOD | 663 | 1852 | George Raynes, Portsmouth, N.H. | Boston | Oct. 16 | Calcutta | Feb. 5, 1856 | 112 |
| Following a run home from Calcutta in the slow time of 133 days. | | | | | | | | |
| SANTA CLAUS | 1,256 | 1854 (Sept. 5) | Donald McKay, East Boston | Calcutta (Sand Heads) | Apr. 23 | Boston | Aug. 15 | 114 |
| Last lap of maiden voyage to Calcutta and return, which occupied 9 months. | | | | | | | | |
| MALAY | 868 | 1852 (Aug. 26) | John Taylor, Chelsea, Mass. | Calcutta | 1855 | Boston | 1855 | 115 |
| Last lap of voyage in Australian trade. | | | | | | | | |
| CYCLONE | 1,109 | 1853 (Aug. 18) | E. & H. O. Briggs, South Boston | Calcutta | Apr. 18 | Boston | Aug. 14 | 118 |
| Last lap of a 21-month 12-day voyage, Boston-San Francisco-Calcutta-Sydney-Calcutta and home. | | | | | | | | |
| ELIZABETH KIMBALL | 998 | 1853 | Edward Dutton, Marblehead, Mass. | Calcutta | 1855 | Boston | 1855 | 122 |
| Last lap of maiden voyage. Eventful and good passage considering bad luck. | | | | | | | | |
| FLEET-WOOD | 663 | 1852 | George Raynes, Portsmouth, N.H. | Calcutta | Apr. 16 | Boston | Aug. 27 | 133 |
| Then went out to Calcutta in 112 days. | | | | | | | | |

(Continued on next page)

| Name of Clipper | Ton- nage | Built (launched) | Builder | Departure | | Arrival | | Passage in Days |
|------------------|--------------|---------------------|---|-----------------------------|------------------|-----------------------------|------------------|---|
| | | | | Port | Date | Port | Date | |
| 1856 | | | | | | | | |
| JACOB BELL | 1,381 | 1852 (Nov. 12) | Jacob and A. C. Bell, New York | New York | Mar. 16 | Bombay | June 1 | 77 |
| | | | | | | | | Crossed the line (3,703 miles) in 18 days 1 hour. Returned from Manila to New York in 113 days. |
| FLYING SCUD | 1,713 | 1853 (Nov. 2) | Metcalf & Norris, Damariscotta, Maine | New York | Apr. 14 | Bombay | July 4 | 81 |
| | | | | | | | | A very fast passage. Seven days longer than the record run of the SWEEPSTAKES made in 1857, but seldom equaled. |
| HURRICANE | 1,608 | 1851 (Oct. 25) | Isaac C. Smith, Hoboken, N. J. | Calcutta (Sand Heads) | Jan. 10 | Falmouth, England | Apr. 2 | 83 |
| | | | | | | | | Reported as 79 sailing days. Also reported as arriving at Gravesend, London, May 13, 1856. |
| JOHN LAND | 1,054 | 1853 (Mar. 26) | E. & H. O. Briggs, South Boston | Calcutta (Saugor) | Nov. 28 | Boston | Feb. 24, 1857 | 88 |
| | | | | | | | | The last lap of her maiden voyage in 1853-1854 was a run from Sand Heads, Calcutta, to Boston in 88 days. |
| MESSENGER | 1,351 | 1852 (Apr. 22) | Jacob Bell, New York | New York | 1856 | Bombay | 1856 | 90 |
| | | | | | | | | A very good run considering the adverse monsoon in the Indian Ocean. Then ran to Liverpool in 104 days. |
| PANTHER | 1,278 | 1854 (Jan.) | Paul Curtis, Medford, Mass. | London Deal | May 21 May 28 | Calcutta (Sand Heads) | Aug. 28 | 92 |
| | | | | | | | | Returned to Boston in 91 days. |
| LIVE YANKEE | 1,637 | 1853 | Horace Merriam, Rockland, Maine | Calcutta | Feb. | London | May | 93 |
| | | | | | | | | Fifty-one days to Cape; 42 days from Cape. Return passage of British-Indian voyage. |
| MESSENGER | 1,351 | 1852 (Apr. 22) | Jacob Bell, New York | Calcutta | 1856 | Phila- delphia | 1856 | 95 |
| | | | | | | | | Then went from New York to Bombay in 90 days. |
| GAME COCK | 1,392 | 1850 (Dec. 21) | Samuel Hall, East Boston | New York | 1856 | Bombay | 1856 | 97 |
| | | | | | | | | Went to Calcutta and returned home in 94 days, Calcutta to Boston. |
| EDWIN FORREST | 1,141 | 1853 (Oct. 5) | Daniel D. Kelly, East Boston | Calcutta | Feb. 5 | London | May 13 | 98 |
| | | | | | | | | Return passage of a round voyage, London-Calcutta. |
| NORTH WIND | 1,041 | 1853 (Apr. 30) | A. C. Bell, New York | Calcutta | 1856 | New York | 1856 | 98 |
| | | | | | | | | Went out in 99 days. Round voyage at sea, 197 days. |
| WILD HUNTER | 1,081 | 1855 (Nov. 22) | Shiverick Bros., East Dennis, Mass. | Calcutta | Oct. 27 | Boston | Jan. 27, 1857 | 98 |
| | | | | | | | | Severe gales in North Atlantic. Partially dismantled and delayed. Last lap of maiden voyage. |
| HORNET | 1,426 | 1851 (June 20) | Westervelt & Mackey, New York | Calcutta | 1856 | New York | 1856 | 102 |
| | | | | | | | | Last lap of fourth voyage. Was 69 days from San Francisco to Calcutta. |
| MYSTERY | 1,155 | 1853 (Jan. 11) | Samuel Hall, East Boston | London | Nov. 5 | Bombay | Feb. 15, 1857 | 102 |
| | | | | | | | | Returned to London in 112 days from Bombay. |
| RADIANT | 1,318 | 1853 (Jan. 24) | Paul Curtis, East Boston | London Deal | May 12 May 14 | Calcutta | Aug. 24 | 102 |
| | | | | | | | | Following arrival England from Manila. |

(Continued on next page)

| Name of Clipper | Ton-nage | Built (launched) | Builder | Departure | | Arrival | | Passage in Days |
|--|----------|-------------------|--|--------------------------|----------|----------------------|------------------|-----------------|
| | | | | Port | Date | Port | Date | |
| 1856—(Continued) | | | | | | | | |
| RADIANT | 1,318 | 1853 (Jan. 24) | Paul Curtis, East Boston | Calcutta | 1856 | New York | 1857 | 103 |
| Return of London-Calcutta-New York voyage; 205 days at sea. | | | | | | | | |
| ELIZABETH KIMBALL | 998 | 1853 | Edward Dutton, Marblehead, Mass. | Calcutta | Sept. 11 | Boston | Dec. 23 | 103 |
| Fifty-two days to Cape; 79 days to line; 51 days from Cape; 24 days from line. | | | | | | | | |
| ANGLO-SAXON | 868 | 1853 | F. W. Rhodes, Rockland, Maine | Calcutta (Sand Heads) | Aug. 30 | New York | Dec. 12 | 104 |
| Last lap of third voyage and first around the world. Also reported as a passage of 109 days from Calcutta to New York. | | | | | | | | |
| ARCHER | 1,095 | 1852 (Dec. 29) | James M. Hood, Somerset, Mass. | Calcutta | 1856 | London | 1856 | 107 |
| Going out, she was 106 days from Portsmouth, England, to Calcutta. | | | | | | | | |
| MARY | 1,148 | 1854 (Dec. 6) | Benjamin Dutton, Marblehead, Mass. | Calcutta (Sand Heads) | Oct. 19 | Boston | Feb. 3, 1857 | 107 |
| Last lap of maiden voyage. Was 100 days from San Francisco to Calcutta. | | | | | | | | |
| FAIR WIND | 1,299 | 1855 (Oct. 12) | E. & H. O. Briggs, South Boston | Calcutta (Sand Heads) | Oct. 15 | Boston | Jan. 31, 1857 | 108 |
| Fifty-four days to Cape; 75 days to line; 54 days from Cape; 33 days from line. | | | | | | | | |
| CYCLONE | 1,109 | 1853 (Aug. 18) | E. & H. O. Briggs, South Boston | Calcutta | 1856 | Boston | 1856 | 110 |
| Second voyage. Went out to Calcutta in 112 days. | | | | | | | | |
| WEST WIND | 1,071 | 1853 (Mar. 26) | Joshua Foster, Medford, Mass. | Calcutta | 1856 | Boston | 1856 | 116 |
| Last lap of her second voyage. Was 54 days from San Francisco to Singapore; thence 21 days to Calcutta. | | | | | | | | |
| SOUTHERN CROSS | 938 | 1851 (Mar. 19) | E. & H. O. Briggs, East Boston | Calcutta | Aug. 13 | Boston | Dec. 15 | 124 |
| Last lap of fifth voyage. Was 120 days to San Francisco; 72 days thence to Batavia and then went to Calcutta. | | | | | | | | |
| FLYING DRAGON | 1,127 | 1853 (June) | Trufant & Drummond, Bath, Maine | Calcutta (Saugor) | Apr. 24 | Boston | Aug. 27 | 125 |
| Seventy-one days to Cape (very slow); 97 days to line; 54 days from Cape; 28 days from line. | | | | | | | | |
| SKYLARK | 1,209 | 1853 (Aug. 4) | James M. Hood, Somerset, Mass. | Calcutta | 1856 | Boston | 1856 | 134 |
| Last leg of voyage from New York to San Francisco and return via Calcutta. | | | | | | | | |
| NOR'WESTER | 1,267 | 1854 (Apr.) | Samuel Lapham, Medford, Mass. | Calcutta | 1856 | Falmouth, England | 1856 | 135 |
| Last lap of voyage, Boston-San Francisco-Calcutta-England. | | | | | | | | |
| MYSTERY | 1,155 | 1853 (Jan. 11) | Samuel Hall, East Boston | Calcutta | 1856 | London (Deal) | 1856 | 147 |
| Return passage. Went out from London to Sydney in 1855 in 92 days. | | | | | | | | |

1857

| | | | | | | | | |
|--|-------|-------------------|---------------------------------|----------|---------|----------|------------------|----|
| SWEEP-STAKES | 1,735 | 1853 (June 21) | D. & A. Westervelt, New York | New York | May 9 | Bombay | July 22 | 74 |
| The all-time record between the ports. Fourth voyage outbound. | | | | | | | | |
| SWEEP-STAKES | 1,735 | 1853 (June 21) | D. & A. Westervelt, New York | Bombay | Dec. 30 | New York | Mar. 20, 1858 | 80 |
| Completing a record round voyage of 154 days at sea. | | | | | | | | |

(Continued on next page)

| Name of Clipper | Ton- nage | Built (launched) | Builder | Departure | | Arrival | | Passage in Days |
|---|--------------|---------------------|--|-----------------------------|---------|-----------------------------|----------|--------------------|
| | | | | Port | Date | Port | Date | |
| 1857—(Continued) | | | | | | | | |
| DASHING WAVE | 1,180 | 1853 (July 15) | Fernald & Pettigrew, Portsmouth, N.H. | Calcutta (Sand Heads) | Sept. 3 | Boston | Nov. 27 | 84 |
| Beaten only twice and equaled twice. | | | | | | | | |
| BEVERLY | 676 | 1852 (Apr. 19) | Paul Curtis, Medford, Mass. | Boston | Aug. 30 | Calcutta (Sand Heads) | Nov. 23 | 86 |
| Said to be the record; 85 days 16½ hours, pilot to pilot. | | | | | | | | |
| LIGHTNING | 2,083 | 1854 (Jan. 3) | Donald McKay, East Boston | Portsmouth, England | Aug. 25 | Calcutta (Sand Heads) | Nov. 20 | 87 |
| British transport service; chartered from Australian Black Ball Line. | | | | | | | | |
| PANTHER | 1,278 | 1854 (Jan.) | Paul Curtis, Medford, Mass. | Calcutta (Sand Heads) | Jan. 16 | Boston | Apr. 17 | 91 |
| Forty-four days from Cape; also reported only 45 days to Cape; round voyage, 183 days at sea. | | | | | | | | |
| GAME COCK | 1,392 | 1850 (Dec. 21) | Samuel Hall, East Boston | Calcutta | 1857 | Boston | 1857 | 94 |
| Went out from New York to Bombay. Round voyage, 191 days at sea. | | | | | | | | |
| HORNET | 1,426 | 1851 (June 20) | Westervelt & Mackey, New York | London Lizard | Jan. 12 | Calcutta | Apr. 19 | 97 |
| Following a passage of 102 days from Calcutta to New York. | | | | | | | | |
| SYREN | 1,064 | 1851 (May 1) | John Taylor, Medford, Mass. | Calcutta | Jan. | Boston | Apr. | 97 |
| Forty-seven days to Cape; 30 days from Cape. Went out from Boston in 99 days. | | | | | | | | |
| COEUR DE LION | 1,098 | 1854 (Jan.) | George Raynes, Portsmouth, N.H. | Calcutta (Rangoon) | 1857 | Falmouth, England | 1857 | 99 |
| Took British troops from Hong Kong to Calcutta in 26 days. Went to England via Rangoon. | | | | | | | | |
| SYREN | 1,064 | 1851 (May 1) | John Taylor, Medford, Mass. | Boston | June 13 | Calcutta | Sept. 20 | 99 |
| First lap of round voyage, which occupied 196 days at sea between the ports. | | | | | | | | |
| DERBY | 1,062 | 1855 | John Taylor, Chelsea, Mass. | Calcutta (Sand Heads) | Mar. 29 | Boston | July 7 | 100 |
| Fifty-three days to Cape; 24 days to line and 23 home; 47 days from Cape. | | | | | | | | |
| SPIRIT OF THE TIMES | 1,206 | 1853 | Cooper & Slicer, Baltimore, Md. | Liverpool | 1857 | Calcutta | 1857 | 100 |
| Trading from and to British ports (1856) for a few years. Sold in 1862 to the Germans. | | | | | | | | |
| GODDESS | 1,126 | 1855 | Hayden & Cudworth, Medford, Mass. | Calcutta (Sand Heads) | Jan. 21 | Boston | May 3 | 101 |
| Fifty-one and a half days to Cape; 49½ days from Cape. | | | | | | | | |
| CHAMPION OF THE SEAS | 2,447 | 1854 (Apr. 19) | Donald McKay, East Boston | Portsmouth, England | Aug. 8 | Calcutta (Sand Heads) | Nov. 17 | 101 |
| British transport service. Delayed in Bay of Bengal. | | | | | | | | |
| JAMES BAINES | 2,515 | 1854 (July 25) | Donald McKay, East Boston | Portsmouth, England | Aug. 8 | Calcutta (Sand Heads) | Nov. 19 | 103 |
| British transport service. Reported 102 days. Delayed in Bay of Bengal. | | | | | | | | |

(Continued on next page)

| Name of Clipper | Tonnage | Built (launched) | Builder | Departure | | Arrival | | Passage in Days |
|---|---------|--------------------|---|-----------------------------|----------|-------------------------|------------------|-----------------|
| | | | | Port | Date | Port | Date | |
| 1857—(Continued) | | | | | | | | |
| MESSENGER | 1,351 | 1852 (Apr. 22) | Jacob Bell, New York | Bombay | 1857 | Liverpool | 1857 | 104 |
| Went out from New York to Bombay in 90 days. | | | | | | | | |
| WILD RANGER | 1,044 | 1853 (Apr. 7) | James O. Curtis, Medford, Mass. | Calcutta | May 24 | London (Deal) | Sept. 10 | 109 |
| Forty-six days from St. Helena. Went out to India, sailing from Boston Dec. 12, 1856. | | | | | | | | |
| METEOR | 1,068 | 1852 (Oct. 27) | E. & H. O. Briggs, South Boston | Rangoon | Aug. | Falmouth, England | Dec. | 110 |
| San Francisco to Hong Kong in 38 days (very fast); Hong Kong to Rangoon, where she loaded for England. | | | | | | | | |
| MYSTERY | 1,155 | 1853 (Jan. 11) | Samuel Hall, East Boston | Bombay | Apr. 18 | London | Aug. 8 | 112 |
| Went out from London to Bombay in 102 days. | | | | | | | | |
| HORNET | 1,426 | 1851 (June 20) | Westervelt & Mackey, New York | Calcutta | June 28 | Cape of Good Hope | Aug. 14 | 47 |
| Returning from Calcutta to London. | | | | | | | | |
| FLYING DRAGON | 1,127 | 1853 (June) | Trufant & Drummond, Bath, Maine | Calcutta (Saugor) | Sept. 16 | Cape of Good Hope | Nov. 4 | 49½ |
| Bound to Boston. In 1856 was 71 days and in 1855, 52 days. | | | | | | | | |
| 1858 | | | | | | | | |
| JAMES BAINES | 2,515 | 1854 (July 25) | Donald McKay, East Boston | Calcutta (Sand Heads) | Jan. 29 | Liverpool | Apr. 16 | 77 |
| Last passage. Burned upon arrival at Liverpool. | | | | | | | | |
| CHARGER | 1,136 | 1856 (Oct. 25) | E. G. Pearce, Portsmouth, N.H. | Calcutta (Sand Heads) | Dec. 25 | Boston | Mar. 19, 1859 | 84 |
| Beaten by only the passages of the WITCH OF THE WAVE (81 days) and BEVERLY (83 days). | | | | | | | | |
| WEBFOOT | 1,091 | 1856 | Shiverick Bros., East Dennis, Mass. | Calcutta (Sand Heads) | Dec. 26 | New York | Mar. 21, 1859 | 85 |
| Ran a close race with the CHARGER throughout the entire passage. | | | | | | | | |
| UNDAUNTED | 1,371 | 1853 | Hall, Snow & Co., Bath, Maine | Liverpool | July 2 | Calcutta | Oct. 1 | 91 |
| Outward passage of a round voyage between Britain and India. | | | | | | | | |
| CYCLONE | 1,109 | 1853 (Aug. 18) | E. & H. O. Briggs, South Boston | London | 1858 | Calcutta | 1858 | 99 |
| Outward passage of a voyage from Britain to India and return to Boston. | | | | | | | | |
| SIMOON | 1,436 | 1852 (Dec. 4) | Jabez Williams, New York | Liverpool | Oct. 13 | Bombay | Jan. 21, 1859 | 100 |
| Returned to Liverpool in 101 days. | | | | | | | | |
| WHIRLWIND | 960 | 1852 (Sept. 13) | James O. Curtis, Medford, Mass. | Calcutta | 1858 | New York | 1858 | 102 |
| Went out from New York to Melbourne in only 72 days; thence 40 days to Calcutta. Round voyage, 214 days at sea. | | | | | | | | |
| EDWIN FORREST | 1,141 | 1853 (Oct. 5) | Daniel D. Kelly, East Boston | Calcutta | 1858 | New York | 1859 | 102 |
| Last lap of voyage, New York-San Francisco-Melbourne-Calcutta-New York. | | | | | | | | |

(Continued on next page)

| Name of Clipper | Ton- nage | Built (launched) | Builder | Departure | | Arrival | | Passage in Days |
|-------------------------|--------------|---------------------|--|--|--------------|-----------|------------------|--------------------|
| | | | | Port | Date | Port | Date | |
| <i>1858—(Continued)</i> | | | | | | | | |
| NOR'WESTER | 1,267 | 1854 (Apr.) | Samuel Lapham, Medford, Mass. | Calcutta | 1858 | Boston | 1858 | 106 |
| | | | | Last lap of Voyage No. 4, Cardiff-Singapore-Calcutta-Boston. | | | | |
| CYCLONE | 1,109 | 1853 (Aug. 18) | E. & H. O. Briggs, South Boston | Calcutta | 1858 | Boston | 1859 | 108 |
| | | | | Round voyage, London-Calcutta-Boston, in 207 days at sea. | | | | |
| MARY | 1,148 | 1854 (Dec. 6) | Benjamin Dutton, Marblehead, Mass. | Calcutta | Feb. 2 | London | May 27 | 114 |
| | | | | Reported 109 days from Boston to San Francisco and 83 days thence to Calcutta. | | | | |
| <i>1859</i> | | | | | | | | |
| FLYING SCUD | 1,713 | 1853 (Nov. 2) | Metcalf & Norris, Damariscotta, Maine | Bombay | June 26 | Liverpool | Sept. 26 | 92 |
| | | | | From autumn of 1856 to late 1859, traded between Britain and India. | | | | |
| ATMOS- PHERE | 1,485 | 1856 | George Greenman, Mystic, Conn. | Calcutta (Sand Heads) | Oct. 9 | New York | Jan. 9, 1860 | 92 |
| | | | | Last lap of voyage, New York-San Francisco-Hong Kong-Calcutta-New York. | | | | |
| DASHING WAVE | 1,180 | 1853 (July 15) | Fernald & Pettigrew, Portsmouth, N.H. | Calcutta | 1859 | Boston | 1859 | 93 |
| | | | | Was 92 days from San Francisco to Calcutta. | | | | |
| PANTHER | 1,278 | 1854 (Jan.) | Paul Curtis, Medford, Mass. | Calcutta (Sand Heads) | Mar. 28 | New York | July 5 | 99 |
| | | | | Held back in North Atlantic. Was twelve days north of Bermuda. | | | | |
| SIMOON | 1,436 | 1852 (Dec. 4) | Jabez Williams, New York | Bombay | 1859 | Liverpool | 1859 | 101 |
| | | | | Ran out in 100 days. Made round voyage in 201 days at sea. | | | | |
| GALATEA | 1,041 | 1854 (Mar. 16) | Jos. Magoun, Charlestown, Mass. | Calcutta | 1859 | New York | 1859 | 101 |
| | | | | Last lap of voyage around the world via San Francisco. | | | | |
| WILD RANGER | 1,044 | 1853 (Apr. 7) | J. O. Curtis, Medford, Mass. | Calcutta | Aug. 1859 | Boston | Nov. 1859 | 103 |
| | | | | Went from London to Sydney (96 days); thence to Calcutta. | | | | |
| NOR'WESTER | 1,267 | 1854 (Apr.) | Samuel Lapham, Medford, Mass. | Calcutta | 1859 | Boston | 1859 | 113 |
| | | | | Last lap of Voyage No. 5. Went out from Boston to San Francisco in 131 days. | | | | |
| <i>1860</i> | | | | | | | | |
| METEOR | 1,068 | 1852 (Sept.) | E. & H. O. Briggs, South Boston | Calcutta | Jan. 23 | Boston | Apr. 28 | 96 |
| | | | | Left San Francisco Aug. 9, 1859, for Calcutta via Manila. | | | | |
| BOSTON LIGHT | 1,154 | 1854 (Oct.) | E. & H. O. Briggs, South Boston | Calcutta (Sand Heads) | Dec. 4 | New York | Mar. 12, 1861 | 98 |
| | | | | Light winds to North Atlantic, where heavy gales were encountered. | | | | |

(Continued on next page)

| Name of Clipper | Ton-nage | Built (launched) | Builder | Departure | | Arrival | | Passage in Days |
|---|----------|-------------------|---------------------------------------|-----------------------|--------------------|----------|---------------|---------------------|
| | | | | Port | Date | Port | Date | |
| 1860—(Continued) | | | | | | | | |
| DASHING WAVE | 1,180 | 1853 (July 15) | Fernald & Pettigrew, Portsmouth, N.H. | Calcutta | 1860 | Boston | 1860 | 109 |
| On earlier voyages, covered course in 84 days in 1857 and 93 days in 1859. | | | | | | | | |
| 1861 | | | | | | | | |
| GAME COCK | 1,392 | 1850 (Dec. 21) | Samuel Hall, East Boston | Colombo | June 1 | New York | Aug. 27 | 87 |
| Thirty-five days from St. Helena. Made 342 miles in one day (deep laden) and averaged 306 miles a day for seven consecutive days. | | | | | | | | |
| SPIRIT OF THE TIMES | 1,206 | 1853 | Cooper & Slicer, Baltimore, Md. | Bombay | Feb. 19 | New York | May 21 | 91 |
| Had been trading from and to British ports since 1856. Sold at New York in late 1861 to Germans. | | | | | | | | |
| METEOR | 1,068 | 1852 (Sept.) | E. & H. O. Briggs, South Boston | England | 1861 | Calcutta | 1861 | 94 |
| Arrived at Falmouth, England, Feb. 24, 1861, after a passage of 98 days from San Francisco and sailed to Calcutta. Sold to British in 1862. | | | | | | | | |
| MAMELUKE | 1,303 | 1855 | E. & H. O. Briggs, South Boston | Liverpool | 1861 | Calcutta | 1861 | 100 |
| Crossed from New York to Liverpool in only 16 days and went out to Calcutta. | | | | | | | | |
| GREY FEATHER | 586 | 1850 | C. S. Husten, Eastport, Maine | Madras | 1861 | New York | 1861 | 107 |
| Arrived at Colombo from Melbourne. Took cargo aboard, but went to Masulipatam near Madras to finish loading. | | | | | | | | |
| DARING | 1,094 | 1855 (Oct. 8) | George W. Jackson, Newburyport, Mass. | Liverpool | 1861 | Calcutta | 1861 | 127 |
| Left New York for Liverpool Feb. 9, 1861. Made a round voyage; 17 days out, 19 back. Returned to Liverpool and sailed to Calcutta, returning to Boston July 13, 1862. | | | | | | | | |
| 1862 | | | | | | | | |
| WEST WIND | 1,071 | 1853 (Mar. 26) | Joshua Foster, Medford, Mass. | Calcutta Sand Heads | Dec. 26 Dec. 29 | New York | Apr. 11, 1863 | 103 from Sand Heads |
| Reported as "102-day passage." Last voyage as American ship, San Francisco-Hong Kong-Melbourne-Batavia-Calcutta-New York. Sold to British upon arrival at New York. | | | | | | | | |
| STARLIGHT | 1,153 | 1854 (Feb. 11) | E. & H. O. Briggs, South Boston | Calcutta | May 1862 | Boston | Aug. 1862 | 112 |
| Left Calcutta twelve hours ahead of the BELLE OF THE WEST and led her twelve hours into Boston. | | | | | | | | |
| BELLE OF THE WEST | 936 | 1853 (Mar. 25) | Shiverick Bros., East Dennis, Mass. | Calcutta | May 1862 | Boston | Aug. 1862 | 112 |
| Popular in Indian trade for several years. | | | | | | | | |
| MAMELUKE | 1,303 | 1855 | E. & H. O. Briggs, South Boston | Calcutta (Sand Heads) | Jan. 5 | London | May 16 | 131 |
| Reported as "121-day passage." Went from London to New York in ballast in 37 days. | | | | | | | | |

(Continued on next page)

MERCHANT SAIL

| Name of Clipper | Tonnage | Built (launched) | Builder | Departure | | Arrival | | Passage in Days |
|---|---------|-------------------|--|---------------------------|--------------------|----------|------------------|-----------------|
| | | | | Port | Date | Port | Date | |
| 1863 | | | | | | | | |
| ANTELOPE | 1,186 | 1852 (Mar. 27) | Perrine, Patterson & Stack, New York | Calcutta | Jan. 24 | New York | May 4 | 100 |
| Went out from Liverpool to Calcutta in 1862. Sold to British in June 1863. | | | | | | | | |
| BEVERLY | 676 | 1852 (Apr. 19) | Paul Curtis, Medford, Mass. | Calcutta (Sand Heads) | Feb. 27 | Boston | June 15 | 108 |
| Went out from Liverpool. Sold and became the ship ALEXANDER of Batavia. | | | | | | | | |
| MARY | 1,148 | 1854 (Dec. 6) | Benjamin Dutton, Marblehead, Mass. | Calcutta | Jan. | London | May | 118 |
| Left Boston in Mar. 1862 for San Francisco (165 days); thence 79 days to Calcutta. | | | | | | | | |
| 1864 | | | | | | | | |
| STARLIGHT | 1,153 | 1854 (Feb. 11) | E. & H. O. Briggs, South Boston | Calcutta | Feb. | Boston | May | 88 |
| Left Boston July 28 for San Francisco and sold to Peruvians for \$34,000. | | | | | | | | |
| 1865 | | | | | | | | |
| LONGWOOD | 1,179 | 1863 | John Currier, Jr., Newburyport, Mass. | Calcutta | Nov. 10 | New York | Feb. 4, 1866 | 86 |
| The LONGWOOD, ANTELOPE, and YOUNG MECHANIC went over the course practically in company under favorable sailing conditions. | | | | | | | | |
| ANTELOPE | 1,186 | 1852 (Mar. 27) | Perrine, Patterson & Stack, New York | Calcutta Sand Heads | Oct. 26 Oct. 31 | New York | Jan. 29, 1866 | 89 net |
| At St. Helena Dec. 22, 52 days out. Crossed line Jan. 6; off Hatteras, 81 days out. Was one day at St. Helena, and passage claimed and reported as 88 days net. | | | | | | | | |
| YOUNG MECHANIC | 1,375 | 1855 (Feb. 2) | T. W. Rhoades, Rockland, Maine | Calcutta Sand Heads | Oct. 22 Nov. 1 | Boston | Jan. 29, 1866 | 89 |
| Reported as "an 88-day passage, same as ANTELOPE." Went out from Boston to Calcutta, sailing May 4, 1865, loaded with ice. | | | | | | | | |
| DASHING WAVE | 1,180 | 1853 (July 15) | Fernald & Pettigrew, Portsmouth, N.H. | Calcutta | 1865 | Boston | 1866 | 95 |
| Off South Africa in company with the SEA SERPENT from China for New York, but the SEA SERPENT reached her destination five days ahead of the DASHING WAVE. | | | | | | | | |

In addition to the before-stated passages, there were many runs made by American clippers in the Indian trade that are not recorded because of doubt with respect to either the length of the passage or the year in which it was made. The medium clipper *Fleetwing*, a small Cape Horner of 896 tons built at Medford, Mass., in 1854, was in service for thirty-one years (twenty-one years under the U.S.A. flag). Between 1854 and 1873, she made all her outward runs around the Horn to San Francisco with one exception; on two of these voyages, the last leg was a run from Calcutta to Boston, which she made in the good time of 98 and 97 days, respectively. During this period, her one voyage not in the California trade originated in Liverpool and commenced with a run out to Calcutta in 1861. The *Morning Star*, a clipper of 1,105 tons built at Medford, Mass., in 1853, is credited, prior to her sale to the British in 1863, with completing two of her voyages by runs from Calcutta,

one to Boston in 101 days and the second to London in 105 days. When engaged on a third passage from Calcutta and loaded with British-owned goods for delivery in London, the ship, when 74 days out and near the Atlantic equator, was captured on March 23, 1863, by the Confederate raider *Alabama*, but because of her British cargo the *Morning Star* was released by Captain Semmes under a bond. Upon arrival at London, she was sold and became the *Landsborough*, being later owned by the Black Ball Line of Liverpool-Australia packets. The medium clipper ship *Onward* of 874 tons, built at Medford, Mass., in 1852, before being sold to the U. S. Government in 1861 for service as a sailing cruiser, completed a London-Melbourne voyage by a run from Calcutta to London in 114 days.

The Indian ports used by American clippers were Calcutta on the northwest shore in the Bay of Bengal and Bombay toward the north of the east coast line on the Arabian Sea. Very occasionally the port of Colombo (Ceylon) was used and more frequently, as the years advanced, Rangoon, which is on the Bay of Bengal and is not, strictly speaking, an Indian port, but the principal port of Burma. Sailings from Penang to United States ports were made occasionally, but Penang is a part of British Malaya (on the Malayan Peninsula south of Burma) and is about at the junction of the Bay of Bengal and the Malacca Straits.

The little extreme clipper *R. B. Forbes* (757 tons), built by Samuel Hall, East Boston, in 1851, was designed for the East Indian trade, but her first three voyages were around Cape Horn (two to San Francisco and one to Honolulu). Completing her second voyage, the clipper ran from Calcutta to New York in 101 days. During the period 1855-1861, the "*Forbes*" was in the Cape of Good Hope trade, sailing between New York or Boston and the East Indies. She made one passage out to Rangoon in 93 days, and of her homeward runs, two were from Penang in 93 and 102 days, respectively, one from Singapore in 96 days, and one from Padang in 78 days. In 1861 the *R. B. Forbes* made another California Cape Horn voyage, running out to San Francisco from Boston in 127 days. Continuing, she went to Calcutta in 73 days and proceeded thence to Boston. Going out once more to the East Indies, the clipper was sold at Hong Kong because of conditions brought about by the Civil War.

In 1853 the fast medium clipper *John Gilpin* (1,089 tons), built by Samuel Hall, East Boston, in 1852, concluded her maiden voyage (New York-San Francisco-Honolulu-Singapore-Calcutta) by a 95-day passage from Penang to Boston, where she arrived November 10, running from Penang to the Cape of Good Hope in 38 days; thence 24 days to the Atlantic equator and 33 days home from the line. On her next voyage, she was 37½ days from Calcutta to the Cape; thence 24 days to the line and 38 days home. The clipper ship *Neptune's Car* of 1,616 tons, built at Portsmouth, Va., in 1853 and sold at Liverpool to the British in February 1863, loaded partly at Singapore in 1859 and completed her lading at Penang, sailing thence on the final lap of her around-the-world (via San Francisco and Hong Kong) voyage on May 24. She arrived at New York August 24, 1859, after a run of 92 days from Penang and 37 days from the equator; the entire voyage had occupied within five days of two full years, as she had cleared New York for San Francisco on August 29, 1857. The little extreme clipper ship *Snow Squall* of 742 tons, built at Cape Elizabeth, Maine, in 1851 for service in the Far East, in 1862 ran from Penang to New York in 100 days (arriving September 5) to conclude a voyage from New York to Melbourne and return via Singapore and Penang. She was off the Cape for nine days in heavy westerly gales and high irregular seas, but ran home in 36 days from St. Helena and 22 days from the line. The following year, the *Snow Squall* ran out to Melbourne from New York in the very fast time of 75 days, went to Singapore in 35 days, completed loading at Penang, and ran from there to New York in 94 days, arriving home September 15, 1863. On this passage, she narrowly escaped capture by the Confederate raider *Tuscaloosa*, but the ship's speed and handiness coupled with the courage and coolness of her commander, Capt. James S. Dillingham, Jr., saved her.

*United States-built "Half Clippers" and "Down
Easters" in the Indian Trade*

Of the leading so-called "half clippers" built during the period 1865-1877, the *Seminole* of 1,439 tons (built at Mystic, Conn., in 1865), the *Great Admiral* of 1,497 tons (built by Jackson) and *Glory of the Seas* of 2,009 tons (built by McKay, both at East Boston in 1869), the *North American* of 1,584 tons (built in 1873, also at East Boston), and the *Triumphant* of 2,046 tons and *America* of 2,054 tons (both launched in 1874 at Quincy, Mass., by George Thomas, a famous clipper shipbuilder) evidently made no voyages in the Indian trade. The *South American* of 1,694 tons was built by Smith & Townsend and launched at East Boston in September 1876 for Henry Hastings, of Boston, and was designed to be "a larger and improved *North American*." From her maiden voyage to San Francisco in 1876-1877 to her loss on a reef off the South African coast on September 15, 1889, when on a voyage (sugar laden) from the Philippines to Boston, the *South American* made thirty-one deep-sea passages of from 28 to 130 days' duration (excluding North Pacific U.S.A. coastal runs) and made only two Indian voyages. In 1886-1887, this half clipper, which was generally acknowledged to be one of the finest wood sailing ships ever built, made a complete round voyage between New York and Calcutta; she ran out in 106 days and returned in the fast time of 89 days. The following voyage, made in 1887-1888, was from New York to Colombo in 104 days; thence to Hong Kong in 28 days and return to New York in 102 days. The *Red Cloud* of 2,208 tons, launched by George Thomas at Quincy, Mass., on November 24, 1877, was announced to be "a sister of the half clippers *America* and *Triumphant*," built three years before her; but this ship made only three voyages under the American flag before being sold to the Germans at Liverpool in March 1882. On her maiden voyage, the *Red Cloud* went from Boston to Calcutta and Bombay; thence to San Francisco and Liverpool. However, her other voyages as an American ship were in the California Cape Horn trade, one originating and both terminating in Britain. In the clipper ship days, a large percentage of the voyages made from North Atlantic U.S.A. ports to California were continued around the world sailing west from San Francisco to a Chinese, East Indian (Philippine), or Indian port and around the Cape of Good Hope to an American or British North Atlantic port. Later, when San Francisco became a grain-exporting port, quite a few passages were made like that of the *Red Cloud*, which was a voyage around the world sailing eastward via the Cape of Good Hope to an Indian or oriental port; thence across the Pacific to San Francisco (or to Puget Sound for lumber) and around Cape Horn to a North Atlantic port.

The *Augusta* of 1,326 tons, launched by Currier at Newburyport, Mass., in January 1868, was described as a "half clipper," but she was only an average sailer. This ship, however, was employed generally in trade with India, and most of her voyages were to Calcutta or Bombay. In 1869 she ran from Calcutta to Boston in 109 days, and her last voyage under the Stars and Stripes before being sold foreign was between Liverpool and Bombay. Another Newburyport-built ship that was said to be a half clipper but whose sailing performances did not justify that designation was the *Exporter* of 1,312 tons, launched by Jackman in January 1874. This ship was sold in 1895 to the Norwegians, and during the first fifteen years of her life she was engaged in trade primarily between North Atlantic ports and the East Indies, most of her outward passages being to Calcutta or Bombay.

There were two American ships named *Aurora* whose names have been connected with the Indian trade and that, because they were built in the fifties, have been designated as clippers. One of these, the *Aurora* of 1,639 tons, built by Webb, of New York, in 1854,

was a full-modeled packet designed for the transatlantic trade, and her long-distance voyages on the Seven Seas were generally made in slow time. This ship did not engage in the Indian trade, but about 1878 commenced to carry case oil out from U.S.A. Atlantic ports to the Far East. In January 1884, while at Calcutta with such a cargo, she caught fire and became a total loss. Another *Aurora* was an extreme clipper ship built by Taylor at Chelsea, Mass., in 1853. She was operated in the California trade until the Civil War, when she was sold to the British, and after a voyage to Australia she was engaged in the Indian trade, running between England, Calcutta and Bombay. For several years, her hailing port was Bombay. In 1870 this vessel was burned at sea not far from Bombay, and the affair created a scandal. She evidently was loaded with "bogus cotton," and her British captain and officers were accused, tried, and convicted on the charge of having set her on fire.

Another American sailing ship built during the clipper ship decade that, because of the date of her construction, has been erroneously designated as a medium clipper was the *Good Hope* of 1,295 tons, constructed by Curtis at Medford, Mass., in 1855. This ship, on her maiden passage to San Francisco, was 145 days from New York (clearance to entry), and the average of her four westward Cape Horn runs to California was reported as 141 days. Her one eastward Cape Horn passage, made in 1873, was 143 days to Liverpool—which was slow sailing. The *Good Hope* operated principally between British ports and Calcutta and, it is said, was a very good carrier. She averaged about 110 days on her passages in that service, showing up somewhat better on the Cape of Good Hope runs than she did on the Cape Horn route. In 1860 this ship went from San Francisco to Peru for a cargo of guano and, being unable to get any, sailed across the Pacific to Calcutta and went thence to Savannah, Ga., where she arrived at the outset of the Civil War and was given twenty-four hours by the authorities to leave port under penalty of confiscation. The *Good Hope* was sold at Bahia in 1873 and went under the Brazilian flag. Later, she became the Swedish ship *Solide* and in 1881, when twenty-six years old, was wrecked in the St. Lawrence.

The ship *Cleopatra* of 1,233 tons, built at Williamsburg, N.Y., and launched in June 1867, was described as a "medium clipper." She did some good sailing, but she was neither modeled nor sparred for a clipper. After three Cape Horn California voyages, the *Cleopatra* was employed in trade between North Atlantic ports and the Far East, mainly China and India. In the early seventies, she ran from Liverpool to Calcutta in 105 days and reported "light winds." She was sold to the Germans in 1876. There was a real clipper ship named *Cleopatra* that should not be confused with the fuller-modeled and moderately canvased American sailing ship *Cleopatra* constructed some fourteen years later. The clipper bearing this name was built by Paul Curtis, East Boston, in 1853 and was of 1,562 tons. She made two Cape Horn passages to San Francisco. In September 1855, when making the return trip on her second voyage (guano laden), she struck a submerged wreck off the Brazilian coast while traveling at a high rate of speed and foundered.

The wood American sailing ships of the type known as the "Down Easter," which were built generally in yards northeast of Boston after the Civil War and in large numbers during the seventies and eighties, were primarily Cape Horners, for the ocean-carrying trade from Atlantic to Pacific U.S.A. ports was a protected American coastal trade. As long as deep-sea freight transportation could compete with the transcontinental railroad hauls, good-carrying square-rigged ships of fair speed enjoyed a virtual monopoly of this trade in bulk cargoes until marine steam, coupled with rail transport, drove merchant sail from the service during the latter part of the century. The Indian trade, in which British ships always held preferential advantages, was not of a nature or possible volume after the clipper ship decade and Civil War to attract many United States Down Easters, and large numbers of these ships never made a voyage to an Indian port during their entire careers as general traders on the Seven Seas.

Frederick Tudor, of Boston, Mass., solved the problem of cutting, stowing, and shipping New England natural ice to warm climates and of economically transporting it by sailing

ship through the tropics. A market for American ice naturally developed in India, and whereas Frederick Tudor generally shipped his product in chartered ships, the Tudor Ice Company, of Boston, in 1877 built the *Iceberg*, *Ice King*, and *Iceland* of some 1,135 to 1,179 net tons at East Boston. For a few years, two of these ships carried ice and some general cargo to ports in the East Indies, returning with oriental produce. The *Iceland*, the last of the trio to be launched, had a very short life, for in March 1878 she was posted as overdue and missing. The Civil War intervened to delay the development of Frederick Tudor's international ice business. In 1862 the *Star of Peace* of 941 tons, built at Newburyport in 1858, went from Boston to Calcutta with a cargo of ice and, when returning loaded with saltpeter and Indian produce, was captured and burned by the Confederate raider *Florida* on March 6, 1863, in the Atlantic (Lat. 15° N.) when 88 days out from Calcutta.

The *Springfield* of 1,043 tons, built at Medford, Mass., in 1868, on her maiden voyage, carried a cargo of ice from Boston to Bombay and, on her second voyage, went out to Melbourne from New York and returned home via India. This ship, after other voyages in the Australian, Californian, and British trade, was sold at Hamburg in December 1879 to the Germans. The *Tennyson* of 1,246 tons, built by Currier at Newburyport in 1865, on her last voyage, took ice from Boston to Madras and Calcutta in 1872 and sailed for Boston with a cargo of Indian produce in January 1873. She foundered in the Indian Ocean south of Mauritius during a terrific hurricane on February 22, and only three men on board survived. On her maiden voyage, the *Tennyson* went from Bangor to Liverpool; thence to Calcutta and Bombay, Penang, Singapore, and Hong Kong, across the Pacific to San Francisco, and around the Horn to Liverpool. The voyage around the world sailing to the eastward occupied about two years. On her second voyage, the *Tennyson* ran from Liverpool to Calcutta and thereafter traded with the Far East and principally with ports in India until the time of her loss, which occurred when she was seven and three-quarters years old.

The *Fannie Tucker* of 1,527 tons, launched at Wiscasset, Maine, in November 1875, made a couple of voyages to India, the outward cargoes being ice. The *Farragut* of 1,549 tons, built by Currier at Newburyport, Mass., in 1876, after a maiden voyage in the California Cape Horn trade, made two voyages to India, carrying ice out from Boston. The first of these ice passages was a run of 106 days to Madras, and the two return passages were made from Manila and Calcutta, respectively. The ship, after making voyages in the California and China trades, operated to ports in the Far East and India, and on her last voyage she left Calcutta on January 20, 1888, and "went missing." It is believed that she was lost in the Indian Ocean. The *C. C. Chapman* of 1,587 tons, launched by Rogers at Bath, Maine, in February 1877, on her maiden voyage, carried ice from Boston to Calcutta and Madras, and she continued in trade with India for some four years, following which she became a Cape Horner. In 1895 she was converted into a tow barge because of the lack of profitable freights. The *Eclipse* of 1,536 tons, another Down Easter built at Bath, Maine, and launched (July 1878) sixteen months after the "*Chapman*," made her maiden voyage from Wiscasset, Maine, to Madras laden with ice, which was a good run out in 104 days. Later, the ship made both Cape Horn and Cape of Good Hope voyages, and although she made many voyages to the Far East prior to being sold for the Pacific trade, she evidently made no more ice passages to India. In January 1908, when approaching thirty years of age, the *Eclipse* foundered during heavy gales in the North Pacific when on a passage from Newcastle, N.S.W., with coal for San Francisco.

The *Storm King* of 1,206 tons, built at Richmond, Maine, on the Kennebec River and launched in July 1874, was a Down Easter that, it was claimed, carried 1,900 tons deadweight, or some 58 per cent more than her registered net tonnage, and yet made some fast runs. On her maiden voyage (1874-1875), the ship crossed the Atlantic from Wiscasset to Liverpool in 19 days, went from Liverpool to Rangoon in 110 days, and returned from Rangoon to Queenstown in 108 days. In 1877-1878, the *Storm King* went from Liverpool to Bombay

in 110 days; thence to Moulmein, Burma (across the Gulf of Martaban from Rangoon), in 38 days, back from Moulmein to Bombay in 36 days, and from Bombay to Astoria in 77 days. Thereafter, the ship was kept in the Cape Horn trade for years, and in 1880 she ran from Rio de Janeiro to San Francisco in only 65 days. This was an amazing sailing performance for a vessel of her fullness and sail spread and a run beaten by only the extreme clipper *Witchcraft*, which in 1851, when in her prime, covered the course in 62 days, and equaled by only another extreme clipper, the *Spitfire*. She reached San Francisco February 20, 1854, and reported a run of 65 days from Rio de Janeiro, which she left on December 16, 1853 (the passage figures, therefore, 66 days, port to port). In 1892 the *Storm King* was converted into a tow barge. The *Oregon* of 1,364 tons, launched by Rogers at Bath in November 1875, was a much faster ship in service through the years than the *Storm King*, as she had better lines and was maintained in better physical condition. On her maiden voyage, the *Oregon* went around the world sailing eastward (Norfolk, Va., to Liverpool, Cardiff, Hong Kong, Manila, San Francisco, Queenstown). Her second voyage was also around the world eastbound, but this time she went to India and ran from Liverpool to Bombay in 100 days, from Bombay to Valparaiso in 76 days, and from Pabellon de Pica to Queenstown in 88 days. After a passage to New Zealand, the *Oregon* engaged in Cape Horn service until sold to San Francisco parties in 1887 for the Pacific coal and lumber trade. In 1903 she was converted into a coal barge, but earlier in that year had made a run from Melbourne to Newcastle under sail in 5 days, which was steamer time.

The Skolfield Brothers, of Brunswick, Maine, builders and owners of ships, operated a fleet of vessels in trade with the Far East and principally with Calcutta. The *George Skolfield* of 1,276 tons, launched in September 1870, after engaging in the transatlantic cotton trade, was operated between North Atlantic ports and the Far East, mainly with Calcutta. The ship was an average sailer, but on a passage in 1889, she was 180 days from Calcutta to New York, her commander, Captain Bearse, having died off the Cape of Good Hope and been buried at sea. She was sold as a Pacific Coast salmon packer in 1893. The *Sam Skolfield* of 1,589 tons, built in 1875, was lost at sea in 1883, and a new ship building, which was to be named *Skolfield Brothers*, was launched in December 1883 and christened *Sam Skolfield 2nd*. This ship was of 1,514 tons and engaged in the Far East and Indian trade. In 1902 she was sold, re-rigged as a bark, and renamed *Harvard*. Her end came in December 1921, at which time she was abandoned in a sinking condition off Panama when thirty-eight years old. The last ship of the Skolfield Brothers was the *George R. Skolfield* of 1,645 tons, launched from their Brunswick, Maine, yard in June 1885. She also was put in the India and Far East trade via the Cape of Good Hope after a maiden voyage around the world eastbound to China, San Francisco, and Liverpool. In 1900 she was converted to a barge and was operated as such for twenty years.

William Perkins & Company, of Boston, had Paul Curtis build at East Boston during the latter part of 1863 a small ship that was designed to be a serviceable vessel, to carry well, show fair speed, and, with low operating costs, make money with average freight rates. That she was intended for the Indian trade is proved by the fact that she was named the *Akbar* after Jellaladin Mohammed Akbar (1542-1605), the reputedly "greatest and wisest" of the Mogul emperors of India, who was known during the latter years of his life as the "Guardian of Mankind." The maiden voyage of the *Akbar* (906 tons), however, was from Boston around the Horn to San Francisco, thence across the Pacific to Honolulu and Hong Kong, and home via Penang and Calcutta. In 1868 she again went around the Horn to California and continued home via the Orient. Her other voyages were by way of the Cape of Good Hope between North Atlantic ports and those of China, the East Indies, and Australia. At times, she crossed the Pacific sailing to the east, loaded at San Francisco, and rounded the Horn, making passages to New York or British ports. Evidently, the *Akbar*, notwithstanding her name, did not specialize in Indian trade. Her last completed voyage

MERCHANT SAIL

was from New York to Australia (Melbourne, Sydney, and Newcastle); thence to Sourabaya and back to New York. In 1878 she was abandoned at sea in a sinking condition, south of the African continent, when carrying a cargo of sugar home from Batavia.

The *Edyrtone*, launched at Newburyport in November 1856, was a small full-bodied carrier of 949 tons built in the clipper ship decade. She is said to have loaded 1,400 tons deadweight, or 47 per cent in excess of her registered tonnage, and was reported to have stowed 2,100 tons weight and measurement cargo on one occasion at Calcutta on a mean draft of 20 ft. In 1874 the *Edyrtone* was sold to the British, but while under the American flag the ship was engaged principally in trade with Boston ports, and her only thing called California voyage was in 1870, when she went to East Boston and launched in San Francisco, 1857, has been called a medium clipper probably because of the date of her construction, but there was on a voyage from Calcutta to Boston. The ocean life of the *Belvedere* in 1875, when she was on a carrier designed for economy of operation and money-making rather than speed. Weld & Company of Boston, her original owner, sold the *Belvedere* approaching home via the East Indies, and for the last ten years she was a Cape Homer, generally returning home via the middle third of her career was spent trading in the Far East. The ship was wrecked on the British Columbian coast on November 29, 1886, during a heavy fog.

The *Elcano* of 1,228 tons was built at Newburyport, Mass., in 1864 for the East Indian trade, and most of her voyages were to Calcutta and Bombay passages from British and continental European ports. The ship did not make any California passages via Cape Horn. On her maiden passage, which was from Boston to Calcutta, Capt. James K. Albert Pritchard was washed overboard and he and the only officer capable of being on duty. In July 1879, the *Elcano*, captain, and he and the only officer capable of being on duty. In July 1879, the *Elcano*, powered, and he and the only officer capable of being on duty. In July 1879, the *Elcano*, navigate the ship and the only officer capable of being on duty. In July 1879, the *Elcano*, British Government troopship *Euphrates*, but she remained afloat and was towed to the naval dockyard at Simonstown for repairs. In 1882 the *Elcano* was sold to the Germans.

Among the Down Easter type of sailing vessels built subsequent to the Civil War that engaged to some extent in trade with India can also be mentioned the following ships:

Name of Ship and Tonnage
PACTOLUS
(1,205 tons)

Year Built (launched)
1865
(Feb.)

Built at
Thomaston,
Maine

PHINEAS PENDLETON
(1,253 tons)

1866

Brewer,
Maine

Remarks

For first twelve years a Cape Homer. Then carried case oil to Far East and afterwards engaged in Puget Sound export lumber business. Returned to case of these voyages Africa and India in mid-nineties, last of these voyages being from New York to Zanzibar to Alleppey, India, and return to New York. After more general trading, was sold and converted into a barge. Foundered June 1907, when over forty-two years old.

Much of her career was spent in trade between England and ports in India, Australia, and New Zealand. One of these occupied three years (July 1870-June 1872). Started at London; thence to Melbourne, Calcutta, 1872; bay, and back to Calcutta; thence to Colombo, 1873; turn to London. Burned at Manila when lost, 1885.

| Name of Ship and Tonnage | Year Built (launched) | Built at | Remarks |
|--------------------------------------|-----------------------|-----------------------|--|
| MAJESTIC (1,117 tons) | 1866 (Nov.) | Portland, Maine | General trader until 1878, making several voyages to Calcutta. Was there in 1876 during a terrific cyclone, which caused great losses (ships and lives) in the Bay of Bengal. "Went missing" in North Pacific, Dec. 1892. |
| KENDRICK FISH (1,326 tons) | 1867 (Oct.) | Thomaston, Maine | Principally used in transatlantic trade. In 1873 took coal from Liverpool to Singapore, returning from India with rice. Sold to Germans in 1880. |
| WHITTIER (1,295 tons) | 1869 (Jan.) | Newburyport, Mass. | Most voyages to Australia, India, or Philippines, and many originated and ended at Liverpool. Made only one west-bound Cape Horn passage from New York to San Francisco. Wrecked on reef near Borneo coast, July 1880. |
| FROLIC (1,348 tons) | 1869 | Mystic, Conn. | Used in Cape Horn trade to San Francisco and West Coast of South America, but also made some voyages to East Indies. Last voyage before being sold to Germans was in 1878-1879 from New York to Bombay and Calcutta. Was an Italian ship in 1908. |
| SEA WITCH (1,233 tons) | 1872 (July) | East Boston, Mass. | Made three early voyages in New York-San Francisco-Liverpool trade. Between 1876 and 1901, operated chiefly in trade with Australia and the Far East and was well known in many India and China ports, the Philippines, and Madagascar. Sold to salmon packers, 1901. Abandoned at sea, Dec. 1906. |
| EL CAPITAN (1,418 tons) | 1873 (Oct.) | Bath, Maine | Until sold by the Sewalls about 1875, was a Cape Horner. Later traded with Far East and for some fourteen years ran out to Calcutta and Japan, her fastest passage from New York to Calcutta being 102 days. Capt. Herbert N. Humphrey took ship from Sydney to Calcutta by the Great Barrier Reef Route—the only square-rigger that ever sailed this course. Condemned at Montevideo in 1897-1898. |
| ST. JOHN SMITH (2,220 tons) | 1874 (Apr.) | Kennebunk, Maine | In 1880 made a voyage between Liverpool, Bombay and Calcutta. "Went missing" in late 1882. |
| FRANCONIA (1,313 tons) | 1874 (Sept.) | Bath, Maine | Wrecked on Farallon Islands on first run to San Francisco, June 23, 1881. Previous to loss, was employed as a general trader to South America, India, and ports of the Far East. |
| FRANK PENDLETON (1,351 tons) | 1874 (Oct.) | Belfast, Maine | Made no Cape Horn passages to California, but occasionally loaded wheat at San Francisco for Europe. After a maiden voyage to Russia and a second to Australia, generally used in trading between North Atlantic ports and South America or Far East. Last voyage, New York to Calcutta, where she partly loaded for San Francisco. Went to Madras to get more cargo, but sailed for the U.S.A. rather lightly laden. Off Formosa, in a typhoon, was thrown on beam ends; deck under water for 36 hours, but she made San Francisco and reached New York Mar. 1893, when she was sold for conversion into a barge. |
| LEADING WIND (1,159 tons) | 1874 (Oct.) | Bath, Maine | Made only two California Cape Horn voyages, the balance being from North Atlantic ports to Australia or the Far East. Burned, scuttled, and sold to British at Auckland, N. Z., Jan. 1891. Was a Norwegian bark about 1894 and as late as 1910. |
| A. S. DAVIS (1,400 tons) | 1875 (June) | Belfast, Maine | Maiden voyage was from St. John, N. B., to Liverpool; thence to Bombay and return to Havre. Second voyage around the world eastbound from New Orleans to British ports (thence to Hong Kong, San Francisco, Callao, and Hampton Roads, Va.) was never completed, as she was wrecked July 23, 1878, when making port, 91 days out of Callao, during a fierce hurricane that drove her ashore. Nineteen of the twenty men aboard were lost. |
| LUCY A. NICKELS (II) (1,395 tons) | 1875 | Bangor, Maine | Engaged in trade mainly with Orient, but made two voyages to Indian rice ports. Did not make westward Cape Horn passages, but carried some wheat cargoes from San Francisco to Britain. Sold in 1898 for conversion into a towing barge. |

(Continued on next page)

| Name of Ship and Tonnage | Year Built (launched) | Built at | Remarks |
|------------------------------------|-----------------------|---------------------|---|
| GEORGE F. MANSON (1,418 tons) | 1875 (Oct.) | Bath, Maine | During first ten years, was general trader with about half her voyages around the Horn to California and half to Far East. In 1886 entered Pacific lumber and coal trade. In 1876 took coal from Liverpool to Bombay in 96 days, going thence to Calcutta to load. When 2 days out, collided with and sank British steamer AMBASSADOR of Liverpool. The "MANSON" was held blameless for the accident, as the steamer had attempted to cross her bow. Went missing in Pacific in 1898. |
| JOHN W. MARR (1,296 tons) | 1875 (Nov.) | Bath, Maine | Prior to 1888, most of her voyages were to China or India; thereafter was a Cape Horner until sold at London in 1895 following her arrival there with a cargo of redwood from San Francisco. |
| P. R. HAZELTINE (1,663 tons) | 1876 | Belfast, Maine | On first long-distance voyage, ran from Liverpool to an Indian rice port and return. Sunk Feb. 1878 near Cape Horn when entering a bay for shelter. |
| CLARISSA B. CARVER (1,144 tons) | 1876 | Searsport, Maine | Maiden voyage, Bangor-Liverpool-Calcutta; thereafter ran between North Atlantic ports and India, China, and Japan. Had no westward Cape Horn passages, but made three to the eastward, reaching San Francisco from the Orient and carrying wheat from there to Europe. Sunk by collision in June 1885, leaving Japan, when about nine years old. |
| WILLIAM H. CONNOR (1,496 tons) | 1877 (June) | Searsport, Maine | Maiden voyage took lumber to Liverpool and ran from there out to Bombay in 90 days. For most of her twenty-five years of deep-sea service under sail, was in trade with the Far East. Sold in 1902 for conversion into a barge. |
| LLEWELLYN J. MORSE (1,325 tons) | 1877 (Aug.) | Brewer, Maine | For ten years, was principally employed in trade with Far East. In 1888 arrived at New York from Calcutta and was sold to Rosenfeld, of San Francisco. Became a salmon packer in 1895. Sold in 1925 to Los Angeles moving picture interests and later became a fishing barge when some fifty years old. |
| WANDERING JEW (1,650 tons) | 1877 (Sept.) | Rockport, Maine | Used mostly in trade with Orient. Made only one westward Cape Horn passage and that from Liverpool. Went to San Francisco on four occasions from India, China, or Japan to load grain for Europe. Burned at Hong Kong on Oct. 30, 1895, when eighteen years old. |

Early Indian Shipbuilding and Shipping

Marco Polo (1254-1323), the Venetian traveler to the Orient, who dictated to a scribe regarding his experiences and observations following his return and while a prisoner of the Genoese in 1298-1299, tells of Indian vessels and shipbuilding methods that he particularly noted, but there is doubt as to whether he describes Indian-built vessels or Chinese craft that he saw trading to India. C. Northcote Parkinson, in *TRADE IN THE EASTERN SEAS*, says: "The shipbuilding methods, however, which he [Marco Polo] particularly noted were characteristic of Indian shipping at a later period. Allowing them to have had a Chinese origin, it is hardly to be supposed that no ships were built in India in the thirteenth century or that those then built there were without the features Marco Polo describes." Whereas Marco Polo makes no mention of the most important system of "rabbeting," or interlocking, outside planking, which we well know was the Indian practice in the 1700's and later, he was impressed with the system of dividing wood hulls into watertight compartments by

bulkheads, which the Chinese (and probably the Indians) used in his day, but which evidently the Indians had discontinued using at the time of the British domination of the country. The view popularly held that Europeans (and primarily Britishers) taught Indians how to build ships is untenable, and the opinion freely expressed by some historians that Englishmen showed Indians how to build better ships is in many respects false. The European vessel was a different type of ship, but that does not mean that it was a better one, even though the type might have had certain advantages for large tonnage engaged in the long-distance deep-sea trade in which it was employed and operated in conformity with European traditions. Parkinson, an English historian, says:

In many respects the European ship was no better than the ship it superseded; and the European ship that came from Europe, as opposed to the European ship built in India, was a great deal worse. Had it merely been a question of English-built vessels taking the place of Indian vessels, the case would have been one of bad ships superseding good ships. And there is another factor to notice about the advent of the European ship; namely, that it was not introduced by Europeans but by natives. It may safely be asserted that there was never an instance of a white carpenter standing over a native

shipwright and telling him to build differently. The native shipwright had, in fact, no instruction of any kind; the proof of this being that his method of building remained unchanged, only the finished product being revolutionary. It was partly owing to this that his copy was so great an improvement on the original. What may seem the final puzzle is that he almost certainly introduced his imitation European ship without any conviction that it was a better ship than those his father had built; which indeed it may not have been.

The Chinese and Indian junk has been spoken of by occidental historians as if it were an outrageously primitive craft. It did not change with the years, being much the same in both design and construction in the eighteenth century as it was in the thirteenth; but this indicates not so much backwardness in the eighteenth century as forwardness in the earlier years. H. Warrington Smyth, in *MAST AND SAIL IN EUROPE AND ASIA* (London, 1906), says that the old Chinese and Indian junk was and is an exceptionally handy and efficient vessel. "As an engine for carrying man and his commerce upon the high and stormy seas, it is doubtful if any class of vessel is more suited or better adapted to its purpose; and it is certain that for flatness of sail and for handiness the Chinese rig is unsurpassed." Moreover, he adds that in scientific fore-and-aft sailing and in the use of centerboards, leeboards, windlasses, and labor-saving devices (notwithstanding the abundant and cheap available oriental labor supply), the Chinese remained ahead of Europe until the middle of the nineteenth century. This was the peak of the development of occidental sail and the clipper ship era, when the United States supplanted Britain for a decade or so, prior to the Civil War, as Mistress of the Seas in the realm of merchant sail.

China and India also built large junks, so the Europeans did not by example even influence the Orientals to build larger vessels. Five-masted junks of well over a thousand tons were used in Indian and Chinese waters, and vessels of this type and size crossed the Indian Ocean and traded with ports of the east coast of Africa. There is much evidence that as early as the fourteenth and fifteenth centuries relatively large Indian ships were built. Nicolo de Conti (1419-1444), Venetian merchant, explorer, and writer, traveled much in India and the East and was impressed with the culture and wealth of much of India, which even he, a prejudiced Venetian Roman Catholic of noble family, felt to be abreast of Christian Italy in civilization. He writes:

The Natives of India build some ships larger than ours, capable of containing 2000 butts, and with five sails and as many masts. The lower part is constructed with triple planks, in order to withstand the force of the tempests to which they are

much exposed. But some ships are so built in compartments that should one part be shattered, the other portion remaining entire may accomplish the voyage.

Sir H. Middleton, in 1612, saw an Indian-built Surat ship, which was said to have a burthen of 1,500 tons and was 53 ft. long, 42 ft. beam, and 31 ft. deep, and Parkinson says:

David Macpherson, in *THE HISTORY OF THE EUROPEAN COMMERCE WITH INDIA*, says that Indian Lascars, "from their feeble habit of body, and being accustomed only to short voyages during the fine-weather season upon the tranquil seas of India, are unable to bear the cold, and utterly incapable of the vigorous exertion and rapid movements necessary in the boisterous seas of Europe." Usually, it took about two Lascars to do the work of one British seaman, provided they could do it at all, and this ratio has persisted well into the twentieth century; for most Lascar sailors employed on British steamships engaged in the Indian run seem to be as numerous as ants and about as useful as children. In the days of sail, Lascars were practically useless on a British square-rigger when it became necessary to do such work as clearing away the wreckage of a fallen topmast, and they would not fight to protect the ship from an enemy. Indians from some mountain tribes would fight, and they could be depended upon to defend a ship; but they were not seamen, and the calling did not attract them. If carried, they were merely marine soldiers. Lascars had also to be employed as sailors, and even on Indian-manned armed country ships engaged in coastal work European officers were necessary, for sepoys would not take orders from Lascars.

The captain of the *Europe*, when that ship had to fight to defend herself at sea, wrote of the "great courage" of the officers, petty officers, and Europeans of the crew and added: "But as for the Lascars, they were only in the way." In the captain's account of the defense of the *Streatham*, we read that the chief officer went below to encourage the men working the guns. He returned to report that the Chinese and Portuguese (referred to as "the degenerate posterity" of the original invaders of India and distinguishable from the natives only by their religion), who were stationed on the gun deck, "could not by any exertion of the officers be kept to their quarters, deserting as fast as they were brought back," and the firing had to be almost exclusively maintained by Europeans. The Chinese sailor, like the Indian, would not fight, but in the case of the Chinese it was at times debatable as to whether this attitude was due to cowardice or indifference; the inscrutable Oriental was seldom articulate or emotionally expressive, but the Lascar repeatedly gave positive evidence of his lack of courage. In the days of the British East India Company, records show that the Indian sailors could not stand the voyage from the Indian Ocean and rounding the Cape in the South Atlantic and later in the North Atlantic to England, and it is said they were "killed by the cold." The *Lucy Maria* sailed for England from India in 1801 with 86 Lascar seamen for a crew; 22 died on the passage, and 20 had to be hospitalized upon arrival in England. That this was not a conspicuous and unusual experience is indicated by the record of the *Surat Castle*, which sailed from India at about the same time with 123 Lascar seamen aboard; 36 died on the passage, and another 45 of them were ill upon arrival in England.

The great obstacle to commerce in the Eastern Seas from the earliest days of record has been piracy, and the limited extent of Indian and Chinese trading has been due not to their ships or to a lack of knowledge of the principles of navigation but to lack of courage on the part of their seamen. If the Indians and Chinese had had the moral, mental, and physical characteristics of the aggressive, adventurous, and acquisitive Europeans, there would have been much more reason why they should have discovered Europe and the waterway thereto than that Europeans should have been pioneers in finding India and the Far East and initiating trade between the Christian nations and the so-called infidels. Vasco da Gama (1460-1524), the Portuguese navigator and discoverer of the sea route from Europe to India, reached Calicut on the Malabar coast (and located in the southwestern portion of India) on May 20, 1498, because of the help received from Indian merchants resident at Malindi on the east coast of Africa, who loaned him the services of a pilot to guide him to his desired goal. When Vasco da Gama sought to impress the Indian seamen with his navigational instruments, they quietly produced their own, which, while generally similar to his, he found to be superior.

The compass was undoubtedly first "invented" and practically used in the Far East, although Western civilizations (Christian and Moslem) sought for centuries to give credit

to the Arabs (or Moors) for the origination and useful application of this apparatus. The magnetized needle was known to the Chinese from early times, regarding which it is difficult to separate history from tradition. It seems to have been used at first for setting a course on land fully as much as on the seas. In parts of eastern and southeastern Asia and the lands in the East, sandstorms wiped out roads, and caravans were as helpless as a ship in mid-ocean in steering a course toward the desired destination when not favored by the sun and its known position in relation to time. The Chinese and Mongols used direction-finding land chariots from early days, and some of them were elaborate affairs, with a hand above the vehicle always pointing to the south in harmony with the way a carefully placed and protected magnetized needle (floating in a bath below) operated to show in which direction lay the south. Some of these direction-finding chariots also recorded the distance traveled in addition to pointing out the course, for a certain number of revolutions of the wheels was necessary to cover an Eastern mile or unit of distance. Attachments were devised to ring a bell when every "mile" was traveled, and a record was made of the distance covered per hour or per day as well as the direction of the course. A combination of a compass, direction-finder, and log was practically used by Orientals on their commercial journeys with caravans and military expeditions long before Europeans rounded the Cape of Good Hope or the Arabs, in the Indian Ocean, ever heard of the marine compass, which they first saw on a Chinese junk trading with India. However, it is possible that the first contact of the Moslems with the Chinese or Mongol magnetic needle was when they saw it used in an oriental military expedition or some large commercial caravan that crossed the deserts of sand when engaged in trade. It is known that Genghis Khan and his famous general, Bayan, "of the hundred eyes," used direction-finding chariots with magnetized needles and compass cards in their military expeditions, and Bayan also used gunpowder, not to make a useless noise like Chinese firecrackers but, by means of tubes (gun barrels), to destroy by fire a tremendous Chinese fleet that blocked his path as he sought to subjugate Cathay and overrun China with his Mongols. This he did in 1276, so terrifying the Chinese Crown Government and people with the destructive use of gunpowder (a sort of atomic bomb of the period) that they yielded their capital of Kinsai to the Mongols without attempting to defend it. Kinsai, at this time, was declared to be "the largest and richest city in the world," and Bayan obtained possession of it by "unconditional surrender," as he was the foremost and most progressive militarist of his era and had the best equipped and trained army. Only distance, transport, and the vast population of China, which needed military attention, saved Europe, with its Christianity and backwardness, during the age of chivalry and superstition from being ignominiously defeated in battle, overrun, and subjugated by the so-called Mongol Huns. They were infinitely better fighting soldiers and better organized, trained, and equipped than the best troops that any Christian group of nations could have got together and armed to defend themselves.

The compass, so vitally necessary for deep-sea navigation, is known to have been used by the Indians as early as the sixth or seventh century, and as far as both instruments and knowledge of deep-sea navigation go, there was nothing to prevent Indians (or the Chinese) from sailing around the Cape of Good Hope into the Atlantic and discovering Europe or America. In so far as the physical possibility of their making such a voyage in or prior to the days of Vasco da Gama is concerned, it can be said that, at that time, Indian and Chinese ships were much superior to and more seaworthy than European ships, and as a matter of fact a Chinese junk once sailed to Europe (however, this junk was sailed by Europeans). Parkinson truly says: "It was through Courage that Europeans, and especially Englishmen, found their way to the East. And, once there, it was Courage that they had to sell [not knowledge of shipbuilding, trading, industry, agriculture, etc.]. And if the English eventually managed to exclude their rivals from India, it was not through business ability or hard work or honesty, but through fighting; and especially fighting at sea." Again, we are told that the part that the Europeans played in the life of the East is represented by the sword.

They ruled not by skill but by courage. The great obstacle to trade in the Eastern Seas had always been piracy. It was not an obstacle to the Europeans. They first arrived in the sixteenth century in crank and leaky ships, vastly inferior to the Chinese junks, and a great deal smaller. In these ill-designed and ill-built vessels they made their way about the seas, and as they did so they were ravaged by diseases of which they died with amazing rapidity. But they did not die nearly so quickly as did anyone who tried to stop them. Their ships

were bad, and they themselves did not even realise that the local ships were better, but they feared nothing under heaven. Had they feared anything they would never have rounded the Cape, least of all in such appalling craft. It was only by virtue of their courage that they were there at all. To men of this kind, running enormous risks daily, eternally on the verge of drowning or fatal illness, there was nothing frightening about piracy. They came to trade perhaps, but they came with swords, and some of them infinitely preferred fighting to trading.

However ignorant the European adventurers may have been, they were positive that they had a monopoly of wisdom; they believed that they were superior beings and were self-satisfied, blind, arrogant, and intolerant. They were convinced that they were born to command; that as a race they were God's elect and destined to rule over all other races different from their own that they came in contact with. Any old civilization was merely barbarism, any religion that differed from their own was of the devil, and all practices and customs that were new to them were deemed rude, outlandish, and indicative of a low order of enlightenment.

Incidentally, Vasco da Gama, following his arrival at Calicut and a friendly reception by the natives in 1498, erected a marble pillar as a mark of conquest as well as a proof of his discovery of India, but when he attempted to dominate the commercial life of the people, Mohammedan traders intervened. Later, a Portuguese fleet under Pedro Alvarez Cabral visited Calicut and attempted by force to obtain exclusive trading rights, acquire land, and build a "factory." Once more Mohammedan merchants entered the picture. The belligerent and domineering Portuguese left behind by Cabral were driven away or killed and stolen property reclaimed by the Hindus. When Portugal heard of this "outrage" against "the Christian king," Vasco da Gama, in January 1502, was appointed Admiral of India, furnished with a powerful fleet of ten ships, heavily armed and well manned, and sent on a punitive expedition as well as one of definite conquest. Da Gama, on arrival at Calicut, did no negotiating, but promptly bombarded the town and "treated its inhabitants with a savagery too horrible to describe." Proceeding down the Indian coast in November 1502 to Cochin, another important trading center, "doing all the harm he could on the way," Da Gama terrorized the naturally peaceful Indians, dictated trading conditions and terms favorable to the Portuguese, pillaged until his ships were heavily laden with rich Indian goods, and returned to Lisbon in September 1503 a national hero as well as an acknowledged champion of Christendom in its policy, backed by the Church of Rome, to evangelize the world. Portuguese conquests continued in India and the East, and although Da Gama wanted to stay at home and enjoy his prestige and wealth, he was made Viceroy of India by John III of Portugal. Da Gama arrived at Goa (still a Portuguese domain on the east coast of India) in September 1524, but died from natural causes on December 24, 1524, at Cochin. This was the general pattern of Christian Europe in opening up trade relations with India and the lands of the East, in extending the Christian religion, and in enlightening and civilizing infidels and barbarians. Other European nations may have been less cruel than the Portuguese, but the principle of opening up trade by the sword and of the conquest of all newly discovered lands was the same.

At the time of the Renaissance in Europe and for a long succeeding period when Europeans, representing a Christian civilization, came in contact with Eastern races and their civilizations, the Europeans found a great difference between the Chinese and Indians in their beliefs and attitude toward the foreigner. The principal trouble that Europeans found in dealing with the Chinese was an isolation, based on intolerance, and a thorough conviction of their superiority coupled with absolute ignorance of the outside world and indifference in regard to it. The Flowery Kingdom was firmly believed by the Chinese to be the all-important

and supreme center of the world and to be surrounded by inferior, awe-struck nations of no consequence, of which Portugal, Holland, Spain, and England were representative of the nations that built ships and sought to pay tribute to, come in contact and trade with China—believedly the most enlightened, superior, and powerful kingdom in the world. China was ruled by egotistical, self-satisfied emperors, who lived far from the sea and did not see European ships and were too superior and godlike to come in personal contact with people of the inferior infidel nations. The result was the continued isolation of China (and Japan) for centuries, with persistent humiliation of the foreign barbarians; but the infidels were kept from grabbing land and exploiting the country until nearly the middle of the nineteenth century, when Britain went to war with China (the Opium Wars) and, by bombarding its coast, gained possession of the island of Hong Kong. The occupation of Macao by the Portuguese (with the sanction of the Chinese), like the later occupation of Whampoa by other European nations, was merely a voluntary loan by China of a trading base. For centuries, it was used by the Portuguese with amazing humiliation and subservience to the oriental master race. Its use brought advantages and tribute to the Flowery Kingdom and segregated the barbarians in a restricted area, which land was worthless to the Chinese and where the trading infidels were confined in what was virtually a barricaded and patrolled concentration camp. The East India Company, throughout its entire existence as a trading corporation, found it extremely difficult and humiliating to trade with China, but the profits resulting from such trade were enormous; so, like the Portuguese (at Macao), it "cheerfully submitted to rules and regulations, exactions and indignities." The ships trading to the Canton River (the only water and port in China where foreign ships were permitted to drop their anchors), as Charles Reade said, found China as difficult to enter as Heaven and as difficult to get out of as Chancery.

India was very different from China. Because of India's greater knowledge of the world, its absence of extreme egoism and believed superiority, its kinder religion, natural hospitality and friendliness, the less warlike attitude of its rulers and a general desire for peace, India was not able to protect its civilization and culture and keep the belligerent and avaricious European Christian pirate-traders from exploiting it and ultimately subjugating the entire continental peninsula. The history of India from its "discovery" by the Portuguese in 1498 to modern times does not reflect credit on the Europeans who exploited the natives, but Britain, principally through the operations of its East India Company, was victorious in its fights with Portugal, Holland, and France for control of the land. Britain's honorable part in regard to India lies in the fact that the sea power of England proved superior to that of all its European rivals and the fact that the British rule of the Indians, from the first, was more humane and enlightened than that of the other Christian nations; however, the prime and actuating thought of all was to exploit and subjugate a vast and wealthy country, whose people were too peaceful and weak to defend themselves.

The pirates of the Eastern Seas, used to capturing and pillaging trading junks manned by peaceful Orientals, were shocked when they tried to adopt their usual tactics with European ships armed with cannon and manned by courageous men who seemed to enjoy a fight. For a few generations, European ships were not common in Indian and oriental waters; but after European Protestant nations defied the Pope's separation of the world into Portuguese and Spanish monopolistic domination and trading areas and after ships of all nations commenced to explore the waters of the globe, looking for wealth and profitable commerce, the pirates of the East came to the conclusion that as a general proposition it was better to leave European ships alone. It is said that about the middle of the seventeenth century it became "the golden rule of piracy" in the Indian Ocean, China Seas, and waters of the East Indies not to molest sizable armed European vessels. They were easily distinguishable from junks, dhows, grabs, beglas, and all such Eastern craft by their hulls and rigs, and the pirates had learned from the appearance of the sides of a European ship how many cannon she carried on a broadside. Every black square in a wide white strake on a ship's

side meant a gun port; therefore, the pirates reasoned that Europeans foolishly advertised the fighting strength of their ships—a practice that, of course, was of advantage to buccaneers and saved them from making serious mistakes in attacking superior force and ships manned by fighting “foreign devils.” The Indians soon learned that the only way to protect their own ships from pirate attack and to sail through pirate-infested waters without molestation was to build vessels that would resemble European ships, and at the end of the seventeenth century the native builders at Surat, the ancient shipbuilding center of India (on the west of the Gulf of Cambay and about 150 miles north of Bombay), were constructing vessels that looked like European ships. More and more throughout the eighteenth century, Indian shipbuilders copied foreign and particularly English ships, and all their large ships were constructed, rigged, and painted to resemble European East Indiamen. Security at sea was the only reason for this imitation. It is interesting to record that whereas Chinese pirates used junks and Red Sea pirates dhows to the last, the Mahratta (Indian) pirates in the later days of their activities modeled their vessels after European privateers. We read that as late as well into the twentieth century, the native craft built on Minicoy Island (which is in the Arabian Sea off the extreme tip of the Indian peninsula) have the lines of seventeenth century Indian ships, but are painted “with a broad white band and black imitation gun ports at intervals, like English ships of the nineteenth century.” Parkinson says: “The islanders have probably forgotten by now the object of this piece of camouflage, or even what the black squares are supposed to represent—if indeed they ever knew—but they have inherited the tradition that safety lies in looking English. They go on looking English long after the English themselves have ceased.”

It is well to note that the Indians never changed the type of ship that they were building because they thought that the European (or British) ship was superior in model, rig, or sailing prowess and as an economic ocean carrier to their own junk, which they and the Chinese had been building for untold centuries. Moreover, although the Indians changed the model, rig, and appearance of their ships for security reasons, they did not change their mode of construction or their materials; these they were convinced—and it would seem that in this they were correct—were superior to anything any of the European nations had to show. Again, it is probable that early European East Indiamen were no faster than, if as fast as, well-built and manned oriental junks; whereas the dhow used in the Red and Arabian Seas and Bay of Bengal could generally outsail not only Chinese and Indian junks but also any eighteenth century European East Indiaman, and Indian shipbuilders, at least in the Surat area, built dhows or copied dhow features in both hull and rig for ships where speed rather than cargo capacity was needed. Until the British endeavored to suppress piracy and the slave trade with their fast sloops of war, they never really knew the sailing qualities of the infidels' ships that they so despised. Indeed, it has been said that British naval vessels under sail were never able to clean up the slave trade engaged in by fast Arab lateen-rigged dhows. Accounts of races between dhows in the Red Sea comment on the high speed of these craft under canvas, and Parkinson well says (1937): “There is evidently something to be said for a type of vessel we [the British] have been chasing without success for about a century.”

Indian “country ships” (i.e., ships built and owned in India), by the end of the eighteenth century, were being constructed to look like British East Indiamen and were being heavily armed. In October 1799, Bombay reported the launching of the 788-ton ship *Mysore* for Calcutta owners. This ship was to carry thirty-six 12- and 6-pounder guns, and the publicity states: “The ship was built upon the improved principle of sailing upon a wind, and is to be added to the strength of the marine in India. Three other ships of the same dimensions and force, are on the stocks at Bombay, and are expected to be launched in December.” Vessels of this type, at that time, generally mounted 12 to 14 broadside guns and, with four European officers, carried a native crew of about seventy-five men. It is doubtful if the *Mysore* ever actually carried 36 guns, although she may have had her hull pierced for that number and mounted a much smaller number, or she may have been pierced for half the

reported number of guns and had painted black squares between the gun ports to deceive in regard to her actual power. The prime object of the design of the country ship was to resemble a British ship of force, and the camouflage was carried to extremes. This attempt to have coasting ships look like East Indiamen resulted in the building of unwarrantedly large and expensive ships for the Indian country trade. Admiral P. Rainier, in 1799 (the year that the *Mysore* was launched), criticized the heavy arming of country ships. Whereas British East Indiamen, well armed and manned by British seamen, would fight off a French privateer, Rainier well knew that building country ships "having generally a tier of guns in their upper deck, with ammunition in proportion, to give them the appearance of ships of force" did not, even by the actual existence of guns aboard, give them the power that they sought to represent; for "they are manned only by natives who are seldom known to stand to their quarters." He significantly adds that the mischief of this is that "when taken by the enemy, they immediately become privateers fit for service." Because of the lack of courage and of fighting ability on the part of Indian crews, the shipowners, it was claimed, were virtually making presents of well-armed fighting ships, with guns and ammunition aboard, to buccaneers or foreign privateers who would call the bluff of the Indian merchants, be unimpressed by "the appearance of force," and vigorously proceed to take them by an action at sea when the Indian crew, true to form, refused to fight.

From the earliest days, Indian shipbuilders had the advantage of being able to use teak timber from forests of Malabar, the Mahratta country, Coromandel (and Madras), Pegu, Rangoon and the Burma region, and by going farther afield they could find teak growing in Java, Sumatra, and other parts of the East. Malabar teak was highly esteemed for shipbuilding and was used by Surat constructors. As the economic supply of Malabar teak diminished by cutting and Burma teak (somewhat inferior in quality) was cheaper because of the accessibility of the forests to deep water, shipbuilding boomed on the Hooghly River around Calcutta. Still later, the British financed Indian shipbuilders in establishing yards at Moulmein for the building of teak ships for British trading on the Seven Seas. The best Indian ships were built at Surat and in the Bombay region, but several other shipbuilding centers existed in Malabar farther south, such as at Mangalore, where pohoon, a good timber for making spars, was obtained. The art of Indian shipbuilding, which evidently originated in Malabar, spread to the east coast, upper Bay of Bengal, and Burma points; but where and when wood ships were built in the greater Indian territory, they were vessels constructed by Indians using Indian methods and not European ships built from European specifications by Indian labor bossed by European shipbuilders.

Teak, following the experience of the British with this wood, was occasionally described by them as virtually "imperishable," and certain growths of it were highly esteemed for the planking of British composite ships, deck planking, rails, deckhouses, etc., but Indians built their ships with teak framing and planking. It was easy to work, had a natural oil, and required no seasoning. It was the boast of Indian shipbuilders that an Indian-built teak ship would last four times as long in ocean service as the best European-built oak ship, and it is known that many Indian-built teak ships were in use for a century or more and until that type of tonnage was no longer profitable to operate or maintain. Not only did Indian shipbuilders, when building the European type of ship, persist in using Indian practices of construction but also they continued to use their traditional method of floating without launching—a practice later followed to some extent, even to the days of World War II, by the British and Americans. J. H. Grose, following a voyage to the East about the middle of the eighteenth century, wrote: "At Surat too they excel in the art of shipbuilding. If their models were as fine as those of the English, of whom especially they prefer the imitation, there would be no exaggeration in averring, that they build incomparably the best ships in the world for duration, and that of any size." Grose refers to the Indian ships as being fuller-modeled and bigger carriers than the best of the English ships; but when the Indians sought to imitate an English type of ship, they never departed from Indian methods of construction

or the use of Indian materials, for in the field of practical and quality building they well knew that they were far superior to any European constructor of ships. The Dutch Rear Admiral Stavorinus, writing in 1770-1775 of Indian shipbuilding, said:

They do not build their ships in the same manner as the Europeans; most of the timbers are fitted in after the planks have been put together. There was one built while I was at Surat, in what is called the English yard; it appeared to me to have about one hundred feet length of keel; it stood in a kind of graving dock, if a large excavation, closed towards the river by a dam, without a stone facing or any thing that resembled it, may deserve that appellation. They do not launch their ships, as we do, from slips; but, when sufficiently finished for floating, they dig through from the water to the sort of docks mentioned above, which they call cradles, where the ships are, as it were, dropped into the stream that is brought up to them.

They do not put the planks together as we do, with flat edges towards each other, but rabbet them; and they make the parts fit into each other with the

greatest exactness, bestowing much time and attention upon this operation; for this purpose, they smear the edges of the planks which are set up, with red lead, and those which are intended to be placed next, are put upon them, and pressed down, in order to be able to discern the inequalities, which are marked by the red lead, and afterwards taken away; they repeat this till the whole fits exactly; they then rub both edges with a sort of glue, which becomes, by age, as hard as iron, and they cover it with a thin layer of capoc, after which they unite the planks so firmly and closely with pegs, that the seam is scarcely visible, and the whole seems to form one entire piece of timber. . . .

Instead of bolts, they make use of pieces of iron, forged like spikes, the point of which is driven through, clenched on the inside, and again driven into the wood. . . .

The "English yard" here referred to was not an English-owned or dominated yard but merely one that was building ships of a type that, as far as general appearance was concerned, resembled English vessels.

Marco Polo wrote of the oriental method of repairing ships, which persisted to some extent to the end of Indian wood shipbuilding and repairing. He observed that all vessels built in the surprising new lands in the East were double-planked (or sheathed) when constructed, and he added that after service, when a ship's hull was in need of repairs, the practice was "to give her a course of sheathing over the original planking [or sheathing], forming a third course, . . . and this, when she needs further repairs, is repeated." Gabriel Snodgrass, a British shipbuilder, as a young man was sent to Bengal by the East India Company as an inspector of construction and repairing. He returned to England in 1757 to become one of the company's surveyors and later its chief surveyor (holding this office until about the turn of the century). Nearly five centuries after Marco Polo, we find Snodgrass recommending to the British East India Company this old Indian system of repairing ships, and he also urged the adoption of internal watertight bulkheads, with the planking rabbeted, as if these ideas, copied from the Indians, were novelties that were the product of his own brain. Snodgrass made many improvements in the design and construction of British ships, and several of them were merely the adoption in England of Indian practices. The absurd and extreme "tumble home" above the water to the deck, common in old European ships, he rightly criticized, and he suggested the building of straight-sided ships for simplicity in building, strength, stiffness, seaworthiness, internal capacity, and a greater spread to the shrouds. Snodgrass, in his missionary work to improve the design of the ships of the British Navy in the last quarter of the eighteenth century, was urging the self-satisfied British Admiralty to build its men-of-war as nearly as possible like the Bengal rice ships, but he did not admit this.

The Indians covered the bottoms of their ships with a composition that, authorities tell us, was "more effective in anti-fouling than sheathing them with copper"; moreover, these preparations preserved the planking. Marco Polo described at length the coating used for the bottoms of Indian and Eastern ships in the thirteenth century and said that it was "a kind of unguent which retains its viscous properties more firmly, and is a better material than pitch." L. de Grandpré, in *A VOYAGE IN THE INDIAN OCEAN*, dwells at length upon the protective substances applied to the underwater bottoms of Indian ships and says regarding one of them: "It adheres so closely to the planks of the ship, that it fills all the crevices, and effectually prevents the water from penetrating." He speaks of another preparation that

was used and applied as a paste that became so extraordinarily hard "as to turn the edge of the best tempered instruments." The English speak of mysterious Indian wood oils and resinous oils, some that are hard, others soft and the consistency of putty; but they never learned the art of production or application, although at intervals it was proposed to apply Indian compositions that had proved their efficacy through the years to the bottoms of English ships in lieu of copper sheathing. Parkinson says:

Not only was it needless to copper Indian ships; it was also needless to fasten them with copper bolts. Iron bolts always tended to corrode in an oak-built ship, especially if beneath the water-line. But teak is an oily wood which may safely be bolted with iron. As copper was expensive, this was a distinct argument in favour of teak.

The British Admiralty, which had no use for American oak in the building of its naval vessels, also maintained that teak was unfit to be used in the construction of ships of war, as it would splinter easily if struck by shot. This was known by unprejudiced authorities to be untrue, for teak as cut and used for ship planking was less likely than oak to splinter when struck against the grain. As some teak-built ships had extremely thick sides, the statement that "it was found in actual practice that a teak-built ship's side was almost impervious to cannon shot" was probably not as incredible as it reads. Teak is not a big-growing tree in either height or diameter, and as far as size is concerned, we are told that Indian teak "grows sometimes to a length of fifty feet long and twenty inches in diameter," which, when one considers the average size of stumpage cut, indicates not very sizable timbers. Crooked trees, from which teak framing of ship knees and futtocks were shaped, it would seem, grew on high slopes farthest from the water, which meant difficulty in transport to the ocean, where ships had to be built. India is, however, a vast country and the teak-growing areas immense as compared with the oak-growing areas of England; so we read that "whereas oak for shipbuilding in England is limited and is rapidly becoming exhausted, teakwood in India is abundant and should supply the needs of the British Empire for many centuries."

The English criticized Indian ships, not because they were not well built (for it had to be admitted that they were better constructed than any British ships) but because they were too strongly and heavily built and were "calculated to last a century." They were said to be "clumsy and slow." The heavy weight of a solidly and strongly built teak ship, modeled full to get carrying capacity, naturally made a slower ship than one which carried the same weight of cargo, with a lighter weight of hull and a sharper-lined model. However, Indians proved that they could build all classes of wood ships of varying model fullness and speed and, using their own materials and methods of construction, build them stronger and better than the British.

Prior to the British domination of India, the shipbuilding centers were near the teak timber supply in Malabar on the west coast and in Pegu on the north coast of the Bay of Bengal. The first vessel built for the English in India was constructed at Surat in 1735 by a Parsee named Lowjee Nassurwanjee. Following the completion of the ship, Nassurwanjee was persuaded by Dudley, the representative of the English East India Company, to move to Bombay (meaning "Good Bay" and so called first by the Dutch) and become master builder of the company's dockyard, in which vessels were built and repaired for the Bombay marine and British-built East Indiamen that had been damaged in service rehabilitated. The sons, grandsons, and great-grandsons of Lowjee Nassurwanjee succeeded him in the business, and the Bombay Dockyard, which at the turn of the century employed about a thousand men (all Indians), built all classes of vessels, country ships (or coasters), East Indiamen, and warships—sloops, frigates, and even ships of the line. The dockyard gained a splendid reputation for the quality of its work, the diversity of its product, and the efficiency and economy of operation. As time advanced, the yard turned out steam as well as sailing vessels, and it built some fast paddle-wheel steamers for the Indian Navy. One of these, the *Punjaub*, was later sold in London and acquired by Capt. J. Willis. He took out her machinery and converted her to a full-rigged three-masted ship, renaming her *The Tweed*. This Bombay-

designed and built vessel proved to be exceedingly fast under canvas in both the Indian and Australian trades. She was a real clipper, and her model was exactly copied when Willis built the smaller *Cutty Sark*, which is credited by many marine experts as being the fastest sailing ship ever built in the British Empire. *The Tweed* definitely proved to the world that an Indian naval architect and constructor could design and build a vessel in India as speedy and successful as the best talent in the British Isles could produce. The Parsees took to trade, which seemed their natural bent, and Bombay in the eighteenth century grew to be a great shipbuilding, shipping, and trading center. Parkinson, in *TRADE IN THE EASTERN SEAS, 1793-1813*, writing of the marine mercantile community of Bombay, says that of some forty-five persons interested as owners, underwriters, or merchants, twenty were white men (including two or three Spanish and Portuguese), and the rest were natives. Parsee Indians were partners in the European firms, and they were believed to have provided the bulk of the capital. The Parsees had evidently, through sheer ability and merit, held a monopoly of shipbuilding in Bombay; for we read that at this time "there were only six shipbuilders, all Parsees and all, very probably, members of the Lowjee [Nassurwanjee] clan." The chief business of the Bombay country ships was the carrying of raw cotton to China, and they generally returned with tea, chinaware, and fabrics.

In the Bay of Bengal, ships had been built at Pegu of local teak from the earliest times of record, and tradition and the Chinese influence were evident. Big junks up to some 600 tons had been constructed to trade in rice, salt, etc., before the days of the discovery of India by the Portuguese. Pegu (or Burma) teak is credited with being lighter and more buoyant but less strong and durable than the Malabar growth, and it would seem that, using a different material, Pegu and Rangoon methods of construction were not the same as those of Surat and the west coast. In the Bay of Bengal, however, the European type of ship, as elsewhere, gradually supplanted the native type; but the change was merely imitative camouflage for security reasons, and traditional building practices and materials continued to be used in constructing ships of an alien type.

India produced its own canvas and cordage for ships. Its sailcloth (a cotton fabric known as dungaree) was more pliant and less likely to tear than European canvas or duck, but the British said that it was not so strong—an opinion by no means unanimous, as many shipmasters, both European and American, favored Indian and particularly Bengal sailcloth over European canvas. Indian-owned country ships used dungaree sails, and as the fabric was somewhat "golden-hued," it would seem that this fact alone helped to identify Indian ships at sea, even if their models and rigs were copies of European craft. Indian coir cordage, made from the fiber of the coconut shell, was unexcelled for hawsers, being unusually elastic and strong. Coir rope, used on Indian-built ships for standing and running rigging from early days, was said by the British to be inferior to the hemp that they obtained from the Baltic. Some hemp rope was made in India in limited quantities, but Indians liked their coir cordage and used it generally on their ships until, as the end of merchant sail approached, Manila rope (known to the Indians at least toward the end of the eighteenth century) proved its superiority for rigging, if not for large cables. When British capital was invested in Indian country ships, the British often required the use in building of supplies from England, imported (to the disgust of the Indians) at high cost. It is said that, as a result, many Indian-built ships were "mongrels," being neither Indian nor European vessels. At times, as much as forty per cent of the cost of building a country ship was in its equipment, and owing to the expense of imported naval stores and the conflict between Indian and British owners, many an Indian country ship went to sea with part of her sails made of dungaree and part of European canvas and with part of her rigging of coir rope and part of imported hemp.

The British secured their first real foothold in India in 1639, when the native authorities granted them permission to build the first of the British East India Company's forts near the present city of Madras on the east coast of India and on the Bay of Bengal. This became

known as Fort St. George. A footing obtained at the Ganges basin grew by 1697 to be Fort William on the Hooghly River, and gradually this locality, which became known as Calcutta, gained the ascendancy over Britain's other two early and prime seats of government (Bombay and Madras) and over its many other footholds and outposts. In 1765, Britain, because of its marine power, drove the French and Dutch out of Bengal, and Calcutta became the dominant city and port of British India. Calcutta and environs on the Hooghly River naturally grew to be a shipbuilding center, as it became a prominent port and repairs to deep-sea shipping were needed. Yards were established about 1760, but Calcutta shipwrights used both Pegu and Malabar practices. They were dependent on Burma for timber, but at an early date, at times, used wood other than teak for outside planking, while using teak for framing timbers, keel, keelsons, etc., and also for decks. Calcutta-built ships were generally more numerous but somewhat smaller vessels than those built at Bombay and were designed for use in the coasting trade or where small, fast ships were required, such as in the illegitimate Chinese opium trade. Calcutta, lying about a hundred miles up the Hooghly River (the western branch of the Ganges), had a problem of depth of water, and big, deep-draft ships had difficulty in reaching the city and were required to discharge their cargoes and reload well downstream. Calcutta was, in fact, a garrison city and was never located or designed to be a big seaport; nevertheless, until the Suez Canal was built and as long as ships trading between Europe and India went around the Cape of Good Hope, it was British India's prime port.

Most of the ships owned and registered at Calcutta were built either there or at Chittagong or in the Rangoon-Burma area, although a few were built at Bombay. The Calcutta coasting trade was primarily carrying rice to Madras, and this was a one-way trade, with the ships returning north in ballast and making as many round voyages per year as the monsoons and detentions in ports would permit. These ships were of about 400 tons and had to be beamy enough to stand up straight when light, to sail with but little ballast, and to be of light draft for going up and down the river. The Calcutta rice ships were not as heavily or as strongly built as the average Bombay vessel, but the work of actual construction was not skimmed, even when the ships, for competitive reasons, had to be built cheap. It has been said, "All Indian shipbuilding labor turned out good work, and their practices were invariably first class." The best Calcutta rice ships were modeled with a good deal of regard for speed, for half the time spent at sea as well as all the time in port was profitless. They also had to do much of their sailing against the monsoon, for in order to pay they had to operate all the year round.

The second important branch of the Calcutta trade was traffic with the East in which, gradually, the carrying of opium to China became predominant. Around the turn of the century, the Bengal-China trader of quality was of about 400 tons, pierced for about 18 or 20 guns, and armed and manned to take care of herself against pirates and protect herself from small units of the Dutch Navy when illegitimately trading for spices, etc., at the Moluccas. H. M. Elmore, as a result of his experience in this Indian China trade in the latter part of the eighteenth century, writes of how to deal with Malay pirates and implies that the Bengal-China trader was a flush-decked ship, with all her guns on the main deck under cover. From this, it would seem that when the Englishman Gabriel Snodgrass, as chief surveyor of shipping of the East India Company, advocated flush-decked Indiamen, he had in mind the virtues of the Indian-designed and built Bengal-China trader, and when he urged building ships in England of greater beam, he probably had the Calcutta-Madras country ships in mind. Snodgrass, during the years that he spent in India, became acquainted with Indian shipping as built and operated out of the Calcutta as well as the Bombay region, and he apparently learned much about ships from Indian builders. A smaller and fast type of Bengal ship of some two to three hundred tons or even less, originally built to trade between India and to, from, and among the islands of the Malay archipelago, was probably the prototype of the nineteenth century Indian China opium clipper. Illegitimate trade,

whether it was smuggling, opium-running, or slaving, required the same kind of ship, and the India-China opium trade called for a fast and handy type of relatively small but heavily armed and manned ship, with much the same general specifications as the privateer type of vessel. The risks in this trade were very great because of the illegitimate nature of the business combined with the dangers of operating with a valuable cargo in pirate-infested waters, but the profits were immense.

As the opium trade developed, Calcutta became the prime sales market and shipping port, and opium carriers, requiring speed for protection and guns to fight, became heavily armed small clippers. They carried big crews of fighting men, some of whom were Europeans and many Manilamen; but Indian native seamen, such as Lascars, had no place on an opium ship. The pioneer early opium clipper and the one that revolutionized the trade, changing it from one voyage per year with the favorable monsoon each way to two or three round voyages a year made without regard to season or the prevailing monsoon, was the Howrah-Calcutta-built, flush-decked, bark-rigged 254-ton *Red Rover*, launched in 1829, whose model was copied by her Indian builders from that of the United States privateer *Prince de Neufchatel*, which was famous in the War of 1812. At Calcutta and in other Bay of Bengal shipyards, opium clippers were built of teak that copied the good points of England's fastest sailing yachts, Mediterranean fruit clippers, and speedy sloops of war and dispatch boats, Baltimore-built slavers, privateers and illegitimate traders, and the world's fastest small and handy sailing vessels. These Indian builders were progressive, as were the more famous ones connected with the dockyard at Bombay.

An early East Indiaman was built at Rangoon, and some vessels of this type were built at Bombay. However, Britain as a nation was opposed to the development of shipbuilding in India except for Indian coastal trade and fought against building ships in India for British trade or any service on the Seven Seas either under the British flag or in competition in any form with British-built shipping. Among the big ships of the East India Company built in India for the service between Britain, India and China was the large, successful, and intensely popular *Earl of Balcarres* (1,417 tons), built in 1815 at Bombay. Another fine East Indiaman was the *Java*, built at Calcutta in 1813. This ship was built by an Indian of means and presented by the contractor and owner, when fully completed and ready for sea, to a British officer in grateful recognition of services rendered in rescuing and saving his daughter when she was captured by a lawless native tribe and taken into the jungle. This ship, built of "imperishable teak" with great skill, beautifully finished and equipped, equal to any Indiaman afloat, mounted 30 guns and proved very successful in steady service. When the East India Company sold its fleet of ships, the *Java* was bought by the discriminating, highly experienced, and competent British shipowner, Joseph Somes, of London, who operated her profitably for many years. This ship became a coal hulk at Gibraltar in 1865, when fifty-two years old, and in 1896, at the age of eighty-three years, was still in service.

Ninety years after building, the hull of the full-rigged ship *Edwin Fox*, built of teak at Sulkeali, Bengal, in 1853, was at Picton, New Zealand, with every prospect of being there and doing useful work for many long years to come. This ship is called "the last of the Indiamen," but she was sold on the stocks to a London shipowner, Sir George Hodgkinson. On her first voyage, the *Edwin Fox* took a cargo of tea from Ceylon to London and, upon arrival in England, was chartered by the government to be used as a transport in the war of the British and French against Russia. She first took part in the Baltic operations, carrying French troops from Calais to the Aland Islands to engage in the operations against the Russian fort of Bomarsund. She later proceeded to the Mediterranean with naval stores and was steadily employed as a transport between Mediterranean ports and the Crimea until after the fall of Sebastopol, when she returned to London and was sold by auction. Such well-known shipowners as Baines, Willis, and Dunbar took part in spirited bidding, the two latter men having had much experience with Indian-built ships. Dunbar bought the ship for a relatively high price, following which she made three voyages to India. In late

August 1858, the *Edwin Fox* sailed from Plymouth, England, for Australia with 280 male convicts on board, of whom the logbook remarked that they were mostly of a well-behaved superior class, being transported for "political crimes." The ship reached Fremantle on November 21, 1858, put the convicts ashore, and loaded hardwood for India.

In 1861 the *Edwin Fox* was chartered to carry troops from England to India. Upon the death of Duncan Dunbar in 1862, his fleet of ships was sold, and the *Edwin Fox* was acquired by Gellatly & Company, which continued her in the Indian run around the Cape of Good Hope until the Suez Canal was opened. On her last voyage in this service, she reached Madras on July 25, 1869, with a cargo of India pale ale and, after discharging part of it, sailed on August 10 for Masulipatam, but went ashore en route and "had to throw 446 hogsheads of beer overboard" to get her off the bottom. In the seventies, the *Edwin Fox*, built as an Indiaman with "bluff generous lines, quarter galleries, massive carving and deep single topsails," was in the Australasian trade, and in 1873 the teak-built "last of the Indiamen" was chartered for the New Zealand service. On her first passage to Lyttelton with emigrants, she put into Brest with a lawless and mutinous crew that had broken into the hold, made a raid on the spirits, and become fighting drunk during a sou'west gale, leaving the officers and emigrant passengers to man the ship as best they could; upon arrival at Brest, the crew was arrested and sent to England, where the men received sentences of hard labor. On her next outward passage to New Zealand, she collided, while anchoring, with the schooner *Westward Ho*, amidst crowded shipping at the Downs, during a strong westerly gale. The schooner was sunk, but all her crew saved, and the *Edwin Fox*, with her headgear carried away and anchor lost, drifted ashore. After being refloated, she was towed to London for a survey and repairs, where it was found, after examination in dry dock, that her hull was "as sound as a bell."

In 1878 the *Edwin Fox* was converted into a bark and continued to ply in the New Zealand trade until 1885, when the possibilities of the frozen meat trade were beginning to be realized, and the old Indiaman was selected to play an important part in the new industry. She was equipped with refrigerating machinery and, following her arrival at Port Chalmers, was moored alongside the abattoir and used as a freezing plant and storage ship. When, later, refrigerating works were built ashore at Port Chalmers, the *Edwin Fox* moved to Lyttelton, Gisborne, and the Bluff in turn for duty as a freezing ship; but by 1900 the construction of shore refrigerating plants at all desired points made the freezing ship obsolete. Her refrigerating machinery was removed, and the Indiaman, when forty-seven years of age, became a coal barge, or storage hulk. At the time of the commencement of World War II, Michael Rome wrote from Picton, New Zealand:

Battered and scarred though she is, the *Edwin Fox* still has a certain dignity about her. The great stern windows, the gilded scrollwork on her transom, the carved beams in her cabin speak of the eighteenth century. Though a great gap is cut in one side for trucks to enter, and though she is made fast to the fore-shore with steel hawsers, so well is her mastless hull preserved that it is easy to imagine her hove-to off the Sandheads while the pilot came alongside from the brig, or running down her easting with her lower deck full of emigrants.

The present owners of the *Edwin Fox* are fully conscious of her interest as a relic of New Zealand's history. Her hull is still perfectly sound and as she is in the position of being a hulk for a shore concern and is thus unaffected by the decline of coal fired shipping, there seems no reason why her name should not remain in the MERCANTILE NAVY LIST along with the *Queen Mary* and other fine ships, to fly the Red Ensign for many a year to come.

Whereas the *Edwin Fox* is described as "the last of the Indiamen," which refers to merchant sail, there are much older Indian teak-built hulls still in practical use. When Lord Melville was at the British Admiralty during the Napoleonic Wars, he had several men-of-war built in India, and two of the teakwood vessels then constructed to his order are still in existence. The H.M.S. *Trincomalee*, a 46-gun frigate built at Bombay in 1817, it would appear, was still afloat in Portsmouth Harbor during World War II as the *Foudroyant*, and the 74-gun Bombay-built ship-of-the-line H.M.S. *Cornwallis*, constructed of teak in 1813,

was some 130 years later (and presumably still is at the close of the war in 1945) part of a jetty at Sheerness.

Some Blackwall frigates, after the commercial monopoly of the British East India Company ceased, were built for British owners at Moulmein, across the Gulf of Martaban opposite Rangoon, Burma, and as long as wood ships were built during the era of merchant sail, the best ones constructed in the British Empire were laid down in India. Teak finally proved, with the years, its superiority to the much-vaunted English oak, and it was used for planking Britain's finest composite-built clippers (constructed for the China and Australia trades) before Britain finally deserted wood as a shipbuilding material and turned entirely to iron.

The barkentine *Success* of 622 net tons, built of Indian teak at Moulmein in 1840, operated in the passenger trade between Britain and the East Indies. In 1849 she carried emigrants to Australia, and in 1853, while out in Australia, her entire crew deserted and went off to the gold diggings. Later, she became a convict ship, a reformatory ship for boys, and a store ship for explosives. In 1892, while preparing for a voyage to England, the vessel was scuttled at her moorings, was raised some months later, and made a successful passage to London. In 1912, after many years as a showboat on the Thames, the *Success* crossed the Atlantic against the westerlies to New York. In 1917 the vessel was fitted with Diesel engines for river trade and was later damaged by an ice floe on the Ohio, but was repaired. In 1933 she was exhibited at the Chicago World's Fair as an Australian convict ship. It was reported in 1936 that the *Success*, then ninety-six years old, was "on her way back to Australia to be used for show purposes."

When Indian shipbuilders had proved that they could build the European type of ship with material (teak) and construction practices superior to those used by any European builder, Indian builders were anxious to construct and Indian shipowners and merchants were eager to use these Indian-built ships for trading with Britain and other European countries and on the deep-sea trade routes of the world. But that was what Britain was determined should not happen, and it discouraged the building and use of Indian ships much as it had that of American colonial ships unless they were controlled in building and service and operated in the interest of Britannia, the Mistress of the Seas. In the last decade of the eighteenth century, Calcutta merchants were elated when partial concessions to Indian shipping interests were made, several of the largest East Indiamen were taken into the British Navy in 1795, and the first importation of rice from India was sanctioned. But this letting down of the bars was only a selfish British scheme to cope with an emergency. As Parkinson says, although "twenty-seven Indian-built ships were taken up by the [British-dominated] Indian governments and dispatched to England, not only with rice, but also with other goods on account of the merchants in India" and although they were permitted to take back to India return cargoes of British goods, yet "with the passing of the crisis, these ships went out of the service again, to the extreme annoyance [and embarrassment] of their owners." These Indian (or "country-built") ships were engaged at a price of £16 per ton for rice and other "deadweight goods" and £20 per ton for "light goods" to "arrive and discharge in the Thames." As a result, British merchants enjoyed a saving in freight reported as £183,316, and they urged that the Indian ships be continued in the trade. Moreover, several of the vessels that sailed to England with much needed cargoes in 1795 had been built quickly but well and at additional expense by their Indian owners peculiarly for trading with Britain, and they had felt sure that such good, eminently suitable, and economic ships would be either taken into the East India Company's regular service or at least given permanent employment. The monopoly, however, ruled otherwise and was, at the time, strong enough to have its way. Lord Mornington was appointed governor-general and reached India in 1798, and the following year he was so impressed with the unfair treatment that Indian shipping was being subjected to that he licensed some ships to engage in the British trade and granted additional similar permits in 1800.

The East India Company opposed the use of Indian country ships, which were privately owned, in a trade in which it held a monopoly; but the monopoly was far from being a real

one, and whatever the British Government desired to be done as far as Indian shipping and trade were concerned, it could quickly see done. The H.E.I.C. said that Indian-built and owned ships could not possibly compete successfully with the company's ships. Why then did the company become so excited about the admission of such ships to British trade? If its declarations were true, the law of "the survival of the fittest" would soon have discouraged the Indians from embarking in the trade and losing money. But the Indians had learned much from the Americans. When Britain, in 1794, granted permission to American ships to trade with India upon the payment of duties and take cargoes out of India provided they were exports to the United States and not to Europe, Calcutta merchants were amazed to see how the Yankee shipmasters defied British tradition in the operation of their ships, drove them both at sea and during the discharging and loading periods of detention in ports, got all the mileage possible out of their ships per annum, and, therefore, showed a surprisingly low cost in the transport of cargo per ton per mile and per ton per annum.

Calcutta merchants were observing, shrewd, and keen, and at the turn of the century, when they sent their country ships to London with cargoes, their commanders had orders to sail without regard to prevailing monsoons or established East India Company (and generally adopted British) schedules and to turn around in port as rapidly as discharging and reloading, with the proper conditioning of the ships, would permit. The East India Company, after saying that Indian country ships could not possibly compete with the company's ships, "changed its tune" and became seriously alarmed when it saw that these Indian-built and Indian-owned ships ("free ships" owned by private capital) were faster vessels and far more economically and courageously operated with European officers than its own. In October 1802, it was said:

The private [Indian-built] ships, which, according to the arrangement recently made, are permitted to freight from India, return thither with an European consignment at all periods of the year. . . . Within the last three months, six ships of the above description have sailed from Bengal, and not one of the East India Company, which are engaged

this season, is yet afloat. [This does not mean launched or in the water, as it reads literally, but the H.E.I.C. term "afloat" refers to a ship's having been discharged of all cargo, reconditioned, made ready and placed in a dock at a pier or at anchor to receive cargo and stores for another voyage.]

It was asked by British marine authorities, "How could British seamen hope to compete with Yankee seamen and with Indian ships which were following their unorthodox practices?" Yet the Indian-built and Indian-owned ships, although they had Lascar crews, were officered by Britishers and had enough European junior or warrant officers aboard to see that the orders of captains (and owners) were carried out and to afford security in the use of armament in case it was necessary to fight a defensive action. Bombay ships as well as Calcutta ships of the Indian "country" fleet were operated to startle the complacent British. The *Scaleby Castle* of 1,250 tons, built at Bombay and carrying 16 guns, all European officers, and 115 Indians as a crew, proved to be fast and a fine sea boat in the Indian-British trade. The *Anna* of 899 tons, built at Bombay in 1790 for the same owners, under the command of the British skipper Capt. James Horsburgh, is credited with leaving the Lizard April 20, 1802, anchoring at Bombay July 31 after a passage, light to port, of 102 days, and sailing again on August 25 after only twenty-five days of port detention, during which time 900 tons of European cargo were discharged and the ship reloaded with cotton. This reported detention time in port of an Indian ship, with British officers and an Indian crew, compares favorably with the twenty to twenty-five days of detention in port reported for several American ships in 1799 at the same port, which, however, was a foreign port to the Americans and the home port of the Indians. Later, the shipbuilders in the port of London presented a memorial to the Board of Trade "on the ruinous consequences which will result from the employment of Indian-built ships in the service of the East India Company," etc., etc.; this is reminiscent of the London shipwrights who petitioned Parliament to protect their industry from American colonials by denying to them the privilege of building ships capable of navigating in deep-sea trade.

England exercised a tremendous influence on the world's shipping through its virtual control of marine insurance rates, and the insurance companies very definitely discriminated against Indian-built ships. In 1809 the insurance on an English-built East Indiaman between India and England was £7-7s for the ship and £7 on her cargo. The rates asked for Indian-built ships between the same ports were so prohibitive that the owners refused to accept them and preferred to assume their own risks, but they were obliged to insure the cargo and had to pay £15-15s, or two and a quarter times as much as an East Indiaman paid. When British Lloyd's was formed, Sir Robert Wigram, half-owner of the Blackwall shipyard, became a prominent member, and such influence did not operate to encourage the building of ships for British trade outside of Britain.

Unfortunately, the Indian merchants, in seeking reforms in British trade, were as selfish as the Court of Directors of the East India Company, and they sought not freedom of trade but a lowering of bars for their exclusive benefit. The lack of breadth and a sense of proportion on the part of avaricious Indian merchants, who sought to break the monopoly of the East India Company for their peculiar and selfish advantage, but demanded free trade only for themselves (with a still more drastic exclusion of other British shippers outside of the H.E.I.C.), does not, however, in any way affect the question of the quality of Indian-built ships, even though it does reflect upon the intelligence, good sense, and fairness of the native Indian shipping interests.

During the eighteenth century, it has been said, "German [Hanoverian] materialism ran far and wide through 'happy England,' patriotism became tainted with self-interest, and men in state employ thought firstly of their own pockets and secondly of their country's welfare." The administration of the navy "was eaten through and through from top to bottom with jobbery and speculation, and naturally the service suffered." Stringent rules and regulations operated to discourage initiative and honest enterprise, lessen efficiency, and suppress natural genius. British warships became mediocre in design and badly managed when at sea. The East India Company, however, strove hard to maintain a high standard in its ships—but without regard to cost. It has been described as "probably the most liberal, generous and public-spirited concern that ever held a trading charter"; again it has been authoritatively said, "No commercial concern ever treated its employees so handsomely as the Hon. East India Company did its commanders and officers." The company was always willing to spend a part of its income in obtaining expensive ships, maintaining them in high-class condition, and operating them in a somewhat lavish manner. It spread part of the revenue among the officers and men who operated them. To be employed in what was termed the British "merchant service" was to be on the pay roll of the East India Company, and this service, as far as prestige and social standing were concerned, was considered equal to the naval service and much more remunerative and satisfactory. Men operating British commercial ships in ordinary trade on the Seven Seas were looked down upon; they were simply not in the exclusive and honored "merchant service." The East India Company—outside of one bad period in 1772—was constantly helping the British Admiralty with both money and ships. In 1779, we are told, the company offered a bounty for the raising of 6,000 seamen and, not content with this, built three 74's, the *Ganges*, *Carnatic* and *Bombay Castle*, at its own expense. In 1793 three East Indiamen, the *Triton*, *Royal Charlotte*, and *Warley*, assisted by one lone frigate of the Royal Navy, took Pondicherry from the French. In 1795, a black and critical year for the British nation, France had made peace with Prussia, reduced Holland to submission, and by treaty had had a fleet of 120 well-built and manned Dutch ships placed at its disposal. But the East India Company proved its importance to the British nation. A fleet of East Indiamen arrived at Cape Town with a heavy reinforcement of British troops just in the "nick of time" to make South Africa British, and the *Bombay Castle*, *Exeter*, and *Brunswick*—which were heavily armed merchantmen of the East India Company's fleet—were prominent units of the fighting British fleet in the Cape of Good Hope campaign. Six of the finest East Indiamen afloat and eight building were

assigned to the government for reconversion into ships of war, and the Court of Directors, at the company's own cost, raised 3,000 men for the Royal Navy. Fourteen East Indiamen were turned over to the government for use as troop transports, and this was the year that Indian shipbuilders and merchants rose to the occasion and, independent of the East Indian monopoly, transported rice to Britain in twenty-seven Indian-built ships to supply food, the great need of which was brought about by the war and a scarcity of corn.

The year 1795 and a succeeding period were particularly bad for merchantmen in Indian waters because of the activities therein of both French and Dutch warships and privateers. Along the Malabar coast, pirates had fastnesses, with strongholds protected by forts, and these men evidently feared nothing and not only defeated English, French, and Dutch men-of-war sent out especially to punish and exterminate them but also, at times, even captured these ships of war. A 40-gun French frigate and three Dutch warships struck their colors to these lawless buccaneers, who also captured a British East Indiaman, armed with 20 guns, after a hard fight. Mistaking H.M.S. *Centurion*, a 50-gun frigate, for an East Indiaman, the Malabar pirates stole up on her under cover of darkness, when she was becalmed, and wedged her rudder so that the ship could not maneuver (a favorite trick of these buccaneers). The big armament and man-power on the *Centurion* drove off the pirates when they attempted to board her, and they were soon put to flight. During this critical period in the latter part of the 1790's, a notorious privateer, the *Malartic*, captured the East Indiamen *Raymond* (793 tons), *Woodcot* (802 tons), and *Princess Royal* (805 tons) and other company ships, but was eventually taken by the East Indiaman *Phoenix* (Captain Moffat). Another extremely fast and dreaded French privateer operating in Indian waters was *La Confiante* (Captain Sourcouff), armed with 22 guns and a big fighting crew. *La Confiante* attacked the British East Indiaman *Kent* and, during a heavy engagement, killed or wounded sixty of the merchantman's crew and made her strike her colors; but two of the company's frigates, sent in pursuit of the privateer and her prize, caught up with them, recaptured the *Kent*, and inflicted severe punishment on *La Confiante*. However, she escaped because of her great speed—only to be captured a few years later. It was said that, within the space of a single year, French men-of-war and privateers captured two million pounds worth of British shipping. French privateers were particularly troublesome to British merchant ships, for they were generally fast, well-armed and manned, with officers and men who were reckless and bold. These privateers, for a time, almost dominated the Indian Ocean and particularly the Bay of Bengal, but the experience of the East Indiaman *Lord Eldon* shows that they were active in the English Channel. This ship, outward bound to India and well armed, was lying off the Needles hove to, awaiting some passengers to board her, when she was rather suddenly enveloped in a fog. But an audacious French privateer had seen the ship and, under cover of the fog, came up alongside. The members of the crew of the Indiaman, imagining that the armed visitor was a King's ship about to impress some of them into the navy, "went to cover," so the privateer's men had no difficulty in boarding the vessel. The captain was below at the time, but, hearing noises, he came on deck to find his ship practically in the hands of the enemy. He was undaunted and quick-thinking, and he gave his well-drilled crew orders to repel boarders. When his men sensed the situation, they came out of hiding and acted with courage and vigor, driving the invaders overboard after a sharp fight.

Another evil that grew up under the management of the English East India Company became known as "Hereditary Bottoms." Whenever one of the ships employed by the company became "worn out" or was deemed by the company's surveyors to be no longer entirely suitable for the East Indian service, she was condemned for the company's trade, even though she may have been suitable for many long years' operation at sea under other flags and in much too good physical condition to send to the shipbreakers; or if a hired ship was lost (captured, wrecked, or simply "went missing") and another ship had to be hired to replace her, the member or members of the ring of "insiders," known as the Marine Interest, who

had built the condemned or lost ship claimed the right of supplying a vessel to replace her or of "building a new ship on the bottom of the old." This principle of "Hereditary Bottoms" continued in effect until 1796, when influential stockholders of the company, working through the more public-spirited directors, caused the evil to be abandoned.

In the fifties and sixties of the eighteenth century, the low moral tone and materialism running rampant in Britain must have seriously affected the operations of the East India Company, and it became apparent that the company's servants and associates were making handsome profits when the company's profits were on the decline. Instead of being able to pay the government a stipulated substantial sum, in 1772 the company shocked Parliament by asking for a loan of a million pounds, and this request caused a committee of Parliament to investigate the affairs of the company, expose existent evils, and bring it under the control of the Crown. In the year 1772, the East India Company was employing abroad fifty-five ships aggregating 39,836 tons. At home, it held and there were being built for its service some thirty ships totaling 22,000 tons. At this time, the company was paying £32 a ton for the carriage of fine goods, and an expert witness at the parliamentary hearing offered to bring goods from any part of the East to England for £21 a ton. In 1773 a by-law put a stop to the company's contracting for ships for a period of more than four voyages at an agreed-upon fixed price per ton. In 1780-1781, the East India Company and the Marine Interest, or owners of its ships (each a monopoly), "locked horns" over the rental prices to be paid by the operating company for the ships. The hostilities with the Dutch had caused insurance rates to increase, and the owners demanded a liberal advance in rental to reimburse them and guarantee them against loss. In 1783 the Court of Directors of the company set the "rate of freight at £32 per ton for a ship of 750 tons." The owners, as a unit, demanded £35. As the company required 10,000 tons of shipping and as advertising for tenders brought no bids from owners of British-built and owned ships that the surveyors would pass as fit for the service, a compromise was reached, and the owners received £33 per ton for their vessels.

As a result of the investigation and the criticism arising therefrom, the company decided to build for its own use a number of bigger ships. In 1784 the number of the company's ships at home and abroad was stated at sixty-six. In 1785, Anthony Brough, an outsider, offered to build eighty ships for the East India Company service at from £22 to £24 per ton according to destination; his offer was declined, but it evidently had the effect of "shaking down" the exclusive inner circle of shipowners and the East Indian Marine Interest. In 1786 the company's shipowners made tenders of from £26 to £29 a ton, varying for the various China and India trades, and an outside tender was offered to build a 1,000-ton ship at £22 a ton for the first two voyages and £20 a ton for each of the third and fourth voyages. About this time, the Court of Directors accepted a few tenders from outside the heretofore exclusive ring, or union, of owners. However, the influence of the middlemen with the Thames builders and their exercise of it made some of the contractors unable to fill their contracts; while others were compelled to go elsewhere to find a shipyard to construct for them and, it was said, had a lower quality of ship built than would have been produced at any one of the several London yards experienced in the building of East Indiamen. Agitation and attacks for conspiracy caused a scandal, but the ruling court of the East India Company influenced the Court of Directors to support the shipping interest, or managing owners, which it did by a vote of some four to one; so attempts at economic reform in the interest of shareholders and the general public were once more killed.

In 1789 the company's recent big ships had been of about 800 tons, but in that year it was decided to construct some much larger ships, and the famous so-called 1,200-ton East Indiamen were ordered and in due course appeared on the scene. In 1793, records show, the company had some thirty-six ships of 1,200 tons and about forty ships of 800 tons each, and it was said that "this represented the whole of the British shipping trading to the East." In October 1793, the Court of Directors of the company stated that the annual imports

from India in its regular commerce required sixteen ships of some 700-800 tons and one ship of 1,200 tons; that imports from China required fifteen "large ships of 1,200 tons." It would seem that at this time the company was willing to receive tenders specifying "the rate of freight to be paid for six voyages," but it was said that if a ship replaced one condemned, captured, or lost, the new vessel should "be commanded by the captain of the ship whose bottom was worn out." In December 1794, we read, the company decided that ships of 1,400 tons were the most suitable for its China trade, but that "these ships should be tendered at only 1,200 tons." The Indian ships trading with rich cargoes and passengers to England from Bengal and Madras "were not to exceed 820 tons and to be chartered at 799 tons." The smaller ships in the Indian trade, carrying raw materials such as cotton, rice, sugar, pepper, saltpeter, and hemp to England, it was asserted, should be from 480 to 520 tons, as such ships had been found to be the most satisfactory for the carrying of such "gruff goods."

E. Keble Chatterton, the British marine historical writer, says in *THE OLD EAST INDIAMEN*:

During the early part of the eighteenth century, about a dozen or fifteen of the company's ships would sail to the East Indies from London, but this average gradually rose till about the year 1779 there were twenty vessels going out each year. But thereafter the numbers increased to such an extent that

in some years there were as many as thirty or forty, and in the year 1795 as many as seventy-six did the voyage. After that date the number became again normal, so that up to about the end of 1810 the average was more like forty or fifty.

Chatterton also writes:

The standardisation of East Indiamen is well shown by examining the lists and dimensions. Thus, at the close of the eighteenth century I find no fewer than fifteen of them all 144 ft. in length, and either 43 ft. or 43 ft. 6 in. in beam. The big-

gest ships then measured 149 ft. long, 43 ft. 6 in. beam, 1,502 burthen tonnage, 1,200 chartered tonnage. The smallest vessel in the list was the *Princess Mary*, of 643 burthen tons.

The list of ships referred to by Chatterton, with dimensions and tonnage copied from official records and set forth by him in *THE OLD EAST INDIAMEN*, is presented herewith in a slightly modified form:

| Name of Ship | Dimensions in Feet | | Tonnage | | Name of Ship | Dimensions in Feet | | Tonnage | |
|---------------|-----------------------|------|---------|-----------|---------------------------------|-----------------------|------|---------|-----------|
| | Length | Beam | Burthen | Chartered | | Length | Beam | Burthen | Chartered |
| GANGES | 149 | 43.5 | 1,502 | 1,200 | DAVID SCOTT | 134 | 42 | 1,257 | 1,200 |
| HOPE | 144 | 43.5 | 1,471 | 1,200 | ALNWICK | | | | |
| NEPTUNE | 144 | 43.5 | 1,468 | 1,200 | CASTLE | 134 | 42 | 1,257 | 1,200 |
| HINDOSTAN | 144 | 43.5 | 1,463 | 1,248 | ALFRED | 134 | 41 | 1,221 | 1,189 |
| WALMER | | | | | DORSET- | | | | |
| CASTLE | 144 | 43.5 | 1,460 | 1,200 | SHIRE | 134 | 42 | 1,200 | 1,200 |
| WARLEY | 144 | 43.5 | 1,460 | 1,200 | CARNATIC | 132 | 40.5 | 1,169 | 1,169 |
| EARL OF ABER- | | | | | NOTTINGHAM | 130 | 40 | 1,152 | 1,152 |
| GAVENNY | 144 | 43.5 | 1,460 | 1,200 | BODDAM | 128 | 38.5 | 1,021 | 1,021 |
| ROYAL | | | | | BELVIDERE | 123 | 38.7 | 986 | 987 |
| CHARLOTTE | 144 | 43.5 | 1,460 | 758? | ALBION | 125 | 38 | 961 | 961 |
| COUTTS | 144 | 43.5 | 1,451 | 1,200 | ROYAL | | | | |
| CIRENCESTER | 144 | 43 | 1,439 | 1,200 | ADMIRAL | 120.2 | 37.8 | 914 | 914 |
| ARNISTON | 144 | 43 | 1,433 | 1,200 | EARL HOWE | 117.8 | 37.4 | 876 | 876 |
| GLATTON | 144 | 43 | 1,432 | 1,200 | SULIVAN | 116 | 35 | 876 | 876 |
| THAMES | 144 | 43 | 1,432 | 1,200 | MIDDLESEX | 116 | 35 | 852 | 852 |
| CERES | 144 | 43 | 1,430 | 1,200 | EARL OF | | | | |
| CUFFNELLS | 144 | 43 | 1,429 | 1,200 | WYCOMBE | 101.9 | 34.5 | 643 | 655? |
| EARL TALBOT | 144 | 43 | 1,428 | 1,200 | PRINCESS | | | | |
| EXETER | 132 | 41 | 1,265 | 1,200 | MARY | 94 | 34.5 | 643 | 462? |
| | | | | | PRINCESS | | | | |
| | | | | | CHARLOTTE | 102 | 33.6 | 610 | 610 |
| | | | | | Total of 33 East Indiamen . . . | | | 40,121 | 34,650 |

An examination of this record of East Indiamen's dimensions and tonnage indicates that ships of 1,200 tons burthen or less had, with two unaccountable exceptions, a chartered tonnage the same as the burthen tonnage; but with the exception of the *Hindostan*, *Royal Charlotte*, and *Alfred*, all the twenty ships with burthen tonnage stated as over 1,200 tons (i.e., from 1,221 tons to 1,502 tons) were given a uniform chartered tonnage of 1,200 tons. Why the *Hindostan* and *Royal Charlotte*, built with the same dimensions and of 1,463 and 1,460 tons burthen, respectively, should have a chartered tonnage different from the standard of 1,200 is unexplained, and possibly an error crept into the records; for the available statistics show the *Hindostan* at 1,248 tons and the *Royal Charlotte* at the ridiculously low figure of 758 tons. The burthen and chartered tonnages of the two small East Indiamen *Earl of Wycombe* and *Princess Mary* are inconsistent and demand an explanation, which at this time is not forthcoming. Historical records of the tonnage of East Indiamen are most confusing, for in 1813 the *Royal Charlotte* is reported as twenty-eight years old, built in 1785, and of 1,518 registered tons (her length is also stated as 194 ft., with the same beam of 43 ft. 6 in. as earlier records show). At this same time, the following big ships were in the service, but whether they were the identical vessels flying the East India colors at the close of the eighteenth century or newer ships perpetuating the names is uncertain: *Walmer Castle* (1,518 tons), *Glatton* (1,507 tons), *Cirencester* (1,504 tons), *Couitts* (1,504 tons), *Arniston* (1,498 tons), *Hope* (1,498 tons), *Cuffnells* (1,497 tons), *Neptune* (1,497 tons), and *Thames* (1,497 tons).

It would seem that the stated length of East Indiamen was the length of keel, for the *Hope*, built in 1797, according to statistics, was of 1,498 tons and mounted 34 guns and, whereas 144 ft. length of keel and 43 ft. 6 in. beam, had a length between perpendiculars of 194 ft. The *Cumberland*, built in 1802, was of 1,352 tons, carried 36 guns, and was of 42 ft. 8 in. beam, 144 ft. length of keel, and 184 ft. length between perpendiculars. While the length of keel was generally stated for both East Indiamen and warships, the naval vessels often recorded the length on the gun deck, and East Indiamen occasionally mentioned the length between perpendiculars, which resulted in some confusion in comparing dimensions. Whereas ordinary British merchant sail criticized East Indiamen as being "senselessly beamy" and built with "clumsy and expensive dimensions," yet it is interesting to note that the British Admiralty was apt to condemn the proportions of East Indiamen, claiming that they were too narrow for ships of war. The 74-gun ships of the line of the British Navy, the *Culloden* and *Powerful*, built in 1783, measured 138½ ft. length of keel and were some 47½ ft. beam, of about 1,630 tons, and about 169 ft. long on the gun deck. These ships had a length of keel only 2.9 times the beam; whereas the keel of the East Indiaman *Hope* was 3.3 times her beam, and the length between perpendiculars was over 4.5 times the beam. The length on the gun deck on the 74-gun battleships was somewhat over 3.5 times the dimension of the beam. The smaller 64-gun ships of the line of the British Navy were built more on the lines of big frigates, and H.M.S. *Belliqueux* (1,376 tons), built in 1780, had a ratio of length of keel to beam of 3 to 1 (length between perpendiculars to beam of 3.6 to 1); whereas H.M.S. *Lancaster* (1,416 tons) of the same power, built in 1796, had corresponding ratios of length to beam of 3.3 to 1 and 4 to 1, respectively, as the later ship reflected the influence of the French and a desire of the British to build faster ships of war. The East Indiaman *David Scott*, a nominal 1,200-ton ship of 1,257 tons burthen, built in 1804, while 134 ft. long on the keel, 42 ft. beam, and with a ratio of length to beam of 3.2 to 1, was 165½ ft. long between perpendiculars (a ratio of a scant 4 to 1); so at the turn of the century it would seem that East Indiamen and 64-gun warships of the Royal Navy were not much different in proportions, although both types were relatively very much beamier than the usual large size British merchantman, including the West Indian and Atlantic traders. The average dimensions and proportions of the various sizes of East Indiamen at the turn of the century and during the Napoleonic Wars have been stated as follows:

| Tonnage | Length | | | Tonnage | Length | | |
|---------|----------------|-------------|-------------|---------|----------------|-------------|-------------|
| | Perpendiculars | Keel | Beam | | Perpendiculars | Keel | Beam |
| | <i>Feet</i> | <i>Feet</i> | <i>Feet</i> | | <i>Feet</i> | <i>Feet</i> | <i>Feet</i> |
| 1,200 | 165 | 134 | 42 | 600 | 125 | 100 | 34 |
| 800 | 150 | 116 | 35 | 500 | 130 | 102 | 31 |

Basil Lubbock, in *THE BLACKWALL FRIGATES*, reproduces the drawings of three East India ships. The largest is a vessel, evidently built in the early nineteenth century, that is of 1,257 $\frac{1}{3}$ tons and has a greater ratio of length to beam than ships mentioned by Chatterton, as the lines show a vessel of 165 ft. 7 $\frac{1}{2}$ in. long between perpendiculars and an extreme beam of 42 ft. Two earlier eighteenth century ships of smaller size were of 818 tons and 544 $\frac{2}{3}$ tons, respectively; the former was 146 ft. long and 36 ft. beam and the latter, 125 ft. long and 32 ft. beam. All these ships had extremely full, rounded lines forward, both above and below water; they were deep and high-sided, with a short forecastle and a longer poop, which embraced the mizzenmast, and had an impressive gallery on the stern.

The cost of building East Indiamen increased fairly steadily during the war with France. The firms that built the company's ships also contracted to build for the navy whenever the opportunity was given them. Their doing so was a check on the building of other vessels, a check one result of which was to prolong the "life" of the existing Indiamen. The maximum of six voyages was increased to eight at the government's instigation in 1803 and increased again indefinitely in 1810. The Peace of Amiens in 1801 curtailed naval shipbuilding, and eight East Indiamen were built in that year and sixteen in 1802. The Addington administration opposed building warships by contract, but in 1804 John Perry and Robert Wigram, the Blackwall shipbuilders, supported Pitt, the Addington government was overthrown, Wigram obtained his baronetcy, and more warships were built by contract for the navy. It was said that ships for the navy were more profitable to build than East Indiamen; hence the eagerness of private yards to build war vessels for the government. The price of the warships at this time was from £25 to £31 a ton, but it is evident that such tonnage was somewhat more expensive to build than merchantmen. Whereas six East Indiamen were built in 1804, two in 1805, and only one in 1806, none was launched in 1807 and few before 1811. Two East Indiamen were built in India in 1801, and we are told that during the period 1794-1813, ninety-eight East Indiamen were launched into the Thames River, including nearly all the big ships of the 1,200-ton classes that were laid down in some half dozen leading shipyards. The rates per ton for building 800-ton East Indiamen on the Thames are given by Parkinson for each of several years during the twenty-one-year period 1781-1801 inclusive as follows:

| Year | Rate per Ton | Year | Rate per Ton | Year | Rate per Ton |
|------|--------------|------|--------------|------|--------------|
| | £ s d | | £ s d | | £ s d |
| 1781 | 14-14-0 | 1793 | 14- 0-0 | 1799 | 15-15-0 |
| 1784 | 12-12-0 | 1795 | 16-13-0 | 1800 | 19-10-0 |
| 1792 | 12-10-0 | 1798 | 17-10-0 | 1801 | 21-15-6 |

On March 6, 1801, Robert Wigram, of London, contracted with Thomas Haw, ship-builder of Stockton, Durham, to build him a small East Indiaman of 517 tons (length 102 $\frac{1}{2}$ ft. on the keel, beam 31 ft.) for £14 per ton, or £7,238. Wigram had to pay for the ship in installments, and he put up £5,400 before the vessel was launched. The time of building occupied fifteen months. As the price paid did not cover the cost of equipment, it is said that the building of this ship, named the *Tottenham*, did not in the ultimate save Wigram much, if any, money when she was ready for sea, and it is doubtful as to whether he got as good a ship as could have been built in one of the big yards on the Thames.

The following comparative figures give the reported cost of "building, equipping, storing and provisioning an East Indiaman for fourteen months" during the years 1802 and 1803 for each of the two principal classes of Indiamen—the armed ship of 1,200 tons chartered tonnage carrying a crew of 130 men and the ship of 800 tons with a complement of 110 men.

| Year | 1,200-Ton Ship | | 800-Ton Ship | |
|---|----------------|----------------|----------------|----------------|
| | 1802 | 1803 | 1802 | 1803 |
| Hull | £25,600 | £27,600 | £16,267 | £17,600 |
| Copper | 3,105 | 3,262 | 2,570 | 2,699 |
| Masts, yards, and spares..... | 2,838 | 2,725 | 1,907 | 1,910 |
| Cordage, rigging, and cables (including boarding nettings). | 3,160 | 3,970 | 2,380 | 2,987 |
| Sails (two complete suits and spares)..... | 1,834 | 1,943 | 1,544 | 1,634 |
| Total, including equipment, supplies, stores, provisions, etc. | £47,673 | £51,621 | £33,445 | £36,378 |

In 1805 a 1,200-ton East Indiaman cost £67,347 to build and equip for her first voyage; in 1807, £61,859; in 1808, £64,580; and in 1809, £64,133. An 800-ton ship cost £47,396 in 1805 for her first voyage, and in 1809 the corresponding cost was estimated at £45,826. A different estimate of cost of a 1,200-ton East Indiaman built in 1809 is set forth by Parkinson in much detail and shows a total cost, building and first voyage, of £63,068, of which the cost of ship's hull is set forth as £34,400 as against £33,000 in 1807. Other items of construction and equipment expense in this 1809 estimate were:

| Item | Cost | Item | Cost | Item | Cost |
|-------------|--------|-------------|------|------------------|------|
| Cordage | £5,194 | Guns | £990 | Smith | £335 |
| Sheathing | 4,459 | Anchors | 798 | Gunsmith | 293 |
| Masts, etc. | 3,000 | Blockmaker | 531 | Boat-builder | 206 |
| Sails | 2,200 | Gunpowder | 515 | Rigger | 135 |
| Ballast | 1,092 | Water-casks | 472 | Carpenter stores | 129 |

The meats, bread, and foods put aboard totaled £3,505; the distiller (rum) and brewers' bills were estimated at £405; the pilot, £300; captain's sundry disbursements, £285; firehearth and firewood, £364; oilman, £109; launching and survey dinners, £70; and interest on money paid to builder in several installments, £1,282.

Parkinson also records the estimates of the expense of building and fitting out new East Indiamen of 1,200 tons (130 men), 800 tons (110 men), and 550 tons (50 men) in the spring of 1804 for each of six voyages at the prices then in effect, as follows:

| Tonnage of Ship | Number of East Indian Voyage | | | | | |
|-----------------|------------------------------|---------|---------|---------|---------|---------|
| | First | Second | Third | Fourth | Fifth | Sixth |
| 1,200 | £50,810 | £12,498 | £13,928 | £24,465 | £14,008 | £15,590 |
| 800 | 36,520 | 10,785 | 12,053 | 17,975 | 10,619 | 13,246 |
| 550 | 23,552 | 5,464 | 6,058 | 10,553 | 5,384 | 5,629 |

It was the custom to recondition the ships thoroughly before the commencement of the fourth voyage, and after 1806 it became the practice to make still more extensive repairs after the sixth voyage; the copper and sheathing were stripped off, much of the outside was "doubled" with three-inch oak plank, and the ship was structurally strengthened, etc.

The number of ships in the East India Company's India and China service during the years 1803-1808 inclusive varied from forty-four to fifty-three and the total "burthen tonnage" from 36,671 to 45,342 tons.

At times, the East India Company suffered heavily by the loss of its ships, and the severe weather conditions of 1808-1809 caused many disasters. The *Britannia* (1,200 tons)

went down off South Foreland on January 25, 1809, and on the same day the *Admiral Gardner* foundered nearby. The *Calcutta* parted company with other East Indiamen off Mauritius on March 14, 1809, and "went missing," and the *True Briton* (1,198 tons), which parted company with the Bombay ships on October 13 while sailing in the China Seas, disappeared. However, it has been said that whereas some East Indiamen were victims of the sea, others were captured by the enemy, some were wrecked by running ashore, and others were blown up or were burned, as a rule the East Indiamen managed to make their passages and carry their passengers and freight safely to their scheduled destinations. The East Indiamen were generally able to defend themselves from pirates or in time of war when no British naval force could be spared to convoy them. In 1800 two East India merchantmen engaged in the China trade captured a large well-armed French frigate. On occasions, East Indiamen beat off strong enemy naval forces. One of the most famous instances of this kind is that of the East India ship *Earl Camden* of 1,200 tons, under command of Capt. Nathaniel Dance, which left Torbay, England, for Bombay and China January 4, 1803. On January 31, 1804, heavily laden, she commenced her homeward passage from the Canton River with several other Indiamen and some Indian country ships and with Captain Dance, as senior commander, commodore of the merchant fleet. On February 14, five strange sail were sighted, and the Indiamen *Alfred*, *Royal George*, *Bombay Castle*, and *Hope*, with the fast Indian brig *Ganges*, made contact with them and reported that they were a French naval squadron later found to be the *Marengo* (84 guns; 1,200 men), *Belle Poule* (44 guns; 490 men), *Semillante* (36 guns; 400 men), *Berceau* (32 guns; 350 men), and a Dutch brig of 18 guns. This hostile fleet was a formidable one consisting of one heavy battleship, three frigates, and a sloop of war, mounting 214 guns and carrying 2,490 men. The French seemed loath to attack the English fleet of armed merchantmen, but maneuvered to cut off stragglers; so the East Indiamen *Royal George* and *Earl Camden* and the little *Ganges* took the war to the enemy, made contact and opened fire, with the other armed merchant ships of the East India fleet ordered to get their guns to bear as soon as possible. The French were amazed at the audacity and the solidarity of the British merchant fleet. After exchanging shots and having a brief but vigorous engagement with the *Royal George*, *Earl Camden*, and *Ganges* and seeing the other armed merchantmen of the English East India fleet coming up with great determination, the French rear admiral on the powerful battleship *Marengo*, in charge of the squadron, took alarm, and the enemy vessels "hailed their wind and made away to the eastward, with every stitch of sail they could set." A powerful French fleet of warships was beaten and running away from an organized group of English merchantmen that did not have a single ship of the British Royal Navy to protect them. The English East Indiamen chased the retreating French warships for several hours and then, resuming their voyage, reached England safely. The value of the English ships, cargoes and private property, was said to be worth close to £8,000,000, and there was great acclamation in London when it was known that part of this fleet of East Indiamen had put to flight a powerful squadron of French men-of-war.

Around the turn of the century, it was said that East Indiamen resembled ships of the Royal Navy so closely that foreign warships frequently mistook them for British warships. In 1797, Admiral Sercey of the French Navy, with a squadron of six frigates, met six English East Indiamen off the northeast of Java as the merchantmen were bound home from China. The French admiral mistook the East Indiamen for "two British sail of the line and four frigates," an apparently much too powerful force for him to want to engage, so he "put on all sail and fled." Admiral Linois of the French Navy, in 1804, made a similar mistake, as he credited some East Indiamen with being 64-gun British warships and decided to give them a wide berth. However, there were instances of but moderately armed French warships and powerful privateers that went in chase of 74-gun British naval ships of the line under the impression that they were East India merchantmen.

The total number of East Indiamen can be said to have been larger than the number employed in the service in any one year. During the first decade of the nineteenth century,

Parkinson tells us, 102 Indiamen sailed or arrived home in 1800, 105 in 1804, 99 in 1805, 93 in 1808, and 101 in 1810. He says: "A rough average for the period might make the number of ships a hundred, the aggregate burthen ninety thousand tons, and the number of seamen seven thousand." In 1807 statistics giving the relative proportion of the various types of ships comprising the East Indian fleet show 28 vessels of 1,200 tons, 33 ships of 800 tons, and 31 ships of the 500- to 600-ton class, which gives a total of 92 vessels and evidently understates the total number of East Indiamen in existence at that time if we include all the so-called "extra ships." We are further informed: "In 1809 the whole of the shipping registered in England, apart from the East Indies fleet, included but twenty vessels of over 600 tons, and of these not one measured as much as 1,000 tons." The importance of the East Indiamen to the British mercantile marine is, therefore, conspicuously evident. In 1810 there were 34 East Indiamen of 1,200 tons or more. When the size of East Indiamen is considered in relation to the size of other British merchantmen, it is understandable how some twenty years later, when the East India Company, upon losing its trading monopoly with the East, decided to discontinue commercial operations and sell its ships, the company learned that "none of the larger types of East Indiamen can be used in any world trade except that for which the ships were built and in which they are now engaged; that the smaller classes of ships [600 tons or less] might find buyers, but the big ships [800-1,200 tons] if bought by private owners can be operated only in the China trade, and no matter how economically they are run it will be only a short time before such ships will be driven from the seas by smaller vessels operated cheaply."

The statistics in regard to the size and nature of the East India fleet in 1813 are important, as this was the last year that the company enjoyed a monopoly of the Indian trade. It was reported that there were 116 ships in the company's service, but this number undoubtedly includes the smaller so-called "extra" ships and several that had been built as a speculation and had been taken up by the company. Among the list is the *Thomas Grenville*, built for the company in Bombay in 1809, and of the five vessels under construction for service in the season of 1813-1814, it is surprising to note that four of them were being built in India and only one in England. All were of the famous and somewhat standardized 1,200-ton class, and the ships being constructed for the company in India had been laid down "in Bombay, Bengal and Calcutta." The effect of the withdrawal from the East India Company of the monopoly for Indian trade, while granting the company a British monopoly for the China trade, was to increase the extent of commerce between Britain and India and materially lower the cost of transport. The East India Company had been paying £40 a ton for its ships. It was said that "better ships could be built and equipped for £25" and that "by the year 1830 the cost of freights from India to England had dropped to £10 a ton."

There is no doubt that the East India Company had been building, chartering, managing, and operating its ships with far too little regard for economy. The accusation was made that in addition to extravagant compensation of the officers and "coddling" of all the complement, the company ships carried far too large crews, "having one man for every 10 or 12 tons, whereas British ships in the West Indian trade carried one man to every 25 tons." The East India Company ships certainly did carry an evidently unnecessary number of junior and warrant officers and servants, but considering the number of guns mounted on board and the need to use them in protection during the wars, the number of competent seamen aboard was generally too small to work the ship properly and fight the mounted guns. The East India Company monopoly in the Indian trade was terminated just about the time of the end of the war with France and when the War of 1812 between Britain and the United States was about to cease and an era of international peace was about to begin. Certainly there can be no comparison between the number of seamen on ships in the Indian trade after 1814 and the number of such men that the company had used for manning its ships during the turbulent years in which it had been operating. British marine historians have condemned the East India Company for building beamy ships, implying that the competitive British ships that

entered the trade after 1814 were better merely because they had a greater ratio of length to beam. The East India Company had been rich, powerful, and independent enough not to let the formula for tonnage measurement affect the relative dimensions of its ships. When the monopoly was removed, competition made such considerations as tonnage dues of importance, with the result that the usual badly proportioned British ship entered the trade.

After the loss of the monopoly of the Indian trade, the East India Company continued in the service, being able to maintain a fair volume of Indian business and carry forward operations because of the monopoly of the British China trade, which it continued to enjoy for some twenty years. Moreover, the East India Company was strongly entrenched in both a political and economic sense in India; its ships were bigger and better than those put in the run by competitors, and the accommodations for passengers on a company ship were vastly superior to, more roomy and comfortable, if more expensive, than those offered by rival ships. In 1820 the Clyde-built ship *Bellfield*, constructed for the London-Calcutta trade, was considered a fine competitive ship, but she was of only 478 tons; whereas at this time the company was operating the *Lowther Castle* of 1,507 tons, built in 1811 (26 guns; 130 men), and the *Earl of Balcarres* of 1,417 tons, built in Bombay in 1815, and these stately merchant frigate ships, carrying a wealth of canvas, were being encouraged in the days of competition, with the wars over, to make good passages.

The East Indiamen of the mid-eighteenth century were slow ships with models that made them clumsy, but the operation of the ships in port and their schedule were as leisurely as the movement of the vessels through the water under canvas. The following is a record of a round voyage of an East Indiaman sailing direct from Britain to China and return via Batavia (outbound), with no call either way at an Indian port:

| | | | |
|--------------------------|----------------|----------------------------|---------------|
| Left England | Sept. 20, 1746 | Arrived in China | July 8, 1747 |
| Arrived St. Helena | Dec. 25, 1746 | Left China | Jan. 12, 1748 |
| Left St. Helena | Jan. 14, 1747 | Arrived St. Helena | Apr. 4, 1748 |
| Arrived Batavia | Apr. 19, 1747 | Left St. Helena | Apr. 25, 1748 |
| Left Batavia | June 9, 1747 | Arrived off Scotland | July 9, 1748 |

An arrival "off Scotland" 75 days from St. Helena is a surprising last record of a voyage which was quite evidently not completed, but which, up to that time, had occupied 21 months 19 days, or 658 days. The run from England to St. Helena was made in 96 days; from St. Helena to Batavia, 95 days; and from China to St. Helena, 83 days. However, if the arrival date at China (July 8, 1747) as stated is correct, the Indiaman made a good run of 29 days up the China Sea, which would require a good favorable monsoon and the use of the ship's canvas. The long periods spent in port are noticeable: at St. Helena, 20 days outbound and 21 days homebound; at Batavia, 51 days; and at China (her destination), 6 months 4 days, or 188 days. The time reported spent at sea outbound from England to China was 220 days and on the return to some ambiguous point "off Scotland," 158 days.

The way that the old East Indiamen loitered in the English Channel was atrocious. A published log of one of these ships outward bound for India states that the passengers from London boarded the vessel at Gravesend on July 30, 1746, and that the ship sailed August 2 and did not reach St. Helena until December 24, or 144 days later. The Indiaman anchored at the Downs on August 3, passed Dungeness August 5, anchored at Isle of Wight August 8, was at Portsmouth (for treasure and some provisions) August 10, was at Plymouth August 29 (for more provisions, etc.), and did not actually get to sea until September 20, or 49 days after sailing from the Thames. After this fearful waste of time in getting started on her voyage, with passengers aboard, the ship was 95 days in sailing from the English Channel to the island of St. Helena in the mid-South Atlantic (long owned by the East India Company and used by it to break the journey to India and the East and as a station to replenish supplies and water).

Reported fast round voyages of East Indiamen in the early nineteenth century can be cited. The *Glatton* (1,200 tons) left the Downs March 29, 1802, for China and was back home April 24, 1803, after an absence of 12 months 26 days, which was an outstandingly fast run not only for an East Indiaman but also for any ship, considering the possibility of detention at the China end. The *Marquis of Ely* (1,200 tons), owned by Robert Wigram, left Portsmouth March 20, 1804, for China via Ceylon and was back in the Thames September 12, 1805, the voyage occupying 17 months 23 days. Of the smaller ships built for carrying a large quantity of cargo safely, the *General Stuart* (600 tons) and the *Devaynes* left Portsmouth September 17, 1808, for Bombay, and the former ship was back in the Thames on April 16, 1810, after an absence of 19 months; the *Devaynes* returned July 6, 1810, to her moorings in the Thames, having been 21 months 19 days on the voyage.

During the wars, when the British East Indiamen sailed in convoy, the passages were naturally of long duration. But after 1815, with the ships sailing separately and spurred on by a measure of competition, some very good passages were reported. It is surprising to read that when the East Indiamen in the early post-war days sailed "on their own," the difference in the individual performance of the various ships was not very great. We are told that in 1815, although twelve ships homeward bound from China separated off Java, "all reached the Downs within a period of twenty-four hours," which does not suggest any racing home or the existence of much rivalry between the various ships and their commanders. Parkinson says that after 1815 "Indiamen occasionally performed the passage from China to England in less than 100 days"; yet he adds that "the difference between one ship and another was never very great," the good time made occasionally over a term of years being evidently due entirely to very favorable sailing conditions experienced.

In 1817, we are informed, there was "a mild sensation" in Britain when "an American [topsail] schooner reached England from the Mauritius in sixty days." This was evidently increased to alarm when she was promptly followed by another American merchant vessel, which made the run from China to England in 108 days. However, British historians say that during that same year (1817) an English transport made a run from off Ceylon to the Lizard in the English Channel in 77 days, and the thirteen Indiamen of the China fleet entered the Channel "only 109 days out from Canton River." A British press article, commenting on this unprecedented achievement of English merchant sail, refers to it as "a triumph of mercantile navigation, a combination of nautical skill with good fortune, of which there is no record of an equal exertion; to cut through 15,000 miles of ocean in that short time is, with so many vessels, without example in marine experience." Apparently, these British ships, although not in convoy, sailed in company either because of habit or for security reasons, but we are told that the same East Indiamen that during the years 1800-1813 made very dilatory voyages commenced to hurry and carry sail in 1815 and show some speed. Yet the British journalist, after commenting on the phenomenal sailing performance of the thirteen Indiamen on their run home from China in 1817, adds:

With similar passages we ought to communicate with our Asiatic Presidency at Calcutta within six months, instead of once in twelve to fifteen months, as is now the loitering and dilatory habit of that important intercourse. The Americans of New York

and Washington will soon exchange letters and products with Bengal in five months! The only early account we had of the victory of Waterloo being heard of at Calcutta was from New York.

It was claimed that in 1829 the Indiaman *Marquis of Wellington* made the run from England (the Lizard) to Bengal in 81 days, which was better time than that made by the frigate H.M.S. *Medusa*, which, going the other way, was credited in 1805-1806 with a passage of 84 days from the Hooghly to the Lizard and 82 sailing days if the two days that she was at St. Helena are deducted (distance traveled reported as 13,831 miles—an average of 168 miles per day and some 7 knots per hour). Both of these runs attracted a lot of attention, as they were exceptional to an almost unbelievable extent. When the frigate *Medusa* made her record run home, it was at a time that a passage of four months was

considered highly creditable, and a passage of five months was deemed good. Early in the nineteenth century, it usually took five or six months to make the passage out to India and about six months for the return home, which usually involved a call at St. Helena. Dr. Johnson, the surgeon on the British frigate *Caroline*, in a narrative of that ship's outward passage to India in 1803 (timed as to both season of the year and course to get the benefit of a favorable monsoon in the Indian Ocean), tells of going as far south as Lat. 38° and, in running her easting down, making "from 250 to 266 miles a day." In the Indian Ocean, "a fine breeze wafted us along two hundred miles a day," and "we saw the fires on the mountains of Ceylon, after a passage of one hundred and four days." But Ceylon was not Calcutta, and after a call at Madras, the *Caroline* had a tedious passage along the Coromandel coast and was approaching five months out when she reached her final destination.

The first quarter of the nineteenth century saw the Honourable John Company's East Indiamen at their zenith, and when the ships were sold by government decree, the British merchant marine undoubtedly suffered for a time in both quality and prestige. It was many long years before Indiamen were built in Britain of a size and class to equal the stately ships of the H.E.I.C., which had been built, conditioned, and operated like men-of-war engaged in merchant service. The nine Blackwall frigates built at the Blackwall yard on the Thames in 1837-1841 inclusive were of from 776 to 971 tons and averaged 866 tons. This size of ship can be compared with that of the following East Indiamen built at the Blackwall yard during the years 1813-1825:

| Year | Name of Ship | Tonnage | Year | Name of Ship | Tonnage | Year | Name of Ship | Tonnage |
|------|---------------|---------|------|---------------|---------|---------------------------------------|----------------------|------------|
| 1813 | LADY MELVILLE | 1,321 | 1818 | KELLIE CASTLE | 1,350 | 1821 | DUCHESS OF ATHOL | 1,333 |
| 1816 | WATERLOO | 1,325 | 1818 | DUNIRA | 1,325 | 1821 | SURAT CASTLE | 1,223 |
| 1817 | CANNING | 1,326 | 1820 | REPULSE | 1,333 | 1825 | ABERCROMBIE ROBINSON | 1,325 |
| 1817 | DUKE OF YORK | 1,327 | 1820 | ROYAL GEORGE | 1,333 | 1825 | EDINBURGH | 1,325 |
| 1817 | THOMAS COUTTS | 1,334 | 1820 | KENT | 1,332 | Average tonnage of 14 ships | | 1,322 tons |

These old East Indiamen were slow ships as regards model lines and spurt speed, but they occasionally made long-distance voyages in good time, according to British reports, when they found sailing conditions to their liking for long periods of time. Their commanders were exceedingly well informed in regard to the routes traveled and benefited by the accumulated and organized sailing records and experience of navigators in these waters of approaching two centuries. In 1826, we are told, the *Thomas Coutts* (Capt. Alex. Chrystie) left a Channel port on March 12 and reached Bombay June 2 after a fast run of 82 days. The ship then proceeded to Singapore and thence to China and, returning via St. Helena, reached the Downs on March 2, 1827, after an absence from England of 11 months and 21 days for the round voyage to India and the Far East, including all detentions. Ten years later (1836), another East Indiaman, the *Earl of Balcarres*, reported a passage of only 79 days from the English Channel to Bombay, which is an amazing run (if true) for a "bluff-bowed 10-knot East Indiaman." Another ship of this type, the *Lord Wellington*, is credited with a run out to Calcutta in 1820 of 82 days, and the boast was made that on no single day did she cover more than 200 miles (less than 8½ knots per hour) or show at any time for a spurt a log speed in excess of 9½ knots. The East Indiaman *Castle Huntley* was reported on one of her outward passages to India to have left Torbay April 1, passed the Lizard April 6, and reached Bombay June 22 after a passage of 82 days from Torbay and 77 days from the Lizard. On a homeward run from China, the big East Indiaman *Thames* of 1,425 tons (built at London in 1819) is said to have left port November 18, 1831, and passed Java Head December 5 (only 17 days out). She was at St. Helena 54 days later (January 28, 1832), and arrived off Portland March 13 after a passage of 116 days from China

(reported as 115 days, which probably allows a day for possible detention at St. Helena). It seems necessary to say that British historian reports of the fast passages made by East Indiamen appear at times to be not only incredible but also impossible. Capt. Arthur H. Clark is correct when he says that they were fine, strong ships, well and strongly built of the best available materials, with but little regard for cost, but that "they were very slow, and their passages were reckoned not by days but by months."

These old East Indiamen had an abundance of canvas if their conservative commanders were disposed to use it. They were never driven in a Yankee sense, and no matter how they were pushed they could never make high speed, their lines being such that a speed of about 9 or 10 knots was the limit of these "Majestic Honourable John Company ships." These East Indiamen and the Blackwall frigates that followed them did, however, use stunsails extensively when running before the wind, and they were equipped to carry such sails fully as much as the extreme clippers of the 1850's. It is evident that after 1815 the East India Company put a lot of canvas on its ships, including spare suits, and seemed to care less about having to replace split sails. The Indiaman *Essex*, in 1816, was said to have set sixty-four sails, including "royals, skysails, moonrakers, cloudscrapers, stargazers, sprit-topsails, and upper topgallant stunsails; also 'fancy canvas' such as ringtail, bull-driver and mizzen royal staysail." However, nothing is said of the traditional British practice of shortening sail at nightfall, which, apparently, persisted for years.

Captain Clark, in *THE CLIPPER SHIP ERA*, writing of the British East Indiamen and their operation prior to the days of the Blackwall frigates, says:

Every evening, no matter how fine the weather, royals and all light sails were taken in and stowed, and the royal yards sent on deck. If the weather looked at all as if it might become threatening during the night, the topgallant sails and mainsail were stowed and a single reef put in the topsails. Safety and comfort were the watchwords, with no

desire or effort for speed. No one ever knew how fast these vessels really could sail, as they never had anyone on board who tried to get the best speed out of them, but without doubt their passages might have been considerably shortened with even a moderate amount of vigilance and energy. All we know is, how slow they were.

We are told that the builders of the British East Indiamen "kept to the full-bodied, kettle-bottomed models," which were dimensioned so that, although big cargo carriers, "they required a lot of iron kentledge to keep them on their legs." For more than two centuries, the Indiamen were built from the same general lines, and under the monopoly in existence and the self-satisfaction of their owners and commanders, which was conspicuously evident, there could be no marked progress in the naval architecture of such merchant ships. We read (Captain Clark):

It would, of course, be an exaggeration to say that there had been no improvement in British shipping from the reign of Queen Elizabeth to the Victorian era, but it was so gradual as to be perceptible only when measured by centuries. Thus we speak of the ships of the sixteenth, seventeenth, and eighteenth centuries, and upon examination are

surprised to find how few and slight were the improvements made during these three hundred years in the design and construction of hulls or in spars, rigging, and sails. The only striking improvement was a modification of the really beautiful ornamentation which embellished and at the same time lumbered up the lofty hulls of the earlier ships.

When the Indian and oriental British trade was thrown open to all British ships and competition developed among shipowners, so strong was the tradition of East Indiamen impressed upon the British mind that private capital continued to construct frigate-built ships (which were known as Blackwall frigates), and although from the mid-thirties some effort was made toward economy and gradually, because of economic reasons, toward better speed, yet the service was not materially changed for many years. Much of the wasteful extravagance of operation was naturally eliminated, but the time-honored custom of "making snug for the night" was too ancient and comfortable a practice to be abolished in a short time, and it continued until the competition of Yankee ships in deep-sea trade forced a change in the economic handling and driving of British merchant vessels. When the British exclusive Navigation Laws were repealed in 1849 and Yankee clippers appeared to dominate the

British marine carrying trade, the days of even frigate-built ships were really over, although ships that looked like frigates but had different and sharper model lines and different sail plans were operated under highly competitive conditions for many years.

When the British East India Company disposed of its ships in the early thirties and the trade to India, China, and the Far East became competitive among British shipowners by act of Parliament, the unprecedented "princely emoluments," perquisites, and extravagant "indulgences" connected with the operation of ships and the total compensation of a ship's commander and officers were also substantially reduced and the complement of ships lessened, with a diminution of naval pomp and expensive, senseless ceremony. With the various forms of sanctioned extras, such as free allotted cargo space, primage (or a percentage upon the total gross freight earned), and the revenue from passengers carried, profit from "dunnage," cumshaws (presents), etc., an Indiaman's captain received some £6,000 to £10,000 a year and occasionally very much more, and other officers' total remuneration was on a somewhat similar liberal basis, which suggests a high degree of extravagance. In the second decade of the nineteenth century, Indiamen generally were of about 1,350 tons and carried some 26 guns and about 130 men. The "large ship" of the East India Company, the *Earl of Balcarres*, built in 1815, was of 1,417 tons; but she carried a complement of 133 men consisting of a commander, 6 mates, 6 midshipmen, 2 surgeons, purser, 2 gunners, 2 carpenters, sailmaker, master at arms, armourer, butcher, baker, poulterer, 2 coopers, 2 caulkers, 2 stewards, 2 cooks, 8 boatswains, 6 quartermasters, 7 officer's servants, and 78 seamen before the mast. As late as 1849, the Blackwall frigate *Alfred* of 1,291 tons carried as many as 80 men besides the commander, consisting of 5 mates, 3 boatswains, 4 quartermasters, 2 carpenters, 5 stewards, cooks and servants, and 60 seamen before the mast. (A purser, or supercargo, was evidently considered extra.)

There were few better known names connected with the building of sailing ships in Britain during the first half of the nineteenth century than those of Wigram and Green, and both were connected with the famous old Blackwall yard at London. Whereas Robert Wigram's first ship was the *General Goddard* of 755 tons (shares in which he purchased in 1788), the ship that, it is said, really founded the Wigram fortune was the *True Briton* of 1,198 tons, built for Robert Wigram at Wells's yard, Deptford, in 1790, which made many eminently successful voyages for him. After this ship "went missing" in 1809, the name was used on two other East Indiamen (or Blackwall frigates), the *True Briton III* being a ship of 1,046 tons, built in 1861. The type of ship that was "taken up" regularly by the East India Company is indicated by an episode in the career of the Wigram-owned ship *General Goddard*. Under the command of Capt. William T. Money (a lifelong friend of Robert Wigram and an old shipmate on the *Admiral Watson*), the *General Goddard* sailed from England in May 1793, and she was at St. Helena waiting for a convoy home in 1795, when news was received that the Dutch had joined France in the war and a fleet of seven Dutch East Indiamen was due to arrive at St. Helena any day. We are told that Captain Money "hastily fitted out the '*Goddard*' as a 30-gun frigate" and in company with a British 64-gun naval vessel, another East Indiaman, and a small packet put to sea to intercept the Dutch fleet of merchantmen. The *General Goddard* sighted the Dutch East Indiamen one evening, chased them during the night, and the next morning captured all of them alone, the other British ships being too far away to render any assistance. The prizes were taken into St. Helena, and the prize money (equivalent to two-thirds of the value of the captured ships and their cargoes) was divided among not only the vessels of the British searching fleet but also other ships that were at the port and the governor and garrison of St. Helena; the ships received three-quarters of the total prize money and the governor, with the land forces, one-quarter.

Robert Wigram was a very competent, energetic, versatile, and successful businessman. After his experience as a surgeon at sea during three voyages in East Indiamen (February 1764-May 1772), he came ashore in 1772, started in the drug trade, prospered in business,

and became a shipowner and a "ship husband" of East Indiamen. Robert Wigram, at the beginning of the nineteenth century, was the second largest shipowner of the East India fleet, as he was the managing owner of six ships. By 1812 he had acquired an interest in ships previously managed by other prominent men, and as a man of wealth and great influence and the managing owner of not less than ten ships, he was the leader of the East India Company's shipowners, or Marine Interest. Wigram bought half the shares in the historic Blackwall yard and obtained virtual control as one of the proprietors, in 1810 was chairman of the new East India docks, became a member of Parliament, and was made a baronet in 1805 by Pitt, whom he staunchly supported. Wigram's son William has been described by Macaulay as "the most obstinate of the East India Directors." Sir Robert Wigram died in November 1830, when approaching eighty-seven years of age; but he had retired from business in 1819 (when seventy-five years old) and sold the whole of the Blackwall yard estate, half to George Green and one-quarter to each of two of his own sons, Money and Henry Wigram.

George Green, born in 1767, the son of a brewer, started his career as an apprentice in the Blackwall yard when fifteen years old. By sheer ability and industry, he grew to be a great shipbuilder and yard manager and made money in ships. He was a philanthropic as well as able man and built schools, almshouses, etc., and a sailors' home on the East India Dock Road. George Green, who acquired a half interest in the Blackwall yard by purchase from Sir Robert Wigram in 1819, died in 1849, when eighty-two years of age, leaving his Blackwall yard investment to his two sons, Richard and Henry.

Richard Green, the elder of the brothers (R. & H. Green), was a sickly child, and although he became active as the head of the firm in later years, he was always known as "Dicky" Green and had never been "through the mill." Henry Green, on the other hand, was apprenticed as a shipwright when fourteen years of age and was made assistant foreman in the building of the 408-ton ship *Simon Taylor* in 1824. The following year he was sent to sea as fifth officer of the East Indiaman *Vansittart* and, in 1827, went out on his second voyage in the ship *Charles Grant*. Henry Green, therefore, had sound practical training as both a shipbuilder and a seaman and obtained in his early years some experience in the Indian trade. In 1824, George Green, in addition to building three ships for the East India Company service, purchased the ship *Sir Edward Paget* and sent her out to India as the pioneer ship of Green and Wigram's Blackwall Line. In 1825 the *Roxburgh Castle* was built by the firm and chartered to the H.E.I.C. (Honourable East India Company), and the following year the Hudson Bay trader *Prince Rupert* was launched. In 1829 the firm took Richard Green into partnership, became known as Green, Wigram & Green, and extended its interests into whaling by buying the whaler *Matilda* and building the *Harpooner* (374 tons). In 1830 the great shipwrights' strike occurred on the Thames, and the Blackwall yard was closed down. When it reopened, the day of building East Indiamen for the H.E.I.C. service had passed because of the approaching expiration of that company's charter, but among the private firms that were preparing to put ships in the Indian trade were the owners of the Blackwall yard.

With the passing of the Honourable East India Company as ship operators and the dominant factor in British trade to India and the Far East, the Blackwall firm of two family interests commenced to pull apart. Instead of building, buying, and operating ships for the firm, the partners soon commenced to play their own hands as far as ship ownership and management were concerned; but in 1834-1835 they brought out the *Malabar*, *Monarch*, and *Windsor Castle*, which, while similar to East Indiamen, were referred to generally as "Blackwall frigates." Usually, a pair of ships was laid down together, one for the Green and the other for the Wigram family, but gradually co-operation for mutual interest turned into competition. In 1843 the partnership was dissolved, the two families severed business connections, and the famous Blackwall yard was divided into two parts, R. & H. Green taking title to the eastern and Money Wigram & Sons to the western portion. For many

years, both the Greens and the Wigrams built ship for ship; however, "Dicky" Green concentrated on wood sailing ships for the Indian trade, whereas Money Wigram, as early as 1837, had built and put the bark *Emu* in the Australian trade, and he became much interested in auxiliary steamers.

The East India Company was deprived of its trading monopoly with India in 1814 by the British Parliament, but China was reserved as the exclusive British trading preserve of the company. The free trade element in Britain brought the matter of the East India Company's China trade monopoly before Parliament in 1832, and it was asserted that special privilege was being permitted to keep back the stream of Empire trade. National discontent of the mercantile interests, with criticism of the company and of the effects of the monopoly, increased in vehemence and volume, and British shipowners wanted to trade freely with all parts of the Orient. Parliament was compelled to act, and the company was powerless to hold on to even its Chinese monopoly. From the year 1833, the East India Company lost its exclusive trading privilege to China, as it had previously lost its trade monopoly with India; so the company, rather than completely change its practices, which would be necessary if it was to combat new and vigorous competition, decided to give the maritime free traders the entire field of ocean trade between Britain, India, and the Orient and retire from the realm of ocean commerce. The East India Company's commercial charter formally came to an end in April 1834, and henceforth the company became entirely a political (and military) body in India. British subjects were permitted to settle in the country, and the work of subjugating India in the interest of the British nation went forward.

The company's entire fleet of ships, of which the East Indiamen employed in the China trade had for years been popularly known as "tea waggons," was ordered sold. These ships, built like naval vessels of oak, elm, and teak, copper-fastened throughout, were generally said to have cost about £40 per ton ready for sea, and when old and disposed of by the H.E.I.C., they brought pretty good prices at private sale. Of the sixty-two operating ships, forty-six were sold for further sea service and sixteen for breaking up for their large tonnage of copper and metals and salvageable materials. According to Capt. Arthur H. Clark (*THE CLIPPER SHIP ERA*), the *Earl of Balcarres* (1,417 tons), was sold in September 1834, when nineteen years old, to Thomas A. Shuter for £15,700, and after fifty-two years of sea service, this vessel, with a sturdy hull, became a receiving hulk on the west coast of Africa. The *Lowther Castle* (then reported as of 1,408 tons, although this ship, built in 1811, was recorded as of 1,507 tons in 1820) was acquired by Joseph Somes for £13,950; her age was reported as nineteen years. (A British historian records the sale of the *Earl of Balcarres*, also to Joseph Somes, for £10,700.) The *Minerva*, stated as of only 976 tons, eighteen years old and ready for sea, was sold to Henry Templar for £11,800, and after thirty-seven years of service in the Indian trade, she was wrecked off the Cape of Good Hope in 1850. The *Bombay* (1,246 tons), when twenty-two years old, was bought by Duncan Dunbar (a good judge of ships and prominent in the Indian trade) for £11,000; this ship was operated for fifty-nine years at sea before she was wrecked. The *Thames* (1,360 tons), when thirteen years old, was sold to James Chrystall for £10,700, and Thacker & Mangels paid £10,550 for the *Buckinghamshire* of 1,369 tons when she was eighteen years old. The *General Kyd* was reported sold for £9,100, and the *Asia* fetched £6,500. Some of the ships disposed of for breaking up brought high prices; of this class of sales, the *Waterloo* of 1,325 tons (eighteen years old) went for £7,200, the *General Harris* brought £6,600, the *Farquharson* £6,000, the *London* £5,900, and the *Canning* of 1,326 tons (seventeen years old) fetched £5,750. One wonders whether these East Indiamen, which sold at over £5,000 (or some \$29,000) for "breaking up," were turned over to the shipbreaker promptly or if the new owners did not try to get a few or possibly many more years of service out of these ships before dismantling and salvaging them.

It would seem that the last of the East India Company's ships to sail from England to China under the company's flag and management was the *Elizabeth* (Capt. John Craigie),

which, operating under the orders of "The Honourable Court of Directors of the United Company of Merchants of England trading to the East Indies," sailed from the Thames in the early summer of 1833, drawing 17½ ft. and on an even keel when she left Gravesend. The ship passed Beachy Head July 28 and the next day dropped her pilot off Brighton. On January 28, 1834, she anchored in China waters and on March 13 weighed anchor and commenced her return passage. The ship rounded the Cape of Good Hope and dropped anchor off St. Helena on June 19, when, surprisingly, she discontinued her course to England and sailed for Halifax Harbor, Nova Scotia, where she arrived August 18, 1834, and was unloaded at Cunard's wharf. On September 3, with her holds empty, the voyage came to an end. Whether or not the ship was sold in Canada is unknown.

For twenty-four years after the East India Company ceased to be a trading concern, its directors acted as a council advising and assisting in the control of the political India. In 1857 the martial races in India began suddenly to act against their British masters, the native army of Bengal revolted, the northern predatory races rebelled, and the Indian mutiny burst into flame. It was quelled by British troops, but the incident proved the weakness of the political and military setup, so the British Government decided to take absolute and direct control over Indian affairs. On November 1, 1858, a proclamation was made throughout India that the government of the country had been transferred from the East India Company to the British Sovereign. Queen Victoria became Empress of India and ruled the country through a viceroy. Having ceased to be traders and being no longer a political power, the British East India Company, probably the most unique corporation that the world has ever known, came to an end. The second of the famous East India houses (built in 1726 and enlarged in 1799) was sold in 1861 and pulled down the following year, but it was not until May 15, 1873, that it was decided to dissolve the company as of June 1, 1874, and have it absolutely pass out of existence—about two and three-quarters centuries after it had been first formed and chartered by Queen Elizabeth. For two and a third centuries, the English East India Company had been a powerful and the leading British maritime and overseas trading corporation.

When the achievements of the East India Company, its virtues and its faults, are being considered, it is well to bear in mind that this private corporation grabbed the peninsula of India, held on to it, and later made a present of it to the British nation. The company's ships captured the island of St. Helena in the mid-South Atlantic during the first year of its operations, and it was to this very valuable and strategic island and to this secluded spot that Napoleon was exiled under detention by the British in 1815. (He remained there until his death in May 1821.) In the early years of the East India Company, its ships fought the Portuguese and the Dutch and by military might wrested a footing in India from the Portuguese. In 1635 Bombay was captured by the company's fleet, and gradually the British East India Company ships obtained command of the waters of the Bay of Bengal and Arabian Sea, dominated the entire coast line of the peninsula, and drove their commercial European maritime rivals out of India. The English Government gave no naval or military protection to the company for over sixty years (while the company was in its infancy), and it was not until 1662 that England sent any men-of-war to Indian waters to protect the interests of this thoroughly English company; in the meanwhile, the company had been required to operate both as merchants and as a naval power, without any external aid such as trade had a right to expect and even demand and such as the traders of rival foreign powers received. The Bombay Marine was organized by the East India Company to build and operate warships to protect its factories or trading centers and its ships from both rival European armed vessels and pirates. As long as the East India Company was in existence and doing business, the Bombay Marine was a company navy, and its principal job was to protect the company's ships and property, convoy mercantile East Indiamen in the Indian Ocean, and make surveys of waters for the benefit of navigation and trade. About the middle of the eighteenth century, the Bombay Marine operated twenty war vessels in deep-sea work, and at the beginning

of the nineteenth century the Bombay naval fleet of the company consisted of "two frigates, three sloops-of-war, and fourteen brigs" in addition to reconverted armed prizes and vessels especially built or acquired for the service. Most of the vessels of the company's marine (or naval) force were built at Bombay, and in the second decade of the nineteenth century the company's dockyard there built large and powerful warships—not only naval frigates but also a 74-gun ship of the line and an 84-gun (2,289-ton) line-of-battle ship. In May 1830, the name of the Bombay Marine was changed to the Indian Navy, and the service continued until 1863, having long survived the existence of the East India Company's maritime commercial service with both India and China.

The British East Indiamen

It was the Spanish, Portuguese, and Dutch, with their explorations and exploitations of foreign countries, that caused Britain, with its island home in the North Atlantic, to realize fully its geographical setting and its destiny and become a marine power. In the seventeenth century, an English writer, in a sweeping statement, quaintly summed up the matter of British overseas aggression, colonization, and development when he wrote: "The first article of an Englishman's Political Creed must be that he believeth in ye Sea, etc. Without that there needeth no general Council to pronounce him incapable of Salvation."

By sailing around the Cape of Good Hope and across the Indian Ocean, the Portuguese "discovered" India or, rather, the water route to India for the European Christians in 1498; but it was a century later that the aggressive and progressive marine enterprise of the Dutch, with its resultant commercial prosperity, caused Englishmen to cast their eyes to the East and definitely move to share in the profits of exploiting and trading with the East Indies and the Orient. When in 1599 a group of London merchants subscribed £30,133 to send ships on an East Indian voyage and petitioned Queen Elizabeth for permission and a monopoly of that trade to encourage the venture, it was not so much the Portuguese as the Dutch that had incited them to action; for whereas it was known that the Portuguese had been extracting wealth from India and the East for a century, the Dutch at that time were so prominent as ocean carriers and world traders—East and West—that they had become known as "waggoners of the sea."

Queen Elizabeth, on December 31, 1600, incorporated a company by royal charter under the title of "The Governor and Company of Merchants of London trading into the East Indies" and conferred upon it the exclusive right of trading with all countries lying beyond the Cape of Good Hope or the Straits of Magellan. The designation "East Indies," therefore, covered India, China, Japan, Australasia, and the islands and coast lines of the Pacific and Indian Oceans. Therefore, the East India Company of England was formed for exploiting the trade with the East Indies and to compete with the Dutch, who had obtained a practical monopoly of the trade with the Spice Islands and threatened to control much of the business with the Far East. This new English company grew to be the most amazing and powerful private concern that the world has ever seen. By means of the sailing ship, it revolutionized British trade and not only laid the foundation of and steadily built, expanded, and developed but also almost completed that imposing structure that became known as the Indian Empire.

The organized and incorporated East India merchant adventurers of Britain, founded as a great commercial monopoly, had an original capital of £72,000, which was expended on the first voyage in five ships (£45,000) and their cargoes (£27,000). The flagship of the

fleet was the *Red Dragon* of 600 tons (once named *Mare Scourge* and built as a privateer), and her commander, James Lancaster, held the title of "Generall" of the squadron. The second vessel in size and importance was the *Hector* of 300 tons. Two other trading ships were the *Ascension* of 260 tons and the *Susan* of 240 tons, and a fifth ship that was added to the fleet was a victualing, or store, ship of 130 tons named the *Guest* (or *Guift*), which was bought for only £300. This fleet, which left Woolwich February 13, 1601, aggregating 1,530 tons and manned by 460 officers and men, with 20 additional in the complement who were merchants and supercargoes, was heavily armed with cannon and small arms. The log of this pioneer voyage of East India Company ships shows much dilatoriness, slow sailing, privateering as well as trading, and no attempt being made to visit an Indian port. It was a voyage to Sumatra and Java for trading and privateering against the Portuguese. One such vessel was captured when outbound off the African coast in the North Atlantic, and a rich prize, the 900-ton ship *St. Thomé*, was taken by force of arms in the Straits of Malacca when the English fleet deliberately cruised as privateers while its merchants ashore were collecting spices at Acheen. On its outbound passage, the fleet crossed the equator in June 1601 and then "discharged" the *Guest* (took out all her cargo, dismantled, salvaged, and destroyed her). Table Bay was reached September 9 and the Cape of Good Hope doubled November 1, 1601. The ships were at Madagascar from December 17, 1601, to March 6, 1602 (79 days), and reached Acheen on the northwest extremity of Sumatra June 5. Leaving there November 9, 1602, with the *Ascension* and *Susan*, they sailed for home, with full holds, after pillaging the big Portuguese ship *St. Thomé*. The *Red Dragon* and *Hector* arrived at Bantam, Java, December 16, 1602, and on February 20, 1603, also sailed for home. Heavy weather was encountered, and the *Red Dragon* lost her rudder, made repairs at sea, was at St. Helena June 16, and anchored at the Downs September 11, 1603, after a voyage of some two years and seven months. We are told that on this first adventure into Eastern waters, friendly relations were established with the native ruler of Acheen (or Achin) in Sumatra and a trading station built and that the fleet of four ships returned to England "richly laden with spices and silks," which included the Eastern goods (950 packs) looted from the *St. Thomé*. The various spices, which included cinnamon, were reported to include 1,030,000 pounds of pepper. The merchants who had invested their money in this enterprise, it is said, "made 95 per cent on their capital."

E. Keble Chatterton, the English marine historian, in eulogizing Capt. James Lancaster (who had previously cruised in Eastern waters) for his successful management of the British East India Company's pioneer voyage to the East Indies and the profitable outcome, void of disaster, has written:

We see Lancaster standing out magnificently as a cool, resourceful, self-sacrificing leader of men, for whom we cannot help having the highest admiration. These Elizabethans were very far from perfect. They were guilty of some abominable and atrocious acts of sacrilege on occasions: their hatred of the Portuguese and Spaniards knew few bounds. They imagined that might on the sea was right,

and honesty was deemed not always the best policy. But among their virtues they were the very opposite of cowards. They knew how to bear all kinds of pain with a courage and resignation that are to be extolled. And if things went against them they knew how to die as bravely as they had fought and striven.

In late March (Lady Day) of 1604, the English East India Company sent out the same four ships that it had used on its pioneer voyage, and their destination was Bantam, Java, where they arrived December 20 after a passage of some nine months. This expedition required a capital outlay of £60,000, of which, it is said, "only £1,142 was spent in goods." During this adventure, the English encountered a great deal of opposition from the Dutch and the newly incorporated (1602) Dutch East India Company. The *Red Dragon* and *Ascension* proceeded to the Moluccas (Spice Islands) before sailing for home, and the *Hector* and *Susan* were sent home to England about eight months before the other two ships finally left Bantam. The *Susan* was lost on her homeward run, but notwithstanding

this fact and the difficulties encountered, it was reported that the profits "were just under 100 per cent" on the capital invested in the enterprise.

The third adventure of the English East India Company was planned somewhat differently. The squadron consisted of the two well-armed trading ships *Red Dragon* and *Hector* and the little *Consent* of 105 tons. The sum of £53,000 was subscribed for the expedition, of which £7,280 was expended in merchandise to take out. The *Red Dragon* and *Hector* left port together March 12, 1607, and the Downs on April 1. In the Indian Ocean, the ships separated. The *Red Dragon* continued to Sumatra and Java, while the *Hector* made for Surat, north of Bombay, and was the first ship of the English East India Company to touch at an Indian port. Captain Hawkins of the *Hector*, with a letter from King James I of England addressed to the Great Mogul, went to Agra to interview that potentate, while he sent his ship on to Bantam, Java, to trade. The Great Mogul treated Captain Hawkins courteously, but the jealousy and antagonism of the Portuguese operated ultimately to drive Captain Hawkins out of the country. The *Red Dragon* reached England in due course, with a good cargo, and upon the arrival home on May 9, 1610, of the *Hector* from the Moluccas and Bantam, the expedition terminated; this third East India Company voyage was a great financial success and yielded "a profit of 234 per cent" to the merchants who risked their money in it.

Notwithstanding the success attending the ventures of the East India Company, it was handicapped in obtaining suitable tonnage for its operations because of the shortage of available ships in England and the high prices being asked by their owners for the few ships that could be acquired. At the commencement of the seventeenth century, England was not an ocean carrier, so the East India Company felt compelled, in the interest of economy and efficiency, to build its own ships of the size and type desired; therefore, it leased a yard at Blackwall, or Deptford, in 1607 and built there the big *Trade's Increase* of a reported 1,100 tons and the *Peppercorn*. In 1608 the company had a run of bad luck when both of its trading ships, in an unfortunate expedition, were wrecked. While its big East Indiaman *Trade's Increase* was building in 1609, it felt the need of new capital and greater powers and benefits to attract it (even though the original charter granted had still six more years to run); so the company petitioned James I for an extension that would give it monopolistic privileges unlimited as to time and warrant the investing by gentlemen-adventurers of their money in an enterprise aimed at overcoming the activities of the Portuguese and Dutch in the East Indies and bringing prosperity through trade and privateering to England. The marine power of foreign rivals had to be met, it was said, by greater force, and this James I evidently recognized, as he renewed the company's original fifteen-year charter and made it operative "forever," provided the number of merchant-adventurers was increased to 276; but the Crown reserved the right to repeal the company's charter, by giving three years' notice of its intent, if it was found that the rights granted were not proving profitable to the realm.

It would seem that the English East India Company was over-ambitious when in 1609 it constructed its mammoth East Indiaman, which was by far the largest merchantman of any kind that had been built in Britain; but the company was probably influenced in its ideas of size by the Portuguese and they in turn by the Indians themselves, who had built and used big ships quite successfully in trading. In the late sixteenth century, powerfully armed English privateers, or privately owned men-of-war, had fallen in with two Portuguese East Indian carracks, or galleons, homeward bound from Goa (on the central west coast of India). One of them, the *Santa Cruz*, was destroyed by fire, but the other, the *Madre de Dios*, was taken into Dartmouth, where her tremendous size and the value of the ship and cargo made a great sensation. The English completely surveyed this wonderful vessel and reported that "she was no less than 1,600 tons" and measured 165 ft. long, 46 ft. 10 in. wide, and drew at the time of survey 26 ft. of water, although when she left Goa she was presumably drawing as much as 31 ft. She had seven decks at the stern, the height of the mast was

121 ft., and the length of the main yard was 106 ft. She was armed with 32 brass guns and had about 650 souls aboard. Her holds were full of valuable cargo, consisting of spices of all kinds, silks, calicoes, carpets, damasks, textiles, etc., hides, Chinese ware, ivory, and in addition many precious stones and pearls. It required ten sizable English coasting vessels to freight the vessel's cargo from Dartmouth to London.

Compared with the Portuguese-Indian ship *Madre de Dios*, the much-vaunted big English-built East Indiaman *Trade's Increase* was not such a very large vessel, but she was tremendous for an English shipyard to build and for Englishmen to sail in commerce. She is referred to in some records as of 1,100 tons and in others as 1,209 tons and was described as "fully twice as large as the *Red Dragon*" (heretofore the East India Company's largest vessel). When the *Trade's Increase* was launched on December 13, 1609, James I, members of the royal family, and a retinue of nobles attended the ceremony and were entertained on board for dinner when the ship was afloat. It is evident that the *Trade's Increase* was a clumsy, unwieldy ship, top-heavy and unlucky. Under the command of Sir Henry Middleton, she sailed in April 1610 on what was the English East India Company's sixth expedition, and the voyage was planned to Surat on the west coast of India, where she was to pick up calicoes to be used in sale or barter at Bantam and the Moluccas. But Middleton, after rounding the Cape, headed for Aden and, leaving the *Peppercorn* there, sailed in the *Trade's Increase* for Mocha at the southern end of the Red Sea. In November 1610, he went badly aground, and the ship sustained injuries. Middleton got into trouble with the Arabs and was taken prisoner and detained several months. When released, he took his ship, which had been lightened and refloated, to Surat with the *Peppercorn* and the small *Darling*, but on his arrival there on September 26, 1611, found a Portuguese squadron of seven ships waiting outside and a large force of smaller vessels waiting inside the bar to prevent the "English interlopers" from trading with the Indians. Middleton was required to bow to the vastly superior force of the Portuguese, and as Hawkins had lost favor with the Great Mogul, the Englishman and his colleagues, put ashore and left behind by the *Hector* in late 1607, boarded the *Trade's Increase*. The Middleton squadron again put to sea, crossed the Bay of Bengal, and contacted another East India Company fleet of three ships (the *Clove*, *Thomas*, and *Hector*), under Captain Saris, that had sailed from England as a separate expedition somewhat over a year after the Middleton squadron had departed.

Middleton and Saris agreed to engage in privateering in the Bay of Bengal. They had been sent out by the company to obtain cloths and calicoes in India to exchange for desired products at Eastern ports, so what they were not permitted to obtain by peaceful trade, they would obtain by force of arms and by either robbery or compulsory sale at the buyer's own price. As the English ships' holds were filled as a result of this forced trading, the vessels sailed to the East, and when the *Trade's Increase* arrived at Bantam, it was evident that the ship needed repairs below the water line, so she was careened. She fell over on her side and out of control, became a total loss, and was burned by the Javans. We read: "When Sir Henry Middleton heard the news of the loss of his famous flagship, the pride of all the seas, he was so heart-broken that he died. Thus both admiral and flagship had perished; it had been a calamitous voyage." The *Peppercorn* had a most dreadful passage home, laden principally with spices; she leaked badly most of the way, was cranky, had accidents galore, caught fire, lost much canvas, and had sickness and fatalities aboard and a mutinous crew. By bad navigation, she made a landfall well up the Irish Sea and had much difficulty in getting her rich cargo to London.

Notwithstanding the loss of the *Trade's Increase*, the Middleton expedition (and the company's sixth voyage) was reported to have yielded a profit of 121 per cent, and Saris' voyage (expedition No. 7) was said to have earned 218 per cent. No wonder it was remarked, "The figures of earnings of the East India Company show the extent to which privateering swells the profits." The average profit made by the first voyages of the East India Company was reported as 138 per cent, the voyages requiring a period of time of from twenty months

to between three and four years. We are also told: "Between the years 1601 and 1612, the profits ranged from 95 to 234 per cent with the exception of the year 1608, when both the ships were lost." However, records show that the ship *Globe* cleared 218 per cent in 1611, and in 1612 it was reported that "the company's three trading ships *Globe*, *Hector*, and *Thomas* earned profits that represented 340 per cent upon the capital invested" and that included in these profits were the results of privateering and bartering (under the muzzle of guns and at arbitrary English prices or exchange values). It is apparent that the English investors were pleased with the financial return on their venture in the early years of the company's operations, for we read that in 1617 "the stock of the company reached a premium of 203 per cent."

David Macpherson, in *THE HISTORY OF THE EUROPEAN COMMERCE WITH INDIA*, comments on the length of time English capital was actually invested in a voyage. The goods from India were sold in England at long credits, and the delays in obtaining final accounts from factors in the East resulted in the accounts of a voyage not being "finally adjusted under six or eight years." Macpherson says: "Taking the duration of the concern at a medium of seven years, the profit appears to be somewhat under twenty per cent. per annum." Chatterton says: "The current rate of interest in those days was about 8 per cent., so that 20 per cent. could not be deemed for that time a very abnormal rate of remuneration when we consider the amount of enterprise required at the outset, and the vast risks which necessarily had to be run."

Prior to 1612, the custom had been to consider each voyage separately, and each voyage had its own subscribers or group of adventurers. This practice, with the duration of the voyages overlapping, led to confusion, competition between the financial backers of expeditions, inefficiency, injustices, and ill-feeling. In 1612 the owners of the different stocks joined together and made one common capital of £740,000. The first joint stock began in the year 1613 and ended in 1617. During this period, twenty-nine ships of the East India Company were employed. By the end of 1617, eight had returned with cargoes, fifteen were still in the East Indies, four had been either lost or disposed of to shipbreakers, and two had been captured by the Dutch. The biggest East Indiamen at the close of this period were the *Royal James* (1,000 tons), *Anne Royal* (900 tons), and *The New Year's Gift* (800 tons). The Dutch had established their influence and authority in much of the Indian archipelago when the English, in 1610-1611, planted their first factories on the mainland of India at Masulipatam (Bandar) and Pettapoli in the Bay of Bengal. Disputes between armed traders of England and Holland led in 1623 to the "Massacre of Amboyna," when the Dutch governor tortured and executed the English residents, charging them with a conspiracy to seize the fort. The trade war, with its armed clashes, led in Cromwell's time to the English East India Company's tacitly admitting the Dutch claims to a monopoly of the trade in the Far East, and the company confined its operations to India and adjoining countries.

On February 1, 1612, Captain Best sailed from Gravesend on the Thames to establish an English factory at Surat. He arrived at the Swally, the roadstead for Surat, on September 5 after a passage of some seven months, and a Portuguese fleet soon appeared to drive out the hated English. Best was a fighter and a tactician of merit, and in the fight that ensued the Portuguese were defeated. The Great Mogul had promised to give the English every opportunity to trade provided they could drive out the hated Portuguese, whose Indian system, which had amounted to piracy, oppression, and native ruin, was "rotten to the core." The Indian potentate kept his word, and the English set up factories, which, needing protection from both the Portuguese and pirates, caused the nucleus of an English Indian army and the Bombay (Indian) navy to be formed. The Portuguese, with their hold on Ormuz and the Persian Gulf (the shipping of which they had monopolized for a century), continued to harass English shipping; but by 1622 the Portuguese, as a result of defeats at sea, were driven out of this region, and Ormuz was destroyed. By 1654 the Portuguese were compelled by force of arms to agree, in a treaty with Cromwell, that the English should have

the right to reside and trade in all their Eastern possessions. The British Government, following the company's defeat of the Portuguese at Surat and the Persian Gulf, bled the East India Company, and arbitrary assessments, based on trumped-up claims, were followed by demands for loans, carrying no interest, made by the commissioners of the navy and then by the government itself. After the treaty with the Portuguese in 1654, Cromwell demanded a loan of £50,000 and another of £10,000 from the company (without interest). In 1657, however, he renewed the East India Company's charter and revoked a trading license granted by Charles I to a rival association (the Assada merchants). Under Charles II, the company grew in power and in 1689, after the three presidencies of Bengal, Madras, and Bombay had been established, the ruling career in India of the English East India Company began, with its chartered rights, which had been granted by the Crown during the years, to acquire territory, coin money, command fortresses and troops, form alliances, make war and peace, and exercise both civil and criminal jurisdiction.

The English gained their first foothold in India, as far as actual possession of land and the building of fortifications to protect it were concerned in 1639, when they took a location on the Coromandel coast, near Madras, and Fort St. George came into being. This was not at the time where they wanted to be, as they desired a footing at the head of the Bay of Bengal at the entrance to the Ganges basin; but it was 1697 before Fort William (Calcutta) on the banks of the Hooghly was built and the English had "a foot actually inside the door." However, the Dutch and the French had entrenched themselves in that desirable area. The French had seized Pondicherry on the Indian east coast in 1674 (ten years after the French East India Company had been formed), and it and Madras were useful primarily as marine bases controlling the approaches to the Ganges basin. Fort St. George (Madras) was built and maintained as a real fortress of power; whereas the English succeeded in demolishing the works built at Pondicherry every time the French fortified it. As England became stronger at sea, it drove out the Dutch and later the French and, in 1765, secured the province of Bengal by force of arms, promising to pay tribute to the Mogul—but subsequently ignoring this obligation. Henceforth, Bengal was the most valued possession of the British in India. Surat (some two hundred miles to the north of Bombay and said to have been the most populous city in India at the time) was the site of the English East India Company's first protected factory, or trading post, built in 1613 after the defeat of the Portuguese fleet. Bombay itself, with its fine harbor, was acquired by the English from the Portuguese in 1662 by treaty, and it was originally desired and held by the English to keep it from falling into the hands of the French. Surat was nominally ruled by its Indian nabob, but following 1800 it was controlled by the East India Company.

As Capt. Arthur H. Clark has said:

The East India Company [of Britain] had its troubles, which were many and great, yet it increased in power, wealth, and strength, until at the close of the eighteenth century it had become possessed of a large portion of the continent of India, maintaining its own armies, forts, palaces, Courts of Directors, Boards of Council, Governors, and Typeans [head merchant of a trading house;

same as a "Hong" in China]. Eventually, this Company became the ruler of more than one hundred million human beings, not naked savages, but civilized men and women, many of whose ancestors had been learned scholars and merchant princes long prior to the invasion of Britain by the Roman, Dane and Saxon.

The British East India Company made landings in India presumably to make money by trading with the natives, but whereas the company was willing to trade, the difficulty from the first was to find goods wanted by the natives to form the basis of barter. David Macpherson, in *THE HISTORY OF THE EUROPEAN COMMERCE WITH INDIA* (London, 1812), has said:

The Hindoo, born and desiring to pass his life in the same country, . . . whose food is rice, whose drink is water or milk, to whom wine or strong drink is an object of abomination, and who, if he strictly acts up to his religious principles,

would sooner lay down his life than put any living creature to death or permit a morsel of animal food to enter his mouth, whose warm climate renders any clothing, beyond what decency requires, intolerable, and whose light clothing is made by him-

self and his family from the cotton produced in his own fertile fields, whose customs and religion, to which he adheres with the most inflexible constancy, render utterly inadmissible many articles of

enjoyment and comfort, which our habits have rendered almost necessary to our existence, can never have any desire to acquire the produce or manufactures of Europe.

But the British, if they could not make the Indians buy British-made goods, forced them to buy British military and political services. Much has been said about the Europeans' taking "the benefits of civilization into India," but this is false. The Europeans in India, including the British, represented the power of the sword, and the East India Company's reason for existence was to operate in some way or other at a profit. Gradually, the prime business of the East India Company became the collecting of taxes, or "rents." It can be said that the company planted itself in India not to trade but to collect tribute, and of this the British Government became thoroughly cognizant in the seventeenth and eighteenth centuries. The East India Company's employees in India were neither merchants nor industrialists but principally mercenary British-born soldiers (imported young and trained by the company in India), with the balance civil servants. It can be said that India traded primarily with China, and the East India Company's prime import into Britain was Chinese tea; whereas its exports from Britain to India consisted almost solely of courage and audacity (i.e., men rather than merchandise). In regard to the much-vaunted integrity of the British East India Company and the "Honourable John Company," it certainly had on the surface a fine record in China, but all the time it was surreptitiously undermining Chinese law and flooding the country with opium that was contraband. Edmund Burke quite evidently did not think well of the British Government's fostered and encouraged East India Company, and in the House of Parliament, during a speech on Fox's East India Bill in 1783, he sought to prove that the company had betrayed every ally that it ever made from the Himalayas in the North to Cape Comorin (the extreme point of the peninsula of India) in the South and had broken every treaty that it ever made. He further said:

In effect, Sir, every legal, regular authority in matters of revenue, of political administration, of criminal law, in many of the most essential parts of military discipline, is laid level with the ground; and an oppressive, irregular, capricious, unsteady, rapacious, and peculating despotism, with a direct

disavowal of obedience to any authority at home, and without any fixed maxim, principle, or rule of proceeding, to guide them in India, is at present the state of your charter-government over great kingdoms.

Much has been written of the British conquest of India, and the best that can be said about it is that Englishmen were infinitely more human and decent in their treatment of the Indians than were the Portuguese and far better than either the Dutch or the French, who combated them for control of the vast empire. From the first, however, the English felt superior to the natives and constantly showed it, and many of them were as grasping as they were intolerant. The Englishman's opinion of the Hindu in the seventeenth, eighteenth, and nineteenth centuries was very low, but possibly few prominent and traveled Britishers high in the nation's councils were as rabid in their poor opinion of the Indians as was the conqueror of Napoleon. The Duke of Wellington (1769-1852) said that he had never met a Hindu with a single good quality and added that he thought the Mussulmans (a good part of the population of India) even worse. He maintained that there was "more perjury in the town of Calcutta alone, than . . . in all Europe taken together."

The first English-built factory where the East India Company ships went to trade east of the Cape of Good Hope was located at Bantam on the island of Java. This remained the headquarters of the company in the East until 1638, when Surat (located in the northwest of the peninsula of India) had developed so much, thanks to the concessions made by the Great Mogul, that it replaced Bantam in prominence, and all other English trading posts were made subservient to it. Later, Calcutta, with its Fort William on the Hooghly, became the center of the East India Company's wealth and rose to pre-eminence; for the mouth of the Ganges is the gateway into those plains from which the English revenues were derived, and Calcutta was built just where it is because the Hooghly was the door and Fort William the

lock that Lord Clive, after securing Bengal for the English East India Company, planned "to shut out future invaders and lock the door in the face of any who would imitate him."

In 1681 the East India Company had a fleet of thirty-five ships ranging in size up to 775 tons. The unfortunate experience with the "big ship" *Trade's Increase* had caused the company for a long term of years to prefer the operation of more moderately sized vessels. At this time, it was reported that the company was paying £60,000 a year in customs, "carrying out to India about £65,000 worth of lead, tin, cloth and stuffs each year and bringing back raw silk, pepper and other goods of the East." By the year 1683, the company's reported profits were such that its £100 shares were selling for five times over par (£500), and a boom was under way. During the years 1682-1689, no less than sixteen large East India-men, reported as from "900 to 1,300 tons," were constructed, and all were well armed, being in fact constructed as freight- and passenger-carrying privateers, or privately owned men-of-war built for trading. The extent of the armament carried probably is exaggerated by reports, for it was said that in 1677 over thirty of the company's ships of from 300 to 600 tons apiece mounted from 40 to 70 guns; nothing is said about the caliber or the setting of the guns, and most probably the records are confused between the number of "piercings" of the ships' sides for guns and actual mountings. It is also possible that many of the gun ports showing on a ship's sides were not "piercings" but merely paintings to imply gun power that did not exist. On a commercial voyage, when loaded deep, the guns were run inboard, and the ports tightly shut, braced and caulked, but guns on the 'tween decks seriously interfered with freight stowage (and passenger accommodation).

Some idea of the size and fighting power of the English East Indiamen during the latter part of the seventeenth century can be gleaned from the following published data of company ships captured by the French in 1694:

| Name of Ship | Tonnage | Guns | Men | Name of Ship | Tonnage | Guns | Men |
|------------------------|---------|------|-----|--------------|---------|------|-----|
| DEFENCE | 750 | 50 | 150 | RESOLUTION | 650 | 40 | 130 |
| PRINCESS OF DENMARK | 670 | 40 | 133 | SUCCESS | 400 | 32 | 80 |

The guns reported averaged one for each 15 tons and the complement about 3 men per gun. During the same year, the French captured a fifth English East Indiaman, the *Seymour* of 500 tons, but her armament and complement were not stated, although they were probably about 34 guns and 100 men.

Data in regard to the size, armament, and complement of the ships that the East India Company was hiring for its service about the year 1730 are provided in the following list of twenty-four vessels, compiled from official documents. The average size of these ships was 460 tons; they averaged somewhat over 30 guns each (or about 1 gun for each 15 tons), and the average complement was 92 men per ship, or about 3 men per gun (or 1 man for each 5 tons). Evidently, the ships did not carry enough men to sail the ship and fire the guns on both sides at once.

| Name of Ship | Tonnage | Guns | Men | Name of Ship | Tonnage | Guns | Men |
|-----------------------|---------|------|-----|----------------------|---------|------|-----|
| PRINCE AUGUSTUS | 495 | 36 | 99 | LETHIEULLIER | 470 | 30 | 94 |
| WALPOLE | 495 | 32 | 99 | STRETHAM | 470 | 30 | 94 |
| LONDON | 490 | 34 | 98 | PRINCESS OF WALES | 460 | 30 | 92 |
| MARY | 490 | 34 | 98 | HARTFORD | 460 | 30 | 92 |
| DERBY | 480 | 32 | 96 | HARRISON | 460 | 30 | 92 |
| DAWSONNE | 480 | 32 | 96 | MACCLESFIELD | 450 | 30 | 90 |
| PRINCE WILLIAM | 480 | 30 | 96 | CAESAR | 440 | 30 | 88 |
| DUKE OF CUMBERLAND | 480 | 30 | 96 | MIDDLESEX | 430 | 30 | 86 |
| GEORGE | 480 | 30 | 96 | FRANCES | 420 | 30 | 84 |
| OCKHAM | 480 | 30 | 96 | BRIDGWATER | 400 | 28 | 80 |
| DEVONSHIRE | 470 | 30 | 94 | AISLABIE | 400 | 26 | 80 |
| LYELL | 470 | 30 | 94 | CRAGGS | 380 | 26 | 76 |

It is apparent that when Britain declared war against Spain in 1739, merchantmen at times obtained letters of marque. There is a record that in that year "The United Company of Merchants of England trading into the East Indies" (which was the official name of the English East India Company at the time) petitioned the government for "Letters of Marque or General Reprizals against Spain" for the *Royal Guardian*, a ship of 490 tons carrying 98 men and 30 guns, and for other vessels of its fleet. These requests were granted, and we are told that these letter-of-marque East Indiamen gave a good account of themselves during the war and were equal to the enemy's frigates in fighting power.

It will be noted that all of these East Indiamen of the 1730's were under 500 tons, and it was said, "Between the years 1748 and 1772 all the company's merchant ships are of one size—499 tons." This refers to long-voyage traders, for occasionally smaller ships were built; but apparently all the company's ships for a long period of time—under what became known as a decadent era—were kept under 500 tons. It would seem that the reason for this was to save certain expenses of operation through additional complement such as carrying a chaplain, required by British law for all ships of 500 tons and over. It is surprising that a wealthy concern such as the English East India Company would let such relatively trivial matters affect the size of its ships for a long term of years. But the English were always narrow-minded and shortsighted in such matters, and for centuries they let their formula for tonnage, which penalized beam, cause them to build badly designed, narrow, cranky ships.

During the wars with France in the latter part of the eighteenth and early nineteenth centuries, many East Indiamen were used by the British Navy as men-of-war. In 1786, when the new type of big Indiaman was introduced, it was argued that these ships "would serve both for trade and war" and that guns could be carried on a lower, or third, deck. However, mercantile ship operators objected, stating that piercing of the hull should not be made so low and near the water on a vessel engaged in commerce because of the probability of damage to cargo through leaking ports; moreover, the ports could not be opened and the guns worked except in smooth seas and favorable weather. It was also said that 56 guns could be mounted on the upper and middle (or gun) decks alone, and a greater number than this was not desired and, moreover, could not be worked on any ship making any pretension to be a commercial vessel. At the time, armed merchant ships were carrying 6-, 9-, and 12-pounder guns, and it was proposed to arm the new East Indiamen with 9-pounders on the gun deck in time of peace and change them to 18-pounders in time of war.

Gabriel Snodgrass, the company's surveyor at that time, said that an Indiaman could be made a potential 64-gun ship, but this statement was not substantiated in actual reconversion during the wars, although the one exception was the Indiaman *Royal George*, which in 1808 was equipped with 62 guns and given a complement of 500 men (including some troops acting as marines). In 1807 this ship, in merchant service with a complement of 160 men, had carried 500 soldiers from Portsmouth to Madras. When the East Indiamen *Calcutta* and *Lady Castlereagh* of 800 tons each were armed for war in 1804, their total armament was 40 guns per ship, and the big 1,200-ton ships such as the *Earl Camden*, *Wexford*, *Brunswick*, and *Exeter* mounted from fewer than 40 to no more than 48 guns. When such ships were purchased and taken into the British Navy as frigates, they never carried more than 54 or 56 guns, and it was said, "No attempt was made to give these ships a lower battery and so convert them into two-decked men-of-war [which means guns on three decks]."

At the close of the eighteenth century, the standard 1,200-ton East Indiaman showed 14 gun ports on each side on the middle, or gun, deck and 13 ports a side on the upper deck—a total of 54 broadside guns per ship; but several of these piercings were not filled with guns, and the number actually mounted depended on war conditions. Usually, from 30 to 36 guns were carried, and we are told, "When an owner wished his ship to bristle with artillery he could send 48 guns aboard, . . . and this was done occasionally." In 1806, after a hard fight lasting four and a half hours, the *Warren Hastings* was captured by the

French frigate *Piemontaise*, which mounted 46 carriage guns as well as swivels and novel bomb-throwing devices and carried 385 men. The *Warren Hastings* was described by her captor as mounting "48—18-pd. guns," but actually some of these guns were in the hold. Of the 36 guns in position, most were of inferior short model, many unworkable, and the total complement was 138 officers and men all told, the best of the crew having been impressed by the Royal Navy.

In 1796 the owners of the *Nottingham* proposed to equip her with twenty-eight 12-pounder guns on the gun deck and fourteen 18-pounder carronades on the upper deck, making forty-two guns in all. As the war continued, it was found that some of the guns should be placed on the upper deck, so that the men working the guns would form a nucleus of men on hand to resist any attempt of the enemy to board the ship. In 1805, Robert Wigram was so impressed with the need of having men on deck to resist boarding that he went so far as to propose that 500-ton ships of the company should mount all their guns on the upper deck, so that the men "will be together to fight the guns, to work the ship, and resist boarding." He argued that dispensing with piercing the side of the ship for gun ports on the middle (or generally called "gun") deck would result in less damage to cargo and afford much more stowage space. It appears, however, that Wigram's suggestion was disapproved by a committee primarily because it was felt that the weight of a ship's entire armament on the upper deck would make her top-heavy.

The Court of Directors of the East India Company, following the capture of seven of its ships during the period 1793-1801, was of the opinion that these "excessive losses" were due to Indiamen's going to sea inadequately armed and being deficient in both the number and the caliber of guns mounted. On September 23, 1801, therefore, it was ordered that henceforth "ships of about 1,200 tons burthen should carry thirty-eight pieces of ordnance, the whole of which should be eighteen-pounders. That not more than twenty-six of these pieces should be mounted in the principal battery [on the gun deck], the remainder to be carried on the upper deck." At this time, the company decreed that all the guns carried on its ships of 800 and 1,200 tons be of one caliber and decided on 18-pounders, as it had been found that lighter guns were inadequate. Whereas the 1,200-ton ships were equipped with 38 guns, the 800-ton ships were supplied with 32 guns (22 on the gun deck and 10 guns on the upper deck)—all 18-pounders; the 600-ton and 500-ton ships were equipped with 12-pounder guns, the former class carrying 18 and the latter 16 guns, respectively. However, it was later found that at times exceptions had to be made to suit the peculiarities of certain ships. Some ships, sailing without convoy, carried many additional guns, but the records of East Indiamen in convoy during the first decade of the nineteenth century show a great variability in the gun power of ships of similar size.

Some extravagant claims have been made of the armament carried by East Indiamen. Pictures of the *Earl of Balcarres* show her with ports that, if used, would give her an armament of 92 guns; but all the lower deck ports were painted dummies, and others were also counterfeit. Moreover, many of the upper and some of the main deck ports were empty, as the ship never carried more than a complement of 130 men, of whom only 78 were either able or ordinary seamen. This number would have been inadequate to work and fight properly a ship of 38 guns—the theoretical standard East India Company armament for a ship of her size and type.

The prosperity of the East India Company encouraged competitive private trading by English merchants, and "interlopers" challenged the right of the Crown to grant a trade monopoly. Judge Jeffreys, in 1683, in the *Thomas Sandys* case, upheld the royal prerogative; but "interloping" continued and gained in volume and power through organization, and in 1694 the House of Commons declared that "all the subjects of England have equal right to trade to the East Indies unless prohibited by act of Parliament." This decision led to the Act of 1698, which set up a new East India Company in consideration of a very substantial loan of money to the state. The old company, by its subscription to the government loan,

became the dominant factor in the new East India Company, and in the first decade of the eighteenth century the old East India Company interests and organized rivals were amalgamated under government sanction, with the consolidated company's loaning the nation a vast sum of money without interest and obtaining exclusive privileges. Throughout the century, the English Parliament resorted to the practice of "milking" the East India Company from time to time in order to obtain needed funds cheaply to carry on the business of government, wage wars, and extend the empire, etc.; in return, the company's term of monopoly was extended (to 1766 and then to 1783) when the company, in 1742, loaned the government £1,000,000 required to wage war on France. After Clive's victory at Plassey in 1757 made the East India Company a ruling power in India, the British Government decided that it should have control over the territories acquired. Lord North's Regulating Act (in 1773) and Pitt's India bill (in 1784) created first a governor-general and council, approved by the Crown, and later a board of control as a department of the English Government to exercise political, military, and financial superintendence over the British possessions in India, and the direction of Indian policy passed from the East India Company to the British governor-general in India and to the government ministry in London. In 1813 a bill was passed that gave the government's board of control authority over the commercial transactions of the East India Company and abolished its monopoly of Indian trade, and an act of 1833 terminated the company's monopoly of trade with China. The East India Company, henceforward, ceased to be a trading concern and exercised only administrative functions, and dividends on its stock representing Indian possessions were made a charge upon the Indian revenue. The Indian mutiny of 1857 caused the entire transference of the administration of Indian affairs to the British Crown in August 1858. It was felt in England that a system of administration that would permit of such a catastrophe could no longer be tolerated, and the East India Company passed out of existence after an eventful career of well over two and a half centuries.

According to Chinese legend, the virtues of tea were discovered as early as 2737 B.C. Its use in China in the ninth century is known from Arab sources. An agent of the English East India Company first wrote of it in June 1615, and around the middle of the seventeenth century the English commenced to use tea, receiving their supply from Java. Pepys's diary makes mention that on September 25, 1660, "I did send for a cup of tee, a China drink of which I never had drunk before," which proves the novelty of tea in England at that date and its reported origin. After the British were driven out of Java by the Dutch in 1686, the East India Company purchased in Madras and Surat tea brought there by Chinese junks. Tea, which gradually became by far the largest item of trade handled by the East India Company ships, was first imported by the company (in a very trivial and insignificant amount) in 1667, but by the end of the seventeenth century about 20,000 pounds per year were being imported into Britain. E. Keble Chatterton, the English marine historian, says: "It was always reckoned that an 800-ton ship would be able to bring to England 750,000 lbs. of tea and a 1,200-ton ship nearly 1,500,000 lbs. And the increasing use of this beverage during the eighteenth century was to make the Indiamen even more essential ships than before. . . . By the year 1765 the Company had brought home and sold 5,000,000 lbs. of this commodity; by 1784 the average was about 6,000,000 lbs., the next year it was more than doubled, and by the end of the century it was nearly 24,000,000 lbs. per year." By the end of the eighteenth century, consumption of tea in England exceeded an average of 2 pounds per capita per annum, and the business, being a monopoly of the East India Company in the British Empire, was a very profitable one. The company sold 27,000,000 pounds of tea in 1803 at a price of nearly £4,250,000 sterling. In 1808, there was a slight recession of volume to 25,000,000 pounds, but the total realization from sales was the same. The year 1803 was the high-volume year in tea sales for the first decade of the nineteenth century. It fell as low as 22,000,000 pounds one year and averaged about 24,000,000 pounds per year; however, while the volume in pounds of tea sold per year varied but little, the total sales price varied still less. Parkinson, in *TRADE IN THE EASTERN SEAS*, referring to the relative importance of the various articles imported by the British East India Company, says:

From 1793 to 1810 the total sale amount of India and China goods was a hundred and three millions sterling. Of this sum, more than half—fifty-five millions, to be exact—was the sale price of tea. Twenty-five millions was paid to the Company for piece goods, muslins, chintz and the rest. Raw silk from Bengal and China accounted for seven millions, and the rest of the sum was made up from the sales of sugar, indigo, nankeens, salt-

petre, pepper, Chinese crockery, coffee and spices. The yearly sale amount on all these goods was remarkably steady, as was also the apparent profit. During the period 1801-11 the total cost of the goods each year, with freight and customs included, would be between four and four-and-a-half millions, the sale amount usually close on six millions, the apparent profit averaging about a million and a half.

With what the East India Company imported into China from India (in 1809 woollens [from England] represented 90 per cent and cotton and piece goods, lead, and tin some 10 per cent of a total value of a million pounds sterling), the company bought tea. As Parkinson says: "Any other imports [into the British Empire] from China shrank to nothing in comparison with the tea, on which the whole of the Company's trading activities centered. Only with China could there be any real exchange of commodities. In India the Company governed and took tribute when it could. Its trade was with China, and it was a trade in tea." It can be said that opium should be included in the company's sales to China, for the whole crop was grown in India by the company primarily with the intent of selling it in China; but the "Honourable John" Company, "for the sake of decency or safety," sold this entire crop in India at private sale, and the merchants who bought the opium had the responsibility of smuggling the contraband into China.

When the company lost its China trading monopoly and ceased its maritime trading operations in 1834, it sought to develop tea-growing in India. As early as 1788, the cultivation of tea in suitable regions in Bengal had been considered, and in 1820 the wild tea plant was found in Assam. In 1834 the directors of the East India Company, satisfied that tea was indigenous in Upper Assam, instituted an experimental establishment in Assam for cultivating and manufacturing tea. In 1840, Indian tea was offered for sale at public auction in Calcutta, and that same year the Assam Company was formed to take over the "tea garden" of the East India Company. The Dutch tried to grow tea in Java as early as 1826, using the Chinese plants and methods; the results were highly disappointing, but later, using Assam seeds and methods, they achieved great success. Formosa began to grow tea in 1860, and Ceylon since 1876 has given serious attention to it and grows fine Indian tea in big quantities. It is of interest to note that whereas China tea was the prime source of the East India Company's revenue from sales for well over a century of time and the principal article of trade between Britain and China in the clipper ship days and throughout most of the nineteenth century, yet in 1927, with 416 million pounds of tea imported into the British Isles, only 10½ million pounds (or only 2½ per cent) entered from China (including Hong Kong and Macao), while 342¼ million pounds (or 82.3 per cent of the total) came from British India (including Ceylon), with the balance of some 15.2 per cent from Java, Sumatra, and other Dutch possessions, etc.

It is of interest to note that the East India Company, through its expert supercargoes, knew about the practices of Chinese tea growers and the picking of the crops—the best in the spring (May), a fair quality with a record crop in the early summer (June), and a decidedly inferior "clean-up" harvesting (or third crop) of large and old leaves in the late summer (August). All of these crops, when dried, packed, and transported to market, reached Canton between October and the next February. The company also well knew that tea should be consumed when young or fresh and that it greatly deteriorated in storage. Yet the policy of the company was to keep a year's requirements of tea ahead in England in warehouse and regulate its shipments to consumers so that there would be no apparent surplus stocks overhanging the market and no quantities available to consumers that would have a tendency to weaken prices. After possibly several months' time spent in China during drying, packing, and sealing in chests, the tea was brought from the Canton River to London on an East Indiaman, which probably required five or six months to make the passage;

following arrival and discharging at London, the tea was stored in warehouse, where, we are told, it "would lie for eleven months at least before being put up for [wholesale] sale," and during all these months (sixteen to eighteen or more) that it was in the company's hands, it was known to be deteriorating in quality. The tea in the company's warehouses, said to be in reserve, had never to be drawn upon because of any catastrophe such as the failure of a crop or inability of the ships in the China trade to transport it; but English consumers, because of the company's rules governing its handling and sales, were never permitted to purchase a high-grade quality tea—but only an old tea that had deteriorated.

After the China trade monopoly of the East India Company was broken in 1834, the competition of British merchants and shipowners in the China market gradually gave British tea merchants and consumers a chance to know the advantages of young tea leaves promptly delivered to market, and the demand came for fast ships of the clipper type to take new teas to the discriminating London market. The United States-built and owned clipper *Oriental*, closely following the opening of British ports to foreign shipping, sailed from Whampoa the end of August 1850, taking the first shipment of new teas for the year. Because of her known speed, she obtained a freight rate of £6 per ton of 40 cubic feet against the prevailing rate of £3-10-0 per ton of 50 cubic feet being paid the British ships. Sailing against the monsoon, the *Oriental* made a passage of 97 days and reached London December 3, 1850, so that English connoisseurs of good teas had the pleasure of drinking a product made from the first crop of young tea leaves only seven months from the plant instead of some two years or more, which was the national custom during the days of the East India Company's monopoly.

It has been implied by historians that the Blackwall shipyard, said to have been founded about 1588 and soon afterwards known as "The East India yard" and owned by the company itself, was the only large shipyard in London and vicinity (and in England) during the seventeenth and eighteenth centuries and the days of the East India Company, but such is far from the truth. Whereas the need of suitable tonnage by the East India Company and that company's direct interest in the construction of such ships on the Thames do mark "the beginning of the building of great ships in England," this construction was not restricted to any one yard except for a relatively brief period. Between 1607 and 1615, it has been said, the East India Company built, in either its leased or owned yard, "more ships than any other trade," and by 1621, we are told, "the company owned not less than 10,000 tons of shipping, employing as many as 2,500 seamen." Old records show that, up to November 1621, the company had exported goods from England (principally woollens, lead, iron, and tin) to the value of £319,211 and had purchased cargoes in the East for £375,288, which it sold for £2,044,600; but against this large gross profit had to be charged very heavy costs of operation, including "the high cost of building and upkeep of ships and dockyard," as well as the operating cost of the ships, custom duties, etc., losses at sea, and the cost of trading with a big organization ashore. (In 1621 the company employed 120 factors.) The company had need of a shipyard and dockyard not only to build but also to repair and recondition its ships after their long voyages to India and the East, but we are told that "the yard, with its big staff and facilities, was found in the long run to be so costly that it swallowed up too much of the company's capital."

Nearly every East Indiaman was built on the Thames prior to the end of the company's monopoly, the last phase of which—the valuable trade with China, chiefly in tea—was ended by Earl Grey's Act of 1833; following this, the company ceased to be a trading concern and exercised only administrative functions in India. But there was a score of shipyards on the Thames in 1800 (twenty-two in 1814, with, it is said, "41 building slips and 62 berths for repair in dock"), and about a dozen of these yards built Indiamen—large, small, or of any desired tonnage. When the size of these ships increased to some 1,200 tons, the number of yards capable of building them was lessened, but the larger East Indiamen were being built at the beginning of the nineteenth century at Perry's Blackwall yard, Barnard's at

Deptford, Pitcher's two yards (one at Blackwall and one at Northfleet), Randall's, which grew as Randall and Brent's (Rotherhithe) to have seven building slips, Wells's (Rotherhithe), Batson's (Rotherhithe), Melluish's, Clevely's, and later at Dudman's (Deptford; five building slips) and Curling's. Of all these shipyards, most is known of the old Blackwall yard located in eastern London, well downriver; this yard, from 1776 to 1810, was generally known not as the "East India yard" but as Perry's Blackwall yard, and it had been in the hands of the Perry family since 1693.

The origin of the Blackwall yard is in doubt. It is authoritatively said: "It was founded about 1588 as 'The East India yard' and was originally owned by the company itself. The company's arms were over the gate, and the East India chapel adjoined the yard, which was completed by about 1612." However, the company was not organized until 1599, was not incorporated and given a royal charter by Queen Elizabeth until December 31, 1600, and did not send its first vessels—which were leased and not built by it—to the East Indies until February 1601. It would also seem that the company was not interested in building its own ships and did not have sufficient money to do so until 1607 and that then, because of the exorbitant prices being asked for the hire of the very few suitable British ships available for the trade, it "leased a yard at Deptford," where it built its first two ships, the large *Trade's Increase* (launched December 13, 1609) and the *Peppercorn*. These vessels, in service, proved to have been poorly designed and built. It is also said that the first ship built in the East India Company's Blackwall yard was the *Globe*, "which sailed for India in 1611"; this date agrees more closely with that of 1612, which appears on the old yard gateway, and suggests that the company leased a yard somewhere in Deptford before it purchased its own yard at Blackwall, which apparently had been established many years before it was acquired by the East India Company. A century later, the Blackwall yard was referred to as "the oldest yard in England" and one that had built great ships in the reign of Queen Elizabeth, "which ships were the foundation of Britain's marine power." Elizabeth reigned from 1558 to 1603, and tradition tells us that the Blackwall yard built ships for English gentlemen-adventurers that were a factor in defeating the "invincible armada" of Philip II of Spain, which was sent against England in 1588.

We also read in British marine history: "Even with the carefulness expended in the construction of the company's ships, they became worn out after four voyages; so at the end of twenty years [presumably about 1627] it was decided to give up this expensive yard and to revert to the original custom of hiring ships as they were needed." This practice later led to great abuses. The company's directors built the required ships personally and then hired them to the company, with great profit to themselves. This practice continued until 1708, when the old and new East India companies were amalgamated under government decree and supervision, and by an act of Parliament the directors of the company were prohibited from supplying it with ships; henceforth it was required that ships to be hired by the East India Company should be selected as the result of competitive bidding, with the field open to all Britishers, but all tenders submitted had to be signed by an experienced commander and two responsible owners. This proved to be merely "out of the frying pan, into the fire." The East India service was deemed to require a special type of stalwart ship, and the company insisted that only ships built in conformity with detailed specifications and under a certain form of supervision were acceptable. The supply of available and suitable ships was always small, and they were in the hands of a ring of "insiders" who were known as "the Marine Interest." During much of the seventeenth and all of the eighteenth centuries, the East India Company flew its flag on ships that it did not own (and the practice continued to a great degree until 1834 or as long as the company continued as a marine carrier), and its stockholders were fleeced by the owners of its ships as well as by the British Government.

There were many evils associated with the East India Company's practice of hiring ships. They were leased not for one voyage but for several voyages, the company agreeing

to pay a certain price per ton for a stipulated number of tons, and the prices paid were high. The reported shipbuilder was not the builder at all but merely a businessman who contracted to have a vessel constructed, and he became known as the "ship's husband" and manager. The commander of a ship, during the years, had grown to be an important person not so much as a navigator and disciplinarian at sea but as a businessman. He made money personally in devious ways, so much so that the ship's husband developed the habit of appointing not the best navigator, seaman, and trader for the post of commander of a ship but a seafaring man of means who would pay the best price for the job. Sums of £8,000 to £11,000 were paid during the years 1787-1792 by ship captains to secure appointments, so that they could have the opportunity to make big money for themselves by both legitimate and illegitimate means while they held the command. Occasionally, commands were sold for £6,000, £5,000, £4,000, or even as low as £2,500, but the low prices were evidently the result of special agreements (part gifts) made with relatives. David Scott declared in 1791 that the average price was about £8,000, which estimate is possibly a little high for an average. As Chatterton says: "To such an extent did this practice [of selling the command, which became known as 'selling the ship'] become established that the sale of a command became transferable property of the captain who had bought it. Whenever he died or resigned, his heirs or he himself had the undoubted right to dispose of the billet to the highest bidder."

In the reform of 1796, the practice known as "hereditary bottoms" was abolished, and the hereditary claims to be bought out by the company numbered eighty-seven and cost £376,505—an average of £4,327 each. The maximum payment to be made to any one captain who presumably had received some financial benefits from his purchase was £5,000, and thirty-nine of the commanders were paid this amount. As none of the captains had any legal claim to such contributions, it is evident that they were treated generously; henceforth the command of East Indiamen was not for sale, and the vicious practice was strictly forbidden. The reform that prohibited the post as captain or of any other position on a ship operated by the East India Company to be sold, made effective in the closing years of the eighteenth century, was aimed at reducing graft and perquisites and preventing the appointment to commands of men "who possessed no right to such responsible tasks" or, in plain words, were inexperienced and incompetent. It was said that the prevalent evil had been "largely responsible for the high rates of freight that the company was forced to pay."

The East India Company, making big money and spreading much of it among "insiders" and employees of the company, continued to the end of its days as a ship operator to give the commanders of its ships opportunities to make big money, and the total remuneration received by its captains made possible by its trade monopoly to India and China did much to disturb the personnel of the British mercantile marine engaged in competitive trade on the Seven Seas. Capt. Robert William Eastwick, a master mariner of the late eighteenth century, married into a family that owned some East India Company shipping and thereby gained the command of an East Indiaman. He wrote of his experiences and, speaking of the company and the operations of its ships, says: "There was no service equal to it, or more difficult to get into, requiring great interest" (i.e., pull or influence), and he continues:

It was the practice of the company in those days to charter ships from their owners; these vessels were especially built for the service and were generally run for about four voyages, when they were held to be worn out, and their places taken by others built for the purpose. About thirty ships were required for the company every year. . . . When a ship's turn arrived to be employed, the

owner [one of the ring of "insiders"], as a matter of form, submitted a tender in writing to be engaged and proposed a particular person as captain, and this tender and proposal were always accepted. Thus the owners of these East Indiamen had everything in their own hands, and the favour of one of them was a fine thing to obtain, leading to appointments of great emolument.

Eastwick tells of the pay, allowances and "rights" of the commander of an East Indiaman, with the privileges to carry a certain substantial amount of freight free, both outward and homeward, and to make money out of passengers carried. He further writes:

The gains to a prudent commander averaged from £4,000 to £5,000 a voyage, sometimes perhaps falling as low as £2,000 but at times rising to £10,000 and £12,000 [or as high as about \$58,000]. The time occupied from the period of a ship's commencing receipt of her outward cargo to her finally being cleared of her homeward one was generally from fourteen to eighteen months, and three or four voyages assured any man a very handsome fortune.

Other British marine historical writers say that commanders of East Indiamen who were trained and selected ship operators and clever businessmen often made from £8,000 to £10,000 a round voyage, and W. S. Lindsay (*HISTORY OF MERCHANT SHIPPING*) records an instance of an East Indiaman commander's making as much as £30,000 out of a voyage from London to India; thence to China and back home. When the East India Company lost its monopoly, Captain Innes of the *Abercrombie Robinson* memorialized the company for compensation, and his statement of average income flowing to him as commander during his last three voyages, exclusive of personal trading profits on his invested capital, was £6,100 per voyage. Of this amount, only £180 was straight salary (£10 per month for eighteen months). He made £1,500 per voyage from the passage money of passengers after paying for their required provisions, supplies, etc., and the balance in privileges and emoluments based on tonnage and revenue less expenses. Every officer (even such petty or warrant officers as the boatswain, gunner, and carpenter) was supplied with a servant, and the captain was given two personal servants. The extra allowances to officers, besides their proportions of freight and provisions, were amazing. The commander was allowed 11 tons of wine, beer, and spirits, each officers' mess "a puncheon of rum," and the individual officers a quantity of alcoholic beverages ranging from 24 dozen bottles for the chief officer down to 10 dozen for the fifth mate.

It was primarily the introduction of copper sheathing in 1780 that lengthened the effective life of shipping in general and warranted the East India Company in retaining ships in its service for six voyages (twelve to fourteen years) instead of four voyages (eight to ten years) and later for very much longer periods—particularly ships built of "imperishable" teak.

The early Blackwall ships were merchantmen armed because of the times, and in the early seventeenth century they became predominantly of the East Indiaman type. Henry Johnson, a cousin of Phineas Pett, was in charge of the Blackwall yard throughout a good part of the seventeenth century, and he built men-of-war impartially for both Cromwell and Charles II during the years 1653-1680. He was knighted in 1679 and at his death in 1683 was buried in the East India chapel adjoining the dockyard. The Blackwall yard was in 1693 said to be "the property of the Perry family," and but little seems to have been known of the yard until John Perry took charge of it in 1776. Under his management as head of the firm, it became known as "the most capacious dockyard in Britain." When the American War of Independence ended, a picture of the yard shows four British battleships (74's) and two big frigates (rated as 44's) under construction there, an East Indiaman on the ways, another just launched, and four ships being repaired in dry docks. Apparently, during the war, the facilities of the Blackwall yard were being used to build naval vessels rather than East Indian merchant ships, although it is said that some of the warships built at the Blackwall yard were in reality heavily armed merchant frigates and were actually used in trade during war-times. However, during the critical years of the war with France, they would usually sail in powerful squadrons for mutual safety and protection. We are told that in early 1804 a fleet of heavily armed, well-manned frigate-built British East Indiamen set sail from Canton for England; it consisted of "sixteen stately ships, none of them smaller than 1,200 tons or bigger than 1,500 tons."

John Perry took in with him as a partner his son-in-law, George Green, who, starting in the yard as an apprentice, had by sheer ability worked himself up to a managerial position and married Perry's daughter. For several years thereafter, the yard continued to be called Perry's yard, and it was not until after the turn of the century that it became generally known

as the Blackwall yard. In 1789, Perry's company commenced building the Brunswick (wet) dock, which comprised eight acres and later became the nucleus of the larger East India docks. At the west end of the dock was built a masthouse, with a crane on top of the tower, which became a prominent and well-known landmark in the Thames area. The dock was used chiefly for masting, re-rigging, and re-fitting East Indiamen, and evidently, with the use of the masthouse, some smart work was done here in handling spars with what seems today to have been primitive appliances. The first ship masted here was evidently the *Lord Macaulay*, which on October 25, 1791, according to old yard records, had its "whole suit of masts and bowsprit raised and fixed in three hours and forty minutes."

Early in the first decade of the nineteenth century, the managing owners of the ships of the East India Company agitated the question of constructing wet docks in the interest of time and cost for both loading and unloading East India ships. At Wigram's suggestion, a dock company was formed that applied to Parliament for the right to build docks to reduce the "detention the ships would experience in the river, reduce the expenses of delivery and consequently lessen the sum which the company paid for the extra charge arising from a state of war." Parliament passed an act authorizing the work in 1803, work was begun in August 1803, and the docks were opened in August 1806. The new docks consisted of two basins connected with each other and with the river by means of an entrance basin. The old Brunswick dock of Perry's was absorbed in the outer (or export) basin of the new dock system, which was made 780 ft. long and 520 ft. wide, and the larger inner (or unloading) basin measured 1,410 ft. long and 560 ft. wide. The area of water was stated at 30½ acres and the depth of water 26 ft., and one side was up against the Perry Blackwall shipyard. No repairs of ships were permitted to be made on the property by the East India Dock Company, so its location was obviously advantageous to the Blackwall yard, in which Robert Wigram bought a half interest in 1810. The years make important changes. The original Brunswick wet dock of Perry's was considered a big undertaking, expressive of sound wisdom and initiative on the part of the builder. The East India docks, which enlarged and elaborated the Brunswick dock when it was only fourteen years old, although considered mammoth and in continual profitable use during the days of the East Indiamen merchant sail, did not survive indefinitely following the conquest of steam in ocean transport. While alterations were being made in 1914 in connection with the further improvement of London's shipping facilities, the original foundation stone of the East India dock was uncovered; it bore the date of March 4, 1804, and was 110 years old.

Upon the death of John Perry in 1810, control of the Blackwall yard passed into the hands of Sir Robert Wigram, a great businessman, who had started his career by sailing for India from Portsmouth on February 24, 1764, as surgeon on the 400-ton East Indiaman *Admiral Watson*. Robert Wigram bought the John Perry shares, but George Green held his interest and added to it. Later, Green, who lived until 1849, with two of Wigram's sons as partners and with Green's two sons becoming active in the business, made the Blackwall yard "almost a national institution, outdistancing all competition" in the production and maintenance of East Indiamen—or the frigate type of armed merchantmen.

The East Indiamen, throughout the seventeenth and eighteenth centuries and to the end of their day, had to be designed, equipped, and manned to fight not only pirates but also the armed trading vessels of their rivals, and down to well into the nineteenth century East Indiamen resembled warships and were operated somewhat in harmony with naval traditions. As late as the clipper ship era and the American clipper shipbuilding decade of the 1850's, the British East Indian merchantmen designated as "Blackwall frigates" were held in esteem as a type of high-class, well-built and conservatively operated, comfortable merchantmen that had long been popular in the Indian trade and, following the boom in the Australian trade in the early fifties, had been in great demand during the third quarter of the century for the carrying of passengers to the British colony in the Southern Hemi-

sphere—"the land of opportunity, with its new found gold," and later a more general prosperity built upon the Golden Fleece.

Sir Robert Wigram's father, Capt. John Wigram, had been the commander of the privateer *Boyne* in the 1740's, and he was lost at sea. A list of ships owned by Sir Robert Wigram and "taken up by the Hon. East India Company," commencing with the *General Goddard* of 755 tons in 1788, totals twenty-one vessels of 914 tons average, varying from the little *Retreat* of 505 tons in 1804 and the *Tottenham* of 517 tons in 1802 to the 1,200-ton ships *Wexford* (1802), *Marquis of Ely* (1803), *Neptune* (1811), *Glatton* (1811), and *Lady Melville* (1813), the *True Briton* of 1,198 tons (1790), and the *Woodford* of 1,180 tons (1806). These ships, some of which were built at the Blackwall yard and others elsewhere, represented "high-quality tonnage," and the entire fleet averaged 6.8 voyages each in the service of the East India Company. The ships engaged in its trade were not as a rule owned by the company, but were "taken up" (i.e., chartered) for one voyage or more from private owners who were stockholders of the company. A ship chartered by the H.E.I.C. (Honourable East India Company) had to be especially built for the trade and conform in every detail as to materials and workmanship as well as model, rig, equipment, and general design, with specific and exacting rules, regulations, and requirements laid down by the company. The private owner of an East Indiaman (the ship's husband) was usually a very rich man, heavily interested in the company—which was a monopoly dominated by a few men. As late as 1830, an East India shipping notice reads: "On the 15th of May a Court of Directors was held at the East India House, when the following ships were taken up." Then follows a list of the names of seven ships "for Bengal and China," five ships "for Bombay and China," and four ships "for China direct"; following this list of ships, we read, "Captain Bryan Broughton of the ship *Earl of Balcarres* took leave of the Court previous to departing for China direct." This ship (the *Earl of Balcarres*) was a popular East Indiaman of 1,417 tons, which had been built entirely of teak at the company's dockyard at Bombay in 1815 and originally carried two tiers of guns.

The British Blackwall Frigates

The type of British ship known as the Blackwall frigate and intimately connected with the Indian and East Indian (and later with the British-Australian) trade was described by a British writer, following the end of merchant deep-sea sail, as "a connecting link between the lordly East Indiaman of the Honourable John Company [the H.E.I.C.] and the power liners of the present day." The Blackwall frigates are a type of ship that carried the best of Britain's marine commercial traditions (the East Indiamen) of the late seventeenth, the eighteenth, and the first third of the nineteenth century down to the 1870's and to the end of the era of merchant sail in Britain, when ships were designed for beauty and to carry passengers comfortably at sea and make good runs between distant ports. When full-bodied sailing ships, with tramp steamer models propelled by wind through the medium of a tremendous spread of canvas in an economic battle for the survival of sail against steam on the Seven Seas, took the place of well-modeled and sparred square-rigged ships of the medium clipper, Blackwall frigate, and real Yankee Down Easter types, the days of merchant sail reached their last stage, and in driving mere bulk through the water by brute force, sail could not hope for long to compete with steam. The size of windjammers, moreover, was decidedly limited and the work of operating them relatively hard and dangerous; whereas

no such restrictions, either physical or human, handicapped the development of commercial steam-powered vessels.

The true Blackwall frigate was never a clipper or a full-bodied sailing tramp. She was a practical British development of the East Indiaman in competitive days, when private enterprise—freed of the restrictions of monopoly, but also deprived of an associated support and munificent encouragement—had to wage war for commercial survival. The early Blackwall frigates were small and unimpressive compared with the large and stately East Indiamen that preceded them, but as the years passed they grew in size, capacity, comfort, and speed. To continue in service, however, they had to make money, and in general trading on the Seven Seas they could follow neither the old traditions of the extravagantly operated and easy-going Honourable John East India Company's ships, the models, spar plans, and small size of the British China tea clippers, nor those of the later (and larger) Australian wool clippers. The British Blackwall frigate, like the United States "Down Easter," had to carry well and be a profitable investment at all times in competitive trade if it was to survive; but, unlike the Yankee type of ship, the Blackwall frigate was a passenger as well as a cargo-carrying ship. Because of its nationality and the nature of British long-voyage trade, with passenger and troop demands to and from India, Australia, the Indies, and the Far East, it survived as a profitable type of ship for some time after all other merchant sail had been driven to the carrying of bulk cargoes such as coal, wheat, lumber, case or barrel oil, etc. When transcontinental railroad traffic developed in the United States, sailing transport from an East Coast to a West Coast port was doomed, and this occurred many long years before the Panama Canal was opened in 1915. The successful operation of the Suez Canal in the seventies (following its opening in 1869) meant the approaching end of the Blackwall frigate in both the Indian and the Australian trades. The Canal brought Bombay into prominence, although trading to Calcutta and Madras around the Cape of Good Hope continued for some time, but the development of railroads in conjunction with canals ultimately spelled the doom of long-voyage merchant sail in both hemispheres.

Whereas the American Down Easter, perfected in the early eighties in the building of such fine ships as the *Henry B. Hyde* (which carried big cargoes at good speed economically), was a product of evolution and at all times a cargo-carrying merchant ship, pure and simple, built without frills and operated to make money in commerce on the Seven Seas, the Blackwall frigate was a type of privately owned merchant ship designed and constructed for the Indian and oriental trade to carry on the work, under competitive conditions, previously performed by the monopolistic British East India Company, whose ships were, in reality, warships built and used for the merchant service. Early East Indiamen were frigate-built, and at times it was uncertain, when the keel was laid, whether the ship would be a naval or a merchant vessel. After 1837, when the first ship of the so-called Blackwall frigate type was built, these vessels for long years were constructed to mount guns and be used as auxiliary naval vessels. Therefore, they continued to be designed to resemble warships, and they carried on in many ways the traditions and appearance of the ships of the Honourable John East India Company, which was empowered to operate its own navy and even to declare and wage war. In the 1850's, the British Government gave special recognition to certain Blackwall frigates, as they had been built with gun ports cut (and some of the guns placed aboard) so that they could be quickly converted into ships of the Royal Navy. When the gun ports were not cut, the ships were painted as if they were, and black squares or rectangles in the wide strake of white paint on each side made it difficult to distinguish between a real frigate of the navy and a Blackwall merchant frigate. In the waters of the Indian Ocean, East Indies, and China Seas, this painting was protective and valuable when sailing through pirate-infested waters, and when backed up with a few real guns (as all such ships were), the camouflage was very effective in discouraging attack by powerful pirate fleets in calms and light airs. The success of the painting and appearance of the Blackwall frigates, copying the old East Indiamen, influenced other merchant ship-

owners, both British and foreign, to paint their ships to resemble warships and show side gun ports, even if the only guns carried were mounted on the weather deck.

For many long years, no merchant ship was safe trading in East Indian and oriental waters unless she was well armed, and although speed was a big source of protection, the greatly valued quality of being a fast sailer was worthless without wind, and calms were rather common in certain waters where pirates operated. Ships engaging in illegitimate trades, such as opium clippers, had to be fast, and they were well armed not only to fight pirates but also to defend themselves against small government patrol vessels. It became the practice to paint ships engaged in the Eastern trade or operating in waters where pirates were active as if they were well-armed ships thoroughly capable of defending themselves in case of attack; moreover, at times it was intended to make it difficult for pirates to be able to differentiate between a merchant and a naval vessel.

American China packets during the first half of the nineteenth century, aside from their sharper and better model lines and loftier spars, generally resembled Blackwall frigates—at least as far as appearance was concerned, with a wide white strake on the sides and painted black squares to resemble gun ports. However, some ships were really armed. The *Houqua* of 581 tons, a pioneer clipper built by Brown & Bell, New York, in 1844 for A. A. Low & Bro. from designs by Capt. N. B. Palmer and intended solely for the China trade, carried an armament of real guns and had 8 gun ports on a side. American whalers, for long years, were painted like Blackwall frigates, with white strakes and black squares therein, and so were many transatlantic packets for no reason at all, apparently, except "fashion" and believed beauty of appearance. Whalers on the Seven Seas were benefited by such camouflage, as they often journeyed in pirate-infested waters and were slow and cumbersome and did not have the protection of speed or big armed crews. Transatlantic packets, however, being painted like old East Indiamen and Blackwall frigates, honored the type of British ship that had since the early seventeenth century stood for the best possible British merchant ship construction. Whereas many American transatlantic packets were painted black with a wide white decorative stripe running along each side and no painted black squares therein, such famous packets as the *England*, *Montezuma*, *Yorkshire*, *Isaac Webb* (1,359 tons; built in 1850), and *Harvest Queen* (1,383 tons; built in 1854) were painted with dummy gun ports like a Blackwall frigate. The Black Ball Line packet *Harvest Queen*, one of the best, fastest, and latest of all real transatlantic sailing packets, had 14 black painted dummy gun ports in a wide white strake on each side (she was sunk by collision on December 31, 1875). The Red Star New York-Liverpool packet *United States* of 650 tons, built in 1833, was painted like a Blackwall frigate and had 8 black dummy gun ports in a white strake on a side. Some coasting sailing packets, running south into the Caribbean and the Gulf of Mexico, really needed protection from West Indian pirates, so in addition to their speed and big well-armed crews and one or two cannon, they were camouflaged by painting to resemble a ship of war. The New York-New Orleans packet *John Minturn* of only 398 tons (wrecked in 1846) had as many as 13 fake gun ports painted on each side of her.

Real clippers built about and after 1850 were not painted like Blackwall frigates, but had their sides uniformly sleek and generally black, with no wide painted white strake and dummy gun ports, the extent of the relief being occasionally a narrow white or gold colored stripe for decoration, with an impressive figurehead and possibly carving on the stern counter, or overhang, aft. The *Star of Peace* of 941 tons, however (a medium clipper "of sorts"), built by Currier at Newburyport, Mass., in 1858 for the Indian and East Indian trade, was painted like a Blackwall frigate and had 11 black dummy gun ports on each side in a wide white strake. This ship, uniquely painted for an American clipper but not for a general (East Indian) trader, did not have an effective camouflage when she was sighted on March 6, 1863, by the Confederate raider *Florida* in Lat. 15° N., Long. 54° W. when bound from Calcutta to Boston; for the *Star of Peace*, although painted to look like a

warship, was unarmed (and essentially a peaceful vessel as her name implied), and she was captured and burned by the well-armed *Florida* without the firing of a shot.

Whereas American sailing ships of the clipper, post-clipper, and Down Easter types had no use for "fancy painting" and no emotional urge to follow the traditions of Britain's historic East Indiamen and perpetuate the appearance of Blackwall frigates, the British were loath to depart from the practice of painting their quality merchant sailing tonnage without a wide white strake and painted black rectangles therein, and ships were built and so painted in Britain to the end of merchant sail. When the *Liverpool*, a full square-rigged four-masted ship of 3,396 tons gross (3,134 tons net) was built on the Clyde in 1889 for R. W. Leyland & Company, of Liverpool, this ship (333 ft. long, 47 $\frac{3}{4}$ ft. beam, 26 $\frac{1}{2}$ ft. deep), the largest British sailing vessel of her day, was painted with a wide white strake and 18 black rectangles therein on each side. She was so painted when, under full sail and bound from Antwerp to San Francisco, she piled up on the rocks on the coast of Alderney in a fog on February 25, 1902, and became a total loss.

The following is a digest from Basil Lubbock's general description of the Blackwall frigates:

In design the Blackwall frigates would appear very bluff-bowed and apple-cheeked to our modern eyes. Their shape, indeed, has been compared by those who knew them well to that of a serving mallet. But the tumble-home, which was so pronounced in the earlier ships, gradually became modified, though even the last of them could never have been called wall-sided. Midship sections were full with little deadrise.

The early Blackwallers had the heavy stern frames, massive quarter galleries, much carved balconies and stern windows of the old East Indiamen. The first design to depart from the double stern and galleries was that of the old *Seringapatam*. She was always considered the first of a new class, and a great advance both in size and design on all her predecessors. None of the Blackwallers had any sheer, but they were too bluff in the bows above water to dish up much heavy water over the fo'c'sle-head. The poops were long, the main decks, to our ideas, very short, and much encumbered with the longboat, pig-pens, cow-stalls, hen-coops, first and second class galleys, etc., etc. . . . The wheel . . . was forward of the mizen mast, and the tiller was on the lower deck, as it had been since the days of the Tudors. They were beautifully built of the finest hard woods in the world, English oak and Malabar teak. You could not wear them out and you could hardly strain them, however much you drove them into a head sea. . . . On these ships, built of imperishable teak, and ribbed with Sussex oak, leaks were so negligible that one hears little of that man-killing work at the pumps, the nightmare of [most later-built] wood ships. . . .

The Blackwall sail plan showed a high-stepped bowsprit, long willow jibbooms, huge man-killing jib, large spanker, single topsails and bare cross-jack yard. The Blackwallers were very short in length, and consequently their masts especially, the main and mizen, were very close together, so that a crossjack could never be got to stand. The rigging was hemp. . . . In the days of the Indiaman

and the Blackwall frigate never a watch passed without some shroud or stay requiring setting up, and the handy billy was never idle for long. . . . The spar plans were still narrow, and so stunsails were of the greatest importance and were always carried to the last moment; fore topmast and square lower stunsails being hung on to when the first reef was in the topsails, and the fore and mizen topgallant sails handed. . . . Flying kites such as skysails and moonsails were never popular in the Blackwallers; Green's *Windsor Castle* [of 1,087 tons; built by Pile, Sunderland, in 1857], however, crossed three standing skysail yards, but this was after the advent of double topsails. *Dunbar Castle* [of 925 tons; built by Laing, Sunderland, in 1864 for Devitt & Moore] is said to have been the last ship to carry a single topsail at sea; but most of the frigates continued the single mizen topsail when they adopted the double topsails at fore and main. The later ships split the gigantic jib in two, and so spread four head sails. . . .

The Blackwallers were always conservative ships, and new fangled notions whether in design or sail plan were very thoroughly tested before they were adopted. . . . They prided themselves on their weatherliness, and in this resembled the American Atlantic packet ships. . . . Carrying away spars and even sails was considered bad seamanship on a Blackwaller, where everything was of the best, and their singular freedom from accidents was no doubt due to this cause.

The Blackwall frigates belonged to an era when seaworthiness was a *sine qua non* in a first class passenger ship. Beautifully kept, regularly overhauled, and with every beam and plank of picked wood, every rope-yarn strong enough to hang a man, and every sail without a patch, it is not to be wondered that accidents were few and far between. . . . No Blackwaller ever had to shorten sail to prevent straining in a heavy sea. And with their swelling bows and rounded quarters they were as

lively, buoyant and dry as so many corks. Their crews had no such experiences as were the common lot of seamen in the later iron ships. A flooded main deck would have filled them with alarm. Such a sight as a whole watch being hurled to and fro as the ship rolled and each following wave poured back and forth over the topgallant rails, would have sent the officer of the watch flying to the captain with a request that the ship might be hove to. As for the idea of a Blackwall frigate broaching to and sweeping her lower yardarms through the boiling surge to leeward, it would have been unthinkable. Yet these little ships were heavy steerers. Captain Whall recounts seeing Captain Toynebee, his chief officer and two quartermasters steering the old *Hotspur* [1,142 tons; built at

Smith's Tyne yard in 1851] for a whole four hours, when she was running before the westerlies with double reefed topsails on the caps.

The early Blackwallers modelled their ways on the old John Company, preferred comfort to speed, and snugged down for the night, but this was very far from the custom of the later commanders, who with their strong crews liked carrying on on occasions and thought nothing of stunsail booms. . . . It was wonderful the runs that were got out of these little bluff-bowed frigates. Here is a week's work of the *Hotspur* running easting down in 42° S. in September, 1864:—204, 238, 328, 252, 280, 257, 174. And she was a long way from being the fastest of them.

The maximum day's run stated as 328 nautical miles is questioned, as it seems beyond the speed capabilities of the vessel under the most favorable conditions for showing speed. However, the 1,733 miles (an average of 247½ miles per day) said to have been covered in one week, sailing before strong westerlies, lies within the realm of possibility; for on the preceding voyage in 1863 from London to Calcutta the log of the *Hotspur*, running east (August 30-September 5) from Long. 39° to 70° in Lat. 40° to 35½° S., shows that the ship covered 1,706 miles in 7 days (an average of 244 miles per day), but her best day's runs were 267 miles and 252 miles during heavy favorable gales.

As the era of the Blackwall frigate, which displaced the old East Indiaman, advanced, the ships were built less bluff in the bows, and their design was greatly influenced by that of American medium clippers as well as by the later American-built transatlantic sailing packets. However, it is evident that in the thirties and forties, as far as model under load water lines was concerned, Blackwall frigates generally were "real old stylers, which pushed a heavy wave in front of them," were not built for speed, and were incapable of a big day's run. Lubbock says:

There is no doubt that, taken on an average, the Blackwall frigates were a great deal faster than people supposed. They never made any huge 24-hour runs, it is true, but they were all-round ships, and, being perfectly sailed, they frequently beat

ships which had the reputation of being far their superiors.

If I had to place the first three in an ocean race for true Blackwallers I should give them as follows:—first—*The Tweed*; second—*Parramatta*; third—*La Hogue*.

The first choice of Lubbock for speed of "true Blackwallers," *The Tweed*, was not a "Blackwaller" at all, as she was built at the Bombay Dockyard as a paddle steamer for the Indian Navy, and when converted to a sailing vessel, she still had a sharp steamer model. The *Parramatta* was of 1,521 tons and was built by Laing at Sunderland in 1866 for Devitt & Moore and primarily for the Australian trade to compete with Liverpool-owned packets, many of which were old American clippers. *La Hogue* was of 1,331 tons and was built for Duncan Dunbar in 1855, also by Laing, of Sunderland, with both the Indian and Australian trades in mind and with an intent to produce a good vessel that, whereas not a true clipper, would sail well over courses where she would have to compete, more or less, with big and fast American clippers.

Lubbock, in his list of Blackwall frigates set forth in the appendix of his work descriptive of these ships (published in 1922), considers that the type really commenced with the building of the *Seringapatam* (818 tons) and *Madagascar* (835 tons) by Green at the Blackwall yard in 1837 and continued up to 1875, when the *Melbourne* (later named *Macquarie*) of 1,857 tons was launched from the same yard. Of the 122 ships listed, 42 were built at the Blackwall yard, 49 by various builders at Sunderland (such as Laing, Pile, Marshall, etc.), 10 at Smith's Tyne shipyard, and 10 at Moulmein, Burma (near Rangoon), as

well as 1 (*The Tweed*) at the Bombay Dockyard; the remaining listed Blackwall frigates were built at Dundee, Glasgow, and Troon, Scotland, and at one or two English yards. The Greens built 36 and the Wigrams 18 of these listed Blackwall frigates—a total of 54; of the 42 ships of this type launched at the Blackwall shipyard, the Greens built 25 and the Wigrams 17. The Greens had 11 of these merchant frigate ships built outside of the Blackwall yard by contract for their account (9 by Pile and 1 by Haswell at Sunderland and 1 at Moulmein); but the Wigrams built 17 out of their 18 new frigate ships at their own Blackwall yard, and Steele built their last and only contracted-for ship (the *Hampshire* of 1,164 tons) on the Clyde in 1870.

It has been said by a British historian that whereas the Blackwall frigates built by Wigram and Green resembled East Indiamen, they "were not pierced for guns, the square windows in these vessels at the poop being used for lighting the passenger cabins." This seems to be a rather too sweeping statement, for their early frigates were constructed almost exactly on the old and accepted East Indiaman lines and arrangements; but when the heavy poop, with its galleries, was cut down by Green when he built the *Seringapatam* in 1837 and set a new style in merchant frigates for trading to India and the East, the pioneer of the Blackwall frigates resembled East Indiamen with respect to broadside batteries and carried guns for which the hull was pierced. Gradually, however, fewer real gun ports were cut and fitted with watertight covers (which were caulked when closed), and more painted dummy ports were used until, in later years, the camouflage was complete and all the apparent gun ports were but painted rectangles. Until the Greens built in 1842 the *Prince of Wales* and the Wigrams the *Queen*, each of which measured 1,223 tons, the Greens, commencing with the *Seringapatam* of 818 tons, had built six and the Wigrams three Blackwall frigates, at their Blackwall yard, which varied in size from 776 to 971 tons. Following the construction of "the two big ships" in 1842 (each of which was 179.4 ft. long, 39.7 ft. beam, and 22.9 ft. deep), the largest ships of the merchant frigate type built at the Blackwall yard during the frigate era were as follows:

| Built by the Greens at Blackwall | | | Built by the Wigrams at Blackwall | | |
|----------------------------------|------------|---------|-----------------------------------|------------|---------|
| Name of Blackwall Frigate | Year Built | Tonnage | Name of Blackwall Frigate | Year Built | Tonnage |
| MONARCH | 1844 | 1,444 | DEVONSHIRE | 1848 | 806 |
| ALFRED | 1845 | 1,291 | KENT | 1852 | 927 |
| SUTLEJ | 1847 | 1,150 | SUSSEX | 1852 | 959 |
| AGAMEMNON | 1855 | 1,431 | SUFFOLK | 1857 | 974 |
| RENOWN | 1860 | 1,271 | NORFOLK | 1857 | 953 |
| SHANNON | 1862 | 1,292 | LINCOLNSHIRE | 1858 | 1,025 |
| SUPERB | 1866 | 1,451 | YORKSHIRE | 1859 | 1,057 |
| CARLISLE CASTLE | 1868 | 1,458 | TRUE BRITON III | 1861 | 1,046 |
| MELBOURNE | 1875 | 1,857 | ESSEX | 1862 | 1,042 |

The Green ships, after the building of the 1,223-ton sisters in 1842, were consistently larger than the Wigram vessels. Whereas the one ship that the Wigrams had built by contract outside their yard (the *Hampshire*; built in 1870) was of 1,164 tons and the largest Blackwall frigate constructed for their account since the *Queen* of 1,223 tons was built at their Blackwall yard in 1842, the Greens had Pile at Sunderland build for them the following merchant frigates: *Lord Warden* of 1,237 tons in 1862; *Malabar* of 1,219 tons in 1860; *Newcastle* of 1,173 tons in 1859; *Clarence* of 1,104 tons and *Dover Castle* of 1,002 tons in 1858; *Windsor Castle* of 1,087 tons in 1857; *Alnwick Castle* of 1,087 tons in 1856; *Walmer Castle* of 1,064 tons in 1855, and *Roxburgh Castle* of 1,049 tons in 1852.

Nine of the ten largest Wigram Blackwall frigates built in or after 1848 were named after English counties, the exception being the *True Briton III*, which was christened at her launching in 1861 to perpetuate the name of the ship that really founded the fortune of Robert Wigram. The first *True Briton* was an East Indiaman of 1,198 tons, built for Wigram in 1790 at Wells's yard, Deptford, on the Thames. The second *True Briton* was

built at the Blackwall yard in 1835, but she was a smaller vessel of East Indiaman type, with galleried stern, and measured only 646 tons.

Of the 74 Blackwall frigates listed by Lubbock that were built prior to 1855, only 18 were of over 1,000 tons, and outside of *The Tweed*, which was built in 1854 at Bombay as the steam naval frigate *Punjaub* (1,745 tons), the largest ships were the *Marlborough* of 1,402 tons (built in 1846), the *Blenheim* of 1,314 tons (built in 1848), each at Smith's Tyne yard for T. & W. Smith, the *Alfred* of 1,291 tons (built in 1845), and the *Prince of Wales* and *Queen*, each of 1,223 tons and built in 1842. These last three ships were constructed for Green at his Blackwall yard. During this period, ships as small as the *Phoebe* (578 tons) were built at Sunderland in 1844, the *Medway* (653 tons) at Green's Blackwall yard in 1845, and the *Resolute* (639 tons) in 1851; while Wigram's Blackwall yard built the *Hampshire* of 627 tons in 1852, the *Royal Albert* of 663 tons in 1844, and the *Minerva* of 678 tons in 1845. Other little 600-tonners were the *Agincourt* of 669 tons, built at Sunderland in 1844, and the *Lady McDonald* of 678 tons, built at Moulmein (Burmese India), both by Dunbar. All of the 10 Blackwall frigates recorded by Lubbock as built during the years 1837-1841 inclusive were under 1,000 tons, ranging from 818 to 980 tons, and of 10, 9 were built at the Blackwall yard, 6 by Green and 3 by Wigram. During the five-year period 1850-1854 inclusive, the 24 Blackwall frigates listed by Lubbock (excluding *The Tweed*) ranged from the *Dunbar* of 1,321 tons, built by Laing at Sunderland for Dunbar in 1852, the *Hoispur* of 1,142 tons, built at Smith's Tyne yard for T. & W. Smith in 1851, and the *Nile* of 1,126 tons, built at the Blackwall yard by and for Green in 1850, down to the *Hampshire* of 627 tons, built by Wigram for his own account at Blackwall in 1852, and the *Resolute* of 639 tons and *Blackwall* of 710 tons, built at Blackwall by and for Green in 1851 and 1850, respectively. Of the 24 Blackwall frigates mentioned, only 6 were over 1,000 tons and 13 were less than 900 tons.

Of the 26 Blackwall frigates listed by Lubbock as built during the five-year period 1855-1859 inclusive, 16 were over 1,000 tons. By far the largest was the *Eastern Monarch* of 1,844 tons, built at Dundee in 1856 for J. Somes, the next in size being the *Agamemnon* of 1,431 tons, built by Green at Blackwall in 1855 for his own account, the *Duncan Dunbar* of 1,374 tons and *La Hogue* of 1,331 tons, both built by Laing at Sunderland for Dunbar in 1857 and 1855, respectively. During this period, the smallest Blackwall frigates built of those listed were the *Peeress* of 780 tons, the *Gosforth* of 810 tons, the *Vittoria* of 848 tons, and the *Copenhagen* of 876 tons, the first two being built on the northeast coast of England and the latter two by Dunbar at Moulmein in Burma. Lubbock lists 22 Blackwall frigates built during the final period of 1860-1875 inclusive, and of these, 19 were launched during the years 1860-1866 and 16 during the five-year period 1860-1864 inclusive. All but two of the ships of the Blackwall frigate type listed as built during these last sixteen years of the construction era were of over 1,000 tons, the exceptions being the *Fire Queen* of 784 tons and the *Dunbar Castle* of 925 tons, both built in 1864. By far the largest ship of the period was the *Melbourne* (later renamed *Macquarie*) of 1,857 tons, the last vessel of the type, which was fittingly built (in 1875) at the Green Blackwall yard for builder's account. The next largest were the *Parramatta* of 1,521 tons, built by Laing at Sunderland in 1866 for Devitt & Moore, the *Carlisle Castle* of 1,458 tons, the *Superb* of 1,451 tons, and the *Shannon* of 1,292 tons, all three of these ships being built by and for the Greens at their Blackwall yard in the years 1868, 1866, and 1862, respectively.

Richard ("Dicky") Green died in 1863. He believed in wood ships and in sailing vessels and had no use for iron or steam. The iron Blackwall frigates *Superb* (1,451 tons), built in 1866, *Carlisle Castle* (1,458 tons), and *Melbourne* (1,857 tons), built in 1875, would never have been constructed by the Greens had Richard, "the staunch champion of wood sail" and of ships built of English oak, been alive. Iron shipbuilding has never flourished on the Thames, and it is said that "Dicky" Green was largely responsible for this fact. Moreover, Lubbock has written, "I think one may say that it was partly the introduction of iron

that ended Green's famous Blackwall Line." Richard Green was an advocate of the building of ships for British trade in Britain, although in 1849 he did build the Blackwall frigate *Coldstream* of 756 tons at Moulmein, in British Burma, in order to try out the construction of a ship with "imperishable Indian teak" at a point near where the timber was grown and cut.

"Dicky" Green, notwithstanding his ardent patriotism, evidently did have a financial interest during his career in one or more American-built clippers, for R. & H. Green were the reputed owners of such craft during the Australian gold boom years. The clipper *Amphitrite* of 1,687 tons, built by Samuel Hall, East Boston, in 1853, was promptly "sold foreign," and a record shows that she was "sold to Richard Green, London, Sept. 1853"; another report says that "her name was changed to the *Result* in 1855 and her hailing port was London." British historians tell us that "Green's Blackwall Line" owned and operated two American clippers. These, it is said, were "large Boston-built softwood ships—the *Result* of 1,565 tons, launched in 1853, and the *Swiftsure* of 1,326 tons, launched in 1854." We read: "These ships were ordered at the height of the Australian boom and were intended to carry a large number of emigrants to Melbourne." As Green changed the name of the American-built *Amphitrite* to *Result*, he probably gave the name *Swiftsure* to another American clipper that he bought and was confident would prove a fast vessel. The records show that in 1854 William Hall, East Boston, built the clipper *Fatherland* of 1,180 tons, which in October 1854 was acquired by "Green of London." The American Lloyd's Register of American and Foreign Shipping (1865) shows the East Boston-built *Swiftsure* (1,326 tons) as "late *Fatherland*," owned by R. & H. Green and "belonging to the port of London." British records inform us that the *Result* was burned at Hobson's Bay, Australia, in 1866, when thirteen years old and that the *Swiftsure* was wrecked in 1884, when thirty years old, so neither of these "Boston-built softwood ships" wore herself out in service. Each met a tragic end due to no fault of her own, and this after a combined age of only forty-three years for the two ships—an average of twenty-one and a half years. Two British-built Blackwall frigates (*Eastern Monarch* and *Europa*) were destroyed by fire when three years old, the *Talavera* was wrecked when five years old, and Green's *Resolute* was "lost" at that age; while Dunbar's *Rodney* was wrecked when nine years old, and his *Trafalgar* was lost through leaks (foundered) when only fifteen years old.

Following the repeal of the British Navigation Laws around mid-century, the let-down of the bars excluding foreign ships from participating in British foreign trade, and the appearance in London on December 3, 1850, of the *Oriental* (the first United States-built and owned clipper in the British China tea trade), British shipowners and shipbuilders were panicky and fearful of "Yankee competition" on the Seven Seas because of the acknowledged superiority of American ships over British vessels, their greater speed, and better handling. Lubbock says that "it was Richard Green of the famous Blackwall Line [and shipyard] who first put heart into the British shipowner," and we are told that at a large dinner in London in 1851 "Dicky" Green rose to speak (after the secretary of the United States legation had made a friendly international speech) and said:

We have heard a great deal tonight about the dismal prospects of British shipping, and we hear too, from another quarter, a great deal about the British lion and the American eagle, and the way in which they are going to lie down together. Now

I don't know anything about that, but this I do know that 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.

"Dicky" Green was boastful as far as Britannia was concerned, and much publicity emanating from him and his ships during the few years that followed his London speech was prejudiced and untrue. However, in 1852, Green built at his Blackwall yard the appropriately named tea clipper *Challenger* of 699 tons, which was the first sizable clipper for foreign trade built in Britain to wrestle with Americans for the higher class of deep-sea trade. (The pioneer real British clippers *Stornoway* and *Chrysolite*, built in 1850 and 1851

by Hall, of Aberdeen, were of 506 tons and 471 tons, respectively.) Green's *Challenger*, although built at Blackwall, was a clipper designed for the China tea trade and was not a Blackwall merchant frigate. It is well known that in the design of this ship, Green attempted to copy the model and sail plan of the American clipper *Oriental*, which had been in the dry dock at Blackwall, and her lines had been taken off and complete measurements made of her by British Admiralty draftsmen. Lubbock admits that "Green built the *Challenger* with the help of these lines"; he comments on the "unmistakable resemblance" between the British *Challenger* and the bigger United States clipper *Oriental*, which inspired her, and states that he possesses the lines of each of these two ships.

The British say that in 1852 Green's *Challenger* raced the American clipper *Challenge* from China to London and that "the two vessels left Anjer on the same day, and when this was telegraphed home, tremendous stakes were wagered as to which should be the first arrival in London; it was even rumoured that the loser was to be forfeited to the winner." We are told that "after a very smart run, the little [British] *Challenger* succeeded in beating the big [American] *Challenge* into dock by two days." Lubbock adds: "Curiously enough, as if in support of the forfeit rumour, all trace of the *Challenge* seems to be lost after this race. She went into the Blackwall dock, where her lines were taken off, as those of the [U.S.A. clipper] *Oriental* had been, and many people declared that she came out under the name of the *Result*." Lubbock, however, admits that this transfer of name was impossible, for he says, "The *Result* certainly was a big American-built ship, bought by Green to take part in the booming Australian trade; but she was a smaller ship altogether than the *Challenge*." Yet Lubbock again resorts to fiction when he adds, "A more likely story was that Messrs. Green bought her [*Challenge*] with the money won over the race [with the *Challenger*]." As previously stated, the *Result* was the original *Amphitrite* of 1,687 tons, built by Samuel Hall, East Boston, in 1853 and sold to Richard Green in the fall of that year. The *Challenge* was built by William H. Webb, New York, in 1851 and was of 2,006½ tons. She was too large a ship for the China trade, but after her "race" with the *Challenger*, she went out to China again under a British charter and admittedly "led the fleet." On the return, she encountered bad luck and had to put into the Azores, where she discharged her cargo, and went back to New York. In 1854 and again in 1858, she made Cape Horn passages of 114 days from New York to San Francisco and, between the two California voyages, traded with China, Australia, etc. She was in the Pacific trade from the fall of 1858 until sold, because of the Civil War, to Thomas Hunt & Company following her arrival at Bombay on December 21, 1861. Her new British owners renamed her the *Golden City* and used her in the India-China trade for a few years, with Hong Kong as hailing port. In 1866 she was bought by Wilson & Company, of South Shields, England, and put in the Java and Bombay trade until she was wrecked off the French coast in 1876, when twenty-five years old. It is evident, therefore, that Lubbock is in error when he says that "all trace of the [American clipper] *Challenge* seems to be lost after this race" between the *Challenge* and the *Challenger* from China or particularly from Anjer and the Straits of Sunda in 1852.

The difference between the facts of a purely imaginary race between the United States clipper *Challenge* and "Dicky" Green's Blackwall-built *Challenger* and the reports emanating from prejudiced British owners and publicists, mentioned elsewhere, will bear repeating. The British clipper left Anjer on September 4 and reached London on November 19, 1852, according to British records; whereas the American *Challenge*, with a makeshift mate in command (her brilliant commander, Captain Land, having died in China), arrived at Anjer September 13 and was at Deal (London) on November 18, 1852, having made a passage of 65 days, which stands for an all-time world record. Green's *Challenger* was 76 days from Anjer to London and 75 days from Anjer to Deal, or ten days longer than the American clipper over the course. The *Challenge*, which left Anjer nine days after the *Challenger*, was anchored at Gravesend on the Thames (being detained there three days

because of her draft and the refusal of pilots to take her to the London docks) when the British clipper arrived and was given prompt attention and towed to her discharging berth.

The Blackwall frigates, like the East Indiamen, were in both the India and China trades, but in the 1850's the bulk of the China trade went to the tea clippers; whereas the capacious, good passenger-carrying Blackwall frigates were in demand in the Australian trade and found that service profitable for a term of years. Indeed, the last of the Blackwall frigates were built more with the Australian than the Indian trade in mind, and the last of the fleet built at the Green Blackwall yard in 1875 was actually named the *Melbourne*. The *Superb*, the first iron ship built (in 1866) at the Blackwall yard (after the death of "Dicky" Green), was a favorite passenger ship in the Australian trade, and we are told: "She usually sailed from Gravesend (London) at the beginning of the summer and left Melbourne homeward bound at the end of the year." After Green's building of the China clipper *Challenger* in 1852, he left the construction and ownership of British clippers to defend the Empire trade from Americans in the hands of others, and the British China tea clippers were generally built in Aberdeen and on the Clyde in Scotland and at Sunderland on the northeast English coast. In 1861, however, R. & H. Green built at their Blackwall yard for their own account the clipper frigate *Highflyer* of 1,012 tons (length 193.7 ft., beam 35.5 ft., depth 20 ft.), which "Dicky" Green gave "extra fine lines" and put into the China tea trade under the command of Capt. Anthony Enright, a famous driver of clippers with a great reputation in both the China and Australia trades. Much was expected of the *Highflyer*, but the Blackwall clipper frigate was not a success, and we are told: "After a few passages averaging about 130 days from Shanghai, she dropped out of the competition for the first teas." In the tea races of 1862 and 1863, the much-vaunted *Highflyer* (Captain Enright) was actually beaten by the old Green-built clipper *Challenger* on the run from China to London. It is of interest to note that the *Highflyer*, on her maiden voyage (primarily planned to bring a load of tea to England from China), did not go out to China direct or by way of an Indian port, but loaded for Sydney and went from there to Shanghai. The Blackwall frigate *Shannon* of 1,292 tons, launched by the Greens in May 1862 (a year before Richard's death), was put in the Australian trade and, it is said, "ran steadily to Melbourne until the Greens sold her in May 1883" to Sydney, N.S.W., owners. Whereas the Liverpool-Australia Black Ball liners and many other liners in the British-Australian trade went out from England to Australia and home by sailing around the world to the eastward and returning via Cape Horn, many ships went back home to the westward, rounding the Cape of Good Hope after loading at Chinese, East Indian, and Indian ports, and this triangle trade—London to Melbourne and thence home via Calcutta—would be expected to be popular for Blackwall frigates.

When the East India Company (H.E.I.C.) sold its ships following its withdrawal from the ocean-carrying trade in 1833-1834, Joseph Somes, of London, an experienced shipowner and an "India husband," bought some of the finest of the Indiamen, such as the *Earl of Balcarres*, *Thomas Coutts*, *Abercrombie Robinson*, *Lowther Castle*, *George the Fourth*, and *Java*, and he built for the East India trade the *Maria Somes*, *Princess Royal*, *Sir George Seymour*, and *Castle Eden*. Joseph Somes was one of the promoters of Lloyd's Register. In the fifties and sixties, he had built for him the following Blackwall frigates:

| Name of Ship | Built | Tonnage | Name of Ship | Built | Tonnage |
|-----------------|--------------------|---------|---------------|--------------------|---------|
| EUROPA | London 1851 | 841 | DARTMOUTH | Dundee 1859 | 933 |
| MERCHANTMAN | Sunderland 1852 | 885 | PEERESS | Sunderland 1859 | 780 |
| CANNING | Moulmein 1854 | 919 | STAR OF INDIA | Dundee 1861 | 1,045 |
| EASTERN MONARCH | Dundee 1856 | 1,844 | FIRE QUEEN | Troon 1864 | 784 |
| TYBURNIA | Glasgow 1857 | 948 | SALISBURY | Troon 1866 | 1,113 |

All of these ten *Somes* ships were "on the small side," ranging from 780 to 1,113 tons, with the exception of the *Eastern Monarch*, which was designed, built, and operated as a troopship and in 1859, when only three years old, was destroyed by fire at Spithead upon her arrival there with troops aboard. *Somes* was not limited in his interests to the Indian trade, for he owned West Indiamen and South Sea whalers and was outstanding for the number of his ships chartered by the British Government for various purposes; for instance, in 1840-1841 six of *Somes*' ships were "taken up" by the government for the transport of convicts to Australasia. These ships ranged in size from the *Mexborough* of 376 tons to the *Maitland* of 648 tons, and the charter rates paid to him per voyage varied from £5 per ton for the largest vessel to £6-6-0 per ton for the smallest. The *Tyburnia* of 948 tons, built at Glasgow in 1857, is of interest, as she was chartered in 1884 as a cruise ship for long ocean voyages by the Pleasure Sailing Yacht Company, with her passenger guests charged at the rate of a guinea a head per day. The ship got into trouble with custom authorities at Madeira and was fired upon by the fort when she sailed, and she later was detained at New York under suspicion of being a smuggler. In the late eighties, the *Tyburnia*, owned in Australia, was engaged in the Pacific timber trade, and this Blackwall frigate ended her days as a hulk at Townsville, Queensland.

During the days of the Blackwall frigates and when the privately owned ships ran in the London-Calcutta and Madras passenger trade from the late thirties to the late sixties, the firm of T. & W. Smith, of Newcastle, ranked high in importance and about on a par with the Greens and Wigrams, of Blackwall, London. Thomas Smith, a Newcastle rope-maker, had two sons, Thomas (born in 1783) and William (born in 1787); the elder followed the father's business, and the younger was apprenticed to William Rowe, the leading shipbuilder of his day on the Tyne. In 1810, two years after William had completed his apprenticeship as a shipwright, Thomas Smith (Senior) bought the shipbuilding plant of William Rowe and, taking his two sons into partnership, founded the firm of Smith & Sons to own and operate the yard and business. For many years, the Smith Company was not interested in the building of East Indiamen, but in the late twenties it built the *Duke of Roxburgh* (417 tons) and the *George Green* (568 tons) to the order of Green & Wigram, of Blackwall. In February 1831, the Smiths launched their third East Indiaman, the *Duke of Northumberland* (600 tons), and soon after this the firm commenced running ships of its own to Madras and Calcutta in competition with the Blackwall ships of Green and Wigram. Upon the death of Thomas Smith (Senior) in 1836, the Newcastle firm became Thomas & William Smith; the Smiths soon owned the largest shipbuilding business on the Tyne, and besides running their own ships in the East India trade, they branched out generally. Following the building of the *Seringapatam* by Green at the Blackwall yard in 1837 (this ship was the first of a new type of passenger ship that displaced the old East Indiaman and can be said to have inaugurated the era of the Blackwall frigate), the Smith Tyne yard built the following Blackwall frigates for Thomas & William (T. & W.) Smith and the Smith Indian and East Indian service:

| Name of Ship | Year Built | Tonnage | Name of Ship | Year Built | Tonnage |
|-----------------|------------|---------|---|------------|---------|
| BUCEPHALUS | 1840 | 980 | BLENHEIM | 1848 | 1,314 |
| ELLENBOROUGH | 1842 | 926 | HOTSPUR | 1851 | 1,142 |
| SIR ROBERT SALE | 1843 | 741 | GOSFORTH | 1856 | 810 |
| TUDOR | 1844 | 1,150 | ST. LAWRENCE | 1861 | 1,094 |
| MARLBOROUGH | 1846 | 1,402 | Average tonnage of 9 Blackwall frigates, built 1840-1861, was 1,062 tons. | | |

Another Smith-built merchantman of the Blackwall frigate type was the *Gloriana*, a ship of 1,057 tons.

The Smith Tyne-built and owned Blackwall frigates were constructed so that they could readily be converted into war vessels; they were pierced for guns and always carried a couple of 32-pounders. The Smiths' finest as well as largest ships were the *Marlborough* (1,402 tons) and the *Blenheim* (1,314 tons). These Blackwall frigates were short, beamy, and deep for vessels of their type, being approximately 175 ft. long, 42 ft. beam, and 29 ft. deep. They were surveyed by the admiralty, which pronounced them frigate-built and fit for carrying armaments, and at the London Exhibition of 1851 they were declared the finest ships in the British mercantile marine and presented with silk ensigns and house flags (a wide blue cross on a white field). Because of this house flag, the Smith Indian service became known as the Blue Cross Line. The opening of the Suez Canal in 1869 doomed the operation of sailing ships between England and India and caused Bombay to rise in importance as a port of entry and to displace Calcutta, India's premier port, and Madras, which for long years was India's second port in prominence. The Smiths, from the thirties, had been in the business of transporting coal from the Tyne to the Thames, and when the Suez Canal opened, the firm decided to dispose of its sailing fleet; its steamer, the *Blue Cross*, is said to have been the first commercial steamer to go through the Canal.

During the forties and fifties, the only other shipowner of importance to compete with the Greens, Wigrams, and Smiths in the operation of ships of the Blackwall frigate type was Duncan Dunbar. He was primarily an owner rather than a builder, although he was a champion of Indian-built teak ships and owned his own yard at Moulmein, Burma. Duncan Dunbar inherited a small shipowning business upon his father's death in 1825 and built it up until his name was famous in both the Indian and Australian trades. He died in 1862, leaving a large fortune, and the last Duncan Dunbar Blackwall frigate was built by Laing at Sunderland in 1863. During a period of twenty years, Dunbar is credited with constructing or having built for his account 35 Blackwall frigates, 27 of which were launched on the Tyne, 1 on the Thames at Northfleet, Kent (twenty-two miles east of London), and 7 were built of Indian teak at Moulmein, Burma. The *Marion* (684 tons), built by Duncan Dunbar at Calcutta in 1834, is said to have "sailed the seas for fifty years," but records show that she was in active service until 1877, when she was wrecked on the Newfoundland coast. The *David Malcolm* was built in 1839 and the *Cressy* (720 tons) and *Hyderabad* (804 tons) in 1843 at Sunderland. His largest ships were the *Duncan Dunbar* (1,374 tons), built in 1857, *La Hogue* (1,331 tons), built in 1855, and *Dunbar* (1,321 tons), built in 1852—all of which were constructed to his order by Laing at Sunderland. His smallest ships (also of the Blackwall frigate type) were the *Phoebe* (578 tons) and the *Agincourt* (669 tons), both built at Sunderland in 1844. The following Blackwall frigates were built by Duncan Dunbar at his Moulmein yard, located in proximity to teak stumpage in Burma:

| Name of Ship | Built at Moulmein | Tonnage | Name of Ship | Built at Moulmein | Tonnage |
|---------------|-------------------|---------|---|-------------------|---------|
| LADY McDONALD | 1847 | 678 | VITTORIA | 1855 | 848 |
| HOUGOMONT | 1852 | 875 | COSPATRICK | 1856 | 1,119 |
| ALBUERA | 1854 | 852 | LINCELLES | 1858 | 904 |
| COPENHAGEN | 1855 | 876 | Average tonnage of 7 Blackwall frigates, built 1847-1858, was 879 tons. | | |

Duncan Dunbar, we are told, built his ships at Brema, Moulmein (Burma), "of teak, cut from the forests that lined the banks of the river and surrounded the yard." These teak Indian-built ships were evidently staunch vessels that lived to a ripe age. The *Lady McDonald* (or *MacDonald*), launched in 1847, saw sea service for some half-century, and an earlier ship, the *Marion* of 684 tons, said to have been built by Dunbar at Calcutta as early as 1834, after many years of hard service in the North Atlantic trade, was said to have been a staunch vessel when wrecked on the Newfoundland coast in 1877, when forty-three years old.

Other notable late owners of Blackwall frigates of prominence were George Marshall & Sons and Devitt & Moore. The Marshalls built at their yard in Sunderland and, during the years 1857-1864, constructed and operated the following six Blackwall frigates, which averaged 1,186½ tons and ranged from 1,089 tons up to 1,286 tons:

| Name of Ship | Year Built | Tonnage | Name of Ship | Year Built | Tonnage |
|--------------|------------|---------|--------------|------------|---------|
| SURREY | 1857 | 1,089 | WINCHESTER | 1862 | 1,157 |
| PATRICIAN | 1859 | 1,140 | ESSEX | 1863 | 1,256 |
| MIDDLESEX | 1861 | 1,191 | DURHAM | 1864 | 1,286 |

An earlier ship of this type, the *Statesman* of 874 tons, was built for the Marshalls at Sunderland in 1849, and the Blackwall frigate *Ellenborough* of 926 tons, built in 1842 by the firm of T. & W. Smith in its Tyne yard for the Smiths' own account, was later sold to George Marshall.

The firm of Devitt & Moore, which became very important in the Australian trade and later owned a fleet of fine iron wool clippers, put under its flag the new Blackwall frigate *Dunbar Castle* of 925 tons, built by Laing at Sunderland in 1864, and in 1866 the same builder launched for Devitt & Moore one of the fastest and largest of all the Blackwall frigates, the famous *Parramatta* of 1,521 tons (length 231 ft., beam 38.2 ft., depth 22.8 ft.). This ship, like all the later-built Blackwall frigates, however, saw service and won honors in sailing in the Australian rather than the Indian trade.

Whereas the Tyne saw built in 1840 the first ship of the Blackwall frigate type that was not constructed on the Thames, the river Wear, a little south of it (draining a famous collier section of Durham), shortly thereafter (in 1843) had launched into it at Sunderland the first of a fleet of Blackwall frigates. Laing built all the ships for Duncan Dunbar that were constructed at Sunderland; also the *Parramatta* and *Dunbar Castle*, built for Devitt & Moore, and the *Merchantman*, built for Joseph Somes. A rival builder, Pile, built all of Greens' ships constructed at Sunderland, with the exception of the *Lady Melville*. The list of high-class Blackwall frigates built at Sunderland and launched from the yards of Laing, Pile, and Marshall is an impressive one, for Laing built 31 of the 49 vessels listed, Pile 9, and Marshall 6. Laing and Pile were contract builders. Laing built Blackwall frigates from 1843 to 1866, but Pile only from 1852 to 1862. A comparison of the last five ships of this type built by each of these two builders is set forth herewith:

| Laing Frigate-built Ships | | | | | Pile Frigate-built Ships | | | | |
|---------------------------|------------|---------|-------------|-------------|--------------------------|------------|---------|-------------|-------------|
| Name of Ship | Year Built | Tonnage | Length | Beam | Name of Ship | Year Built | Tonnage | Length | Beam |
| | | | <i>Feet</i> | <i>Feet</i> | | | | <i>Feet</i> | <i>Feet</i> |
| PARRAMATTA | 1866 | 1,521 | 231 | 38.2 | LORD WARDEN | 1862 | 1,237 | 210.3 | 36.6 |
| DUNBAR CASTLE | 1864 | 925 | 182.7 | 33.9 | MALABAR | 1860 | 1,219 | 207.2 | 36.6 |
| ALUMBAGH | 1863 | 1,138 | 190 | 36 | NEWCASTLE | 1859 | 1,173 | 196.5 | 36.5 |
| DUNCAN DUNBAR | 1857 | 1,374 | 229.2 | 36.3 | CLARENCE | 1858 | 1,104 | 198 | 36.5 |
| LA HOGUE | 1855 | 1,331 | 226 | 35 | DOVER CASTLE | 1858 | 1,002 | 185 | 34 |

Pile's first Blackwall frigate (one of five "Castle" ships built for Green) was the *Roxburgh Castle* of 1,049 tons, launched in 1852, and in that year Laing built the *Dunbar* of 1,321 tons and also the *Salamanca* of 891 tons, both for Duncan Dunbar.

Of the Blackwall frigates of the "modern" type built after 1837 (distinct from earlier East Indiamen) and listed by Lubbock, records are available showing the tragic end of some 32 of these ships, and the following statement is presented covering 30 of these vessels, of which the year of the final disaster that terminated their careers is readily obtainable:

| Name of Black-wall Frigate | Where Built | Owner | Ton-nage | Year Built | End | Age When Lost |
|----------------------------|-------------|-----------|----------|------------|---------------------------------|---------------|
| | | | | | | Years |
| EASTERN MONARCH | Dundee | Somes | 1,844 | 1856 | Burned, 1859 | 3 |
| EUROPA | London | Somes | 841 | 1851 | Burned, 1854 | 3 |
| DUNBAR | Sunderland | Dunbar | 1,321 | 1852 | Wrecked, 1857 | 5 |
| DALHOUSIE | Moulmein | Allan | 848 | 1848 | Foundered, 1853 | 5 |
| RESOLUTE | Blackwall | Green | 639 | 1851 | Lost, 1856 | 5 |
| TALAVERA | Sunderland | Dunbar | 916 | 1850 | Wrecked, 1855 | 5 |
| DUNCAN DUNBAR | Sunderland | Dunbar | 1,374 | 1857 | Wrecked, 1865 | 8 |
| RODNEY | Sunderland | Dunbar | 877 | 1849 | Wrecked, 1858 | 9 |
| SUTLEJ | London | Green | 1,150 | 1847 | Burned, 1859 | 11½ |
| TRAFALGAR | Sunderland | Dunbar | 715 | 1845 | Foundered, 1860 | 15 |
| MADAGASCAR | London | Green | 835 | 1837 | Went missing, 1853 | 16 |
| SUSSEX | Blackwall | Wigram | 959 | 1852 | Wrecked, 1871 | 18½ |
| WALMER CASTLE | Sunderland | Green | 1,064 | 1855 | Burned, 1876 | 21 |
| NORTHFLEET | Northfleet | Dunbar | 896 | 1852 | Collision, 1873 | 21 |
| HOTSPUR | Tyne | Smith | 1,142 | 1851 | Wrecked in Madras cyclone, 1872 | 21 |
| NORFOLK | Blackwall | Wigram | 953 | 1857 | Wrecked, 1879 | 22 |
| ROXBURGH CASTLE | Sunderland | Green | 1,049 | 1852 | Wrecked, 1876 | 24 |
| EARL OF HARDWICKE | London | Green | 852 | 1838 | Wrecked, 1863 | 25 |
| ALNWICK CASTLE | Sunderland | Green | 1,087 | 1856 | Wrecked, 1881 | 25 |
| LINCOLNSHIRE | Blackwall | Wigram | 1,025 | 1858 | Wrecked, 1883 | 25 |
| LORD WARDEN | Sunderland | Green | 1,237 | 1862 | Foundered, 1888 | 26 |
| WINDSOR CASTLE | Sunderland | Green | 1,087 | 1857 | Foundered, 1884 | 27 |
| SULTANA | Sunderland | Dunbar | 775 | 1854 | Went missing, 1882 | 28 |
| ALBUERA | Moulmein | Dunbar | 852 | 1854 | Went missing, 1884 | 30 |
| CARLISLE CASTLE | London | Green | 1,458 | 1868 | Wrecked, 1899 | 31 |
| MONARCH | London | Green | 1,444 | 1844 | Went missing, 1876 | 32 |
| BLACKWALL | Blackwall | Green | 710 | 1850 | Wrecked, 1884 | 34 |
| THE TWEED | Bombay | Willis | 1,745 | 1854 | Dismasted and condemned, 1888 | 34 |
| HOLMSDALE | Sunderland | Phillipps | 1,257 | 1858 | Went missing, 1897 | 39 |
| NILE | Sunderland | Dunbar | 763 | 1849 | Foundered, 1889 | 40 |

In addition to the above, the Blackwall frigate *Camperdown* of 993 tons, built at Sunderland for Dunbar, was sunk by collision, and the *Cospatrick* of 1,119 tons, built by and for Dunbar at Moulmein, Burma, was destroyed by fire. Most of the Blackwall frigates lived to a good age and finally ended up in the boneyard or in the hands of shipbreakers. Of the 32 ships mentioned above, whose careers were terminated with a catastrophe when from three to forty years old, 5 were destroyed by fire, 14 wrecked, 2 lost by collision, and 11 foundered, "went missing," or were lost at sea.

The discovery of gold in Australia in the early fifties had its effect upon the Blackwall frigates and the operation of British ships in the Britain-India trade—as it had upon all other classes of British ships and the service on all other British deep-sea trade routes. Blackwall frigates, however, with their class, tradition, and dignity, did not stampede, as did other types of ships, to carry emigrants out to Australia, with the adventurers piled into inadequate quarters with no regard for health and such vital considerations as sanitation, feeding, ventilation, and accommodations for sleeping and living for a period of many months in all kinds of weather and climate. The demand for ships to carry emigrants, adventurers, and more mentally stable and particular passengers to Australia had by 1853 far outstripped the supply. Liverpool ships generally transported the rabble for a time, but London ships were in special demand to carry first- and second-class passengers rather than emigrants, and, in fact, the only British ships that at the time were fitted for the carrying of such passengers were the Blackwall frigates. The owners of these vessels were, therefore, faced with the problem of cutting down deeply their service to India, which they were loath to do, for "dyed-in-the-wool" super-conservative Britishers hated to change and depart from the traditions of centuries; but, on the other hand, Indian trade was not so very profitable, Yankee

competition was threatening and getting serious, and the Australian shipping business was a gold mine. Moreover, as the Australian trade was one-way traffic and no return freight (or passenger business) was obtainable, the Blackwall frigates could return from Melbourne via Indian or East Indian ports, so only part of the Indian business would be sacrificed if many of the ships were placed in the very lucrative Australian trade. Therefore, Blackwall frigates, built for the Indian and East Indian trade and peculiarly identified or associated with it, appeared in increasing numbers in the Australian trade, and they continued to operate in this service to the end of the era of deep-sea merchant sail.

The British records of passages between England and India or Australia credit the Blackwall frigates with some fast passages, but it is well to note that only very smart runs were generally given publicity and that nothing was said about the long or even the mediocre passages; moreover, the runs were timed between some favorable point in the Channel and some equally favorable point at the Indian or Australian end. The early Blackwall frigates were slow sailers, but following mid-century—with the competition of American clippers, the Australian gold boom, and the demand for speed—the models and sail plans of these merchant frigates were designed more and more to permit them to make shorter average passages. They were never of clipper model or rig, however, could not make any high spurt speed or big day's runs, and depended on maintained favorable sailing conditions for the making of fast passages. Lubbock says:

It may be wondered how the Blackwall frigates made passages which were as good as those of the clippers. The truth is that their captains had not only their own experience of wind and weather, but that also of nearly 150 years of carefully preserved East India voyages to go upon. They knew all that Maury was able to discover, but they had to consider their slower, more leewardly, ships where Maury was advising the captains of close-winded

clippers. The Blackwallers, though quite fast in medium and light winds, were only 10-knotters in winds which would send Maury's clippers along at the rate of 15 and more. Thus it was the old East India captain's custom to keep well to the eastward on the passage from the Channel to the line, for he had a wholesome dread of being back-strapped or set to leeward of Cape San Roque.

In 1853 five Blackwall frigates participated in a race from the British Isles to Calcutta, leaving Queenstown (southern Ireland) during the period June 30-July 4. Their comparative time and course steered in the North Atlantic are of interest:

| Name of Ship | Tonnage | Left Queens-town | Crossed the Equator | | Run to Line in Days | Crossed Meridian of Cape of Good Hope | Days from Line to Cape Meridian | Arrived at Sand Heads | Days from Cape | | Length of Passage in Days |
|--------------|---------|------------------|---------------------|----------------|---------------------|---------------------------------------|---------------------------------|-----------------------|----------------|------------------------|---------------------------|
| | | | Date | Longitude West | | | | | Sand Heads | Meridian to Sand Heads | |
| SOUTHAMPTON | 971 | June 30 | July 31 | 13° 30' | 31 | Aug. 19 | 19 | Sept. 29 | 41 | | 91 |
| BARHAM | 934 | July 1 | July 30 | 19° | 29 | Aug. 21 | 22 | Sept. 29 | 39 | | 90 |
| WELLESLEY | 1,014 | July 2 | July 31 | 19° | 29 | Aug. 20 | 20 | Sept. 29 | 40 | | 89 |
| CAMPERDOWN | 993 | July 2 | Aug. 12 | 20° 30' | 41 | Sept. 6 | 25 | Oct. 11 | 35 | | 101 |
| COLLINGWOOD | 743 | July 4 | Aug. 8 | 22° | 35 | Sept. 5 | 28 | Oct. 19 | 44 | | 107 |

The *Southampton*, owned by the Wigrams, was built at Blackwall in 1841. The *Barham* and *Wellesley*, both owned by the Greens, were built at Blackwall in 1846 and 1844, respectively. Both the *Camperdown* and the *Collingwood* were built in 1847 at Sunderland for Dunbar.

The pioneer ship of the type that became known as the Blackwall frigate and took the distinctive place formerly held by the British East Indiaman was the *Seringapatam* of 818 tons, built by the Greens at their Blackwall yard on the Thames in 1837. It is said that the improvement in speed shown by the *Seringapatam* in breaking away from old Honourable John Company tradition caused her to be used as a model for British vessels to be built for the Indian and East Indian (and later for the Australian) trades. The *Seringapatam* is credited with making "several 85-day passages to India," and there is a record of the ship's leaving London June 26 on one outward passage, passing the Lizard July 7, and reaching

Bombay September 30. This figures an 85-day run from the Lizard and 96 days from London, which is probably as good a passage as she ever made. The *Madagascar*, also launched by the Greens in 1837 shortly after the *Seringapatam* and described as a sister ship, was of 835 tons and is said also to have been known for her speed. The *Madagascar* is credited with a run of "43 days from the Cape of Good Hope to the English Channel." This Blackwall frigate, transferred from the Indian to the Australian trade during the Gold Rush, "went missing" in 1853, with a large number of passengers and 68,390 ounces of gold dust on board. It is believed that members of a mutinous crew took possession of the ship and set her afire and were themselves lost, with the gold, either in the small boats or after landing on the coast of Brazil.

The *Owen Glendower* of 852 tons and the *Vernon* of 911 tons, both built at the Blackwall yard for the Greens in 1839, were said to have been launched with side paddles, but the machinery was removed and the idea of making them Blackwall frigates with auxiliary steam power was abandoned before they left the builder's yard. The *Owen Glendower* weathered successfully "the gale which proved fatal to the *Royal Charter*" according to the advertisements of the Blackwall Line of frigate-built packet ships.

The *Agincourt* of 958 tons, built by the Greens in 1841 at the Blackwall yard "after the model of the *Seringapatam*" (like other vessels constructed by the Greens and Wigrams at that yard during the period), is described as "a good wholesome 10-knot frigate." In the Australian trade, she made a passage from London to Australia and return (October 1861-July 1862), which was reported as "92 days out and 105 days home," but which occupied 102 days from the London dock (October 6) to Hobson's Bay (January 16) and 92 days to the Bay from Plymouth Sound (October 16); the ship required 10 days after leaving London to her departure from Plymouth. The *Agincourt*, on this passage, was 32 days from Plymouth to the equator and 52 days from Plymouth to the Greenwich Meridian. She did not go farther to the south than Lat. 43°, and in running her easting down her speed did not exceed 10½ knots. On the return passage, the ship passed through Port Phillip Heads March 18, 1862 (after 61 days' detention in Hobson's Bay and Melbourne), and her best day's run between the Heads and Cape Horn was 237 miles and best log speed, 10.4 knots. The Horn was passed April 22, when 35 days out, and the equator crossed May 26, when 69 days out. The Lizard was sighted July 1, when 105 days out, but an abstract log surprisingly reads under date of July 3: "3 A.M., arrived at Blackwall Pier; 4 made all fast in E.I. Docks. Piped to grog." Either this date of July 3 (107 days from Port Phillip Heads) or that of July 1 ("the Lizard sighted") seems incorrect. It is interesting to record the standard last entry of a Blackwaller logbook, "Piped to grog."

The sister ships *Prince of Wales* and *Queen* of 1,223 tons, built for the Greens and Wigrams, respectively, in their Blackwall yard in 1842, were veritable naval frigates adapted for merchant service and the carrying of troops and, it is said, "were pierced for 50 guns" in two tiers. They were big, heavy ships for their day and somewhat of a throwback to the ponderous but stately East Indiamen of the old Honourable John Company. British records say that in 1860 the *Prince of Wales* made a run out to Melbourne (presumably Port Phillip Heads or Hobson's Bay) from London (probably Plymouth, Start Point, or the Lizard) in 77 days, carrying 120 passengers and with a crew of 78 men. The *Alfred* of 1,291 tons, built by the Greens at Blackwall in 1845, was contracted to be constructed for the navy as a 36-gun frigate and was sold before launching by the admiralty to the Greens, who changed her while on the stocks to a merchant ship that carried 6 guns and a big crew of 90 men. In 1862-1863, the *Alfred* made a London-Melbourne voyage, leaving the East India docks in tow August 5, 1862, and on August 15 was off the Lizard. The ship crossed the line on September 20, 36 days out from the Lizard, and crossed the Greenwich Meridian on October 9, when 55 days out. She did not run far to the south and on October 28 made her best day's run of 265 miles in Lat. 41½° S., her best spurt speed by log being about 11½ knots per hour. The *Alfred* reached Port Phillip Heads on November 16, 93 days from the Lizard

and 103 days from London. Returning from Sydney, the ship passed through the Heads February 13, 1863, and, running for the Horn, was among icebergs in Lat. 52°-53½° S. (March 4-10). Cape Horn was passed March 19, when 34 days out, and the equator crossed on April 25, when 71 days out. The ship sighted the Lizard May 30 after a run of 106 days. On April 25, the *Alfred* sighted Wigrams' frigate ship *Sussex* of 959 tons, built at Blackwall in 1852, which was bound from Melbourne to London and was then 63 days out; the two Blackwall frigates, which were in company at the equator, spoke each other off the Lizard 35 days later, but the *Sussex* beat the *Alfred* by eight days in the run from an Australian port to the equator and to the Lizard.

General Sir William Butler, in his autobiography, tells of a "race" between two of Greens' Blackwall frigates from Madras, India, to Plymouth, England, in February-May 1864. General Butler embarked half of his troops on the *Trafalgar*, which sailed for home on February 10, and the other half on the *Lord Warden*, which left port ten days later, with himself aboard. A comparison of the two Blackwall frigates and of their passages to England, each similarly loaded, is given herewith:

| | TRAFALGAR | LORD WARDEN |
|--|---------------------------------|-------------------------------|
| Year built | 1848 | 1862 |
| Builder | Greens' Blackwall yard | Pile, Sunderland |
| Tonnage | 1,038 | 1,237 |
| Dimensions (length, beam, and depth in feet) | 173.6 x 36.5 x 16 | 210.3 x 36.6 x 22.6 |
| Sailed from Madras | Feb. 10, 1864 | Feb. 20, 1864 |
| At St. Helena | Mar. 29, 1864 | Apr. 15, 1864 |
| Arrived Plymouth | May 21, 1864 | May 21, 1864 |
| Run from Madras to St. Helena | Reported 47 days | Reported 54 days |
| Run from St. Helena to Plymouth | Reported 53 days | Reported 36 days |
| Total length of passage | 101 days (reported 100 days) | 91 days (reported 90 days) |

The amazing thing about this "race" is that the *Trafalgar*, sailing first, made a better run by seven days than the bigger and fourteen-year-younger *Lord Warden*; but leaving St. Helena seventeen days before her rival, the *Trafalgar* did not reach Plymouth until some two or three hours after the *Lord Warden* had dropped her anchor. The *Trafalgar* reported fairly favorable winds over the first section of the course and adverse sailing conditions thereafter; whereas the *Lord Warden's* log shows light airs and calms in the Indian Ocean and an average mileage covered of only 80 miles per day for the first two weeks. However, the winds were most favorable for her in the Atlantic, and instead of experiencing the usual head northeast trades in the North Atlantic, she had heavy favorable winds and reported a twenty-four-hour run of 320 miles between the Azores and the Lizard. Leaving Plymouth on May 22, the two Blackwall frigates sailed in company up the Channel to Portsmouth before a good westerly breeze, with neither ship showing any evident advantage over the other.

The *Lord Warden* is credited with some good passages in Greens' Blackwall London-Australia line, and as late as 1881 she reported a run out to Port Phillip Heads (Melbourne) of "79 days from Prawle Point." The frigate ship *Shannon* of 1,292 tons, also built by the Greens in 1862 (but at their own Blackwall yard and not by contract, as was the *Lord Warden*), was considered both a good uniform sailer and "a smart ship." She was operated in the Australian trade and, it is claimed, once made the round voyage between London and Melbourne (evidently land to land) in 5 months 27 days, including port detention. In 1879 she is credited with a 77-day passage from the Downs to Hobson's Bay. The Greens sold the *Shannon* to Sydney, N.S.W., owners in 1883 and the following year disposed of the *Lord Warden* to Fiume parties.

The *Malabar* of 1,219 tons, built for the Greens by Pile at Sunderland in 1860, is said to have been "a favorite trooper" in the Indian trade and in 1867 is credited with a passage of 89 days from the Bay of Bengal to Dover.

The Blackwall frigate *Lady Melville* of 967 tons was built for the Greens by Haswell at Sunderland in 1859. This ship was kept in the Indian service except during the height of the Australian gold boom, and she has been described as "a steady-going 11-knot ship, with no very fast passages to her credit," such as vessels of generally similar model and rig occasionally reported. In 1861, on an average voyage, she went out from the Lizard to Sand Heads (Calcutta) in 119 days and returned home in 124 days. The *Lady Melville* was sold by the Greens to Calcutta parties, was owned in Moulmein during the seventies, and was sold in 1880 to the Norwegians.

The fastest Blackwall frigates of the Greens were generally believed to be the *Alnwick Castle* (1,087 tons), *Clarence* (1,104 tons), *Windsor Castle* (1,087 tons), *Dover Castle* (1,002 tons), and *Anglesey* (1,018 tons); the first four of these ships were built by contract by Pile at Sunderland in 1856-1858, and the *Anglesey* was constructed by the Greens at their own Blackwall yard in 1852. It is asserted that the *Alnwick Castle* "held the record from the Channel to the Sand Heads, which she twice did in 68 days"; however, details are lacking and the authenticity of the claim decidedly questioned. Lubbock says that the *Clarence* "is credited with a run of 372 miles in 24 hours when bringing the 69th Regiment home from India in 1864"; but such a speed would seem to be clearly beyond the model capabilities of the Blackwall frigates, and it should be noted that this claim is made for a day's run on a homeward passage, where the ship would not receive the benefit of strong favorable westerly gales in the southern latitudes. The *Clarence*, however, was loftily sparred and very heavily canvased.

Lubbock says that probably none of the Green Blackwall frigates was "quite as fast as the little *Windsor Castle*" (1,087 tons), which, built in 1857, usually operated in the Australian trade. The sailing record of this ship, however, does not show any great measure of speed or many fast passages, although in her later days, after her spars and sail spread were cut down and stunsails removed, she made some good runs and on a winter passage (1880-1881) in the Australian wool trade actually beat three fast wool clippers on the run home, with a passage reported as 86 days from Melbourne to London. In 1871 the *Windsor Castle* ran from London to Melbourne, it is said, in 89 days and returned from the Heads to the East India dock in 93 days, following which she again went out in 93 days, but was reported as "83 days from the Lizard to Cape Otway." In 1874 the ship again went out from London to Hobson's Bay in 93 days, but her return passage from Sydney was disastrous. On her run to Cape Horn, she made 279 miles on August 22, 263 miles the next day, and 273 miles on September 3; but on September 17 she was partially dismasted, and on October 14 the ship had to put into Bahia, where cargo was discharged and the vessel repaired. Leaving Bahia on January 20, 1875, the ship developed serious leaks and headed for Rio de Janeiro, where she arrived February 2 and was placed in dry dock. The *Windsor Castle* finally arrived at Gravesend, at the mouth of the Thames, on April 28 after an eventful passage of 269 days from Sydney (52 days from Rio). Following this disastrous passage, the ship was thoroughly reconditioned and more conservatively rigged in the interest of safety and economy, but her new commander, Capt. John Smith, was a driver and "a nery sail carrier." In 1879 she ran from Start Point in the English Channel to Moreton Bay (Brisbane) in 89 days and, in 1881, to the same destination from Plymouth in 84 days; in 1880 she was 90½ days from Plymouth to Rockhampton and reported 78½ days out to Cape Wickham light.

The *Windsor Castle*, on her last passage under the Greens' flag, left Sydney loaded with wool on November 7, 1881. It is said that she sailed well, but sprung her mainmast in the North Atlantic on February 8 and "limped up to the Eddystone on 23rd February and docked on the 26th." The ship, therefore, was 93 days out when she ran into trouble in a W.S.W. gale (favorable as far as direction was concerned), reached the Eddystone 108 days out, and completed her passage in 111 days. The iron wool clipper *Loch Garry* of 1,493 tons, built in Glasgow in 1875, left Melbourne on March 11, four days after the *Windsor Castle*

sailed from Sydney, and the two ships were in company in the South Atlantic on December 23 soon after rounding the Horn. The *Loch Garry* was at the Isle of Wight on February 16, 1882, and reported a 97-day run home. Another iron wool clipper, the *Samuel Plimsoll* of 1,444 tons, built by Hood at Aberdeen in 1873, left Sydney on November 17, 1881, ten days after the *Windsor Castle*, and the vessels sighted each other on January 5, 1882, the iron wool clipper, in a run of 49 days, having gained ten days on the Blackwall frigate. The *Samuel Plimsoll* was at the Downs (London) on February 16 and reported a 91-day passage. On the run home of the *Windsor Castle*, she was 41 days from Sydney to Cape Horn; whereas the American clippers *Lightning* and *Red Jacket* had run from Melbourne to the Horn in 19 and 20 days, respectively. The *Windsor Castle* ran from the Horn to the equator in 31 days and crossed the line on January 18, 1882, 72 days out; whereas the big United States-built clippers had covered the distance in 40 and 42 days, respectively, in 1854, and the *Lightning* made a passage from Melbourne to Liverpool in 63 days, pilot to pilot.

The Greens' iron Blackwall frigate *Superb* of 1,451 tons, built at the Blackwall yard after Richard ("Dicky") Green's death, was placed in the Australian trade, and she is credited with runs out to Melbourne of 74 days in 1886, 76 days in 1881, and 79 days in 1878; these passages were evidently not from London to Melbourne but from some point in the English Channel to pilot. In 1883, instead of returning to London from Melbourne, the *Superb* went to Newcastle, N.S.W., and took coal from there to San Francisco in 51 days, sailing through the Golden Gate December 7 and arriving at Queenstown April 20, 1884, after a Cape Horn eastern passage of 135 days. The previous year the ship went home from Melbourne (September 14, 1882) to London direct by way of the Horn, taking a pilot at Dungeness December 27, when 104 days out and 102 days from Port Phillip Heads; the run from the Heads to Cape Horn was made in 36 days.

The second iron Blackwall frigate of the Greens, the *Carlisle Castle*, built in 1868 at their own Thames yard, was of 1,458 tons (length 229.8 ft., beam 37.8 ft., depth 22.8 ft.). She was described as "a fine steady-going ship" that made some good passages but no big day's runs and "was very wet if heavily pressed." Evidently, this ship, one of the last of her type, did not have the old bluff bow. In 1880 she is credited with a run of 74 days from the Lizard to Melbourne, and in 1877 she is reported to have made a passage of 80 days from the Lizard to Port Phillip Heads (Melbourne) and a return of 87 days to London. On this homeward run as one of the Australian wool fleet (after dry-docking and being especially prepared and manned for the race home), the *Carlisle Castle* left Port Phillip Heads at 7:00 A.M., November 23, 1877, rounded the Horn on December 20 (27 days out), with skysails, topmast, and lower stunsails set, sailed in company with several prominent British iron wool clippers, and arrived home February 18, 1878. She beat the time made of several wool clippers sailing within two weeks of her and was beaten on the run by only one of them, the *Mermerus*, according to the following British records of the race:

| Name of Ship | Tonnage | Year Built | Type | Departure | | Arrival London | Passage in Days |
|--------------------|---------|------------|-------------------|-----------|---------|----------------|-----------------|
| | | | | Port | Date | | |
| | | | | | 1877 | 1878 | |
| LOCH MAREE | 1,581 | 1873 | Iron wool clipper | Melbourne | Nov. 11 | Feb. 13 | 94 |
| MILTIADES | 1,452 | 1871 | Iron wool clipper | Melbourne | Nov. 16 | Feb. 21 | 97 |
| PATRIARCH | 1,339 | 1869 | Iron wool clipper | Sydney | Nov. 21 | Feb. 28 | 99 |
| CARLISLE CASTLE | 1,458 | 1868 | Blackwall frigate | Melbourne | Nov. 23 | Feb. 18 | 87 |
| SIR WALTER RALEIGH | 1,492 | 1876 | Iron wool clipper | Melbourne | Nov. 23 | Mar. 1 | 98 |
| SALAMIS | 1,079 | 1875 | Iron wool clipper | Melbourne | Nov. 24 | Feb. 19 | 87 |
| MERMERUS | 1,671 | 1872 | Iron wool clipper | Melbourne | Nov. 24 | Feb. 12 | 80 |
| CAIRNBULG | 1,567 | 1874 | Iron wool clipper | Sydney | Dec. 3 | Mar. 2 | 89 |
| CITY OF AGRA | 1,074 | 1860 | Iron wool clipper | Melbourne | Dec. 4 | Mar. 7 | 93 |
| OLD KENSINGTON | 1,777 | 1874 | Iron wool clipper | Melbourne | Dec. 7 | Mar. 7 | 90 |

The ships *George Thompson* and *Macduff* also participated in the Australian wool fleet race of 1877-1878. Each made the run from Melbourne to London, the former sailing November 9 and the latter November 12. The *George Thompson* was reported as arriving February 12, 1878, after a passage of 95 days, and the *Macduff*, leaving and arriving three days later (November 12-February 15), was also credited with a 95-day run.

It will be noted that of these twelve ships, the average reported length of passage was 92 days (maximum, 99 days; minimum, 80 days), that the time of 87 days made by the *Carlisle Castle*, although one week longer than the fastest run, was tied with that of the iron clipper *Salamis* for the second fastest passage of the group, and that the ships, many of which had a fine reputation for speed, did some surprisingly uniform sailing. The best day's run of the *Carlisle Castle* on this passage was 270 miles, and the greatest speed of which she was capable was not much more than 300 miles, or 12½ knots per hour, with favorable heavy winds; whereas the ship making the longest passage in the race, the pioneer Aberdeen iron clipper and White Star liner *Patriarch*, which ran home from Sydney in 99 days, is credited during her career with a day's run of 366 miles, with covering 2,060 miles in one week (an average of 294 miles a day for seven days), and with a spurt speed of somewhat over 16 knots per hour.

The last of Greens' Blackwall Line of sailing ships was the *Melbourne* of 1,857 tons (length 269.8 ft., beam 40.1 ft., depth 23.7 ft.), built of iron at the Blackwall yard in 1875. This ship, generally described as "the last of the Blackwall frigates," was a frigate type of ship in appearance and as far as original ownership and place of construction were concerned, but in essentials she was an iron medium clipper designed and built for the Australian passenger trade. Her model did not follow the traditional lines of a Blackwall frigate, for on her second passage to Melbourne (1876), when in the Roaring Forties, she is credited with covering 5,129 miles in seventeen consecutive days, an average of some 300 miles a day, her best runs being 374, 365, and 352 miles a day. This is clipper ship mileage and required a sharp clipper ship model to make such speed, as on occasions, it is said, she logged on spurts as much as 16½ knots per hour. The passage out from the London dock (June 10) to Melbourne, however, occupied 83 days notwithstanding her phenomenal sailing when running her easting down in the southern latitudes, although the run was reported as 77 days from Start Point to Port Phillip Heads and 76 days, land to land. The time reported from the meridian of Cape Agulhas to the Heads was 21 days, but the run from Gravesend to the equator required 32½ days. On her maiden passage, the *Melbourne* lost her fore-topmast and main topgallant mast when in the North Atlantic and about a month out, which probably delayed her a couple of days; but it took her 37 days to sail from Start Point to the equator, and her best day's run on the passage was 286 miles in the South Atlantic. The passage from Start Point to the Heads occupied 86 days (reported as 84 days), and on the return she passed through the Heads January 8, 1876, was off the Start April 19, when 102 days out, and reached London (after being towed for two days) on April 22 after a passage of 105 days from Port Phillip Heads. The *Melbourne* ran regularly in the London-Melbourne trade until 1887, and during this time, it is said, "her outward passages averaged 82 days" (evidently from Start Point to Cape Otway or the Heads). She was then sold to Devitt & Moore to replace the twenty-one-year-old *Parramatta* in the London-Sydney trade. The *Melbourne* arrived at Port Jackson December 27, 1887, for the first time and was reported as "94 days out from London." In mid-1888, prior to the commencement of her second voyage to Sydney, the new owners changed the ship's name to *Macquarie*. In 1903, Devitt & Moore sold the vessel to the Norwegians, who renamed her *Fortuna* and changed her to a bark, and at the start of the first World War she was a store hulk at an Australian port. The last of the Blackwall frigates never engaged in the Indian trade, but she was a popular Australian passenger sailing ship for some twenty-eight years and was a beautiful and impressive—as well as much photographed—vessel.

The Blackwall frigate *Kent* of 927 tons, built by Money Wigram & Sons in the Blackwall yard in 1852, was Wigram's pioneer ship in the booming British passenger trade to Melbourne, and she had a good reputation for speed in the Australian trade. This ship, advertised in the Melbourne press in 1856 as "The Magnificent armed Clipper ship *Kent*" of the "Blackwall Line of Packets," was no clipper at all but a typical moderate-lined Blackwall frigate laid down for the Indian trade. She had a rather full bow, the heavy square frigate stern, with large stern windows and quarter galleries, and great heavy outboard channels for rigging; she was built, however, with an unusually big sail spread, having lofty spars and a long bowsprit and jib boom even for a Blackwall frigate, a type of ship conspicuous for an abundance of head canvas. The Wigrams, in their Australian advertisement of the *Kent*, said: "This renowned Blackwall clipper now stands unrivalled in the accomplishment of no less than eight passages to and from Australia, the average duration of which has not been equalled by any vessel afloat." Such a statement gives a very erroneous idea of the vessel's speed. The *Kent*, according to her commander, was "a 12-knot ship, and had never logged 13 knots except possibly for a few minutes during a squall." Yet she did make fast passages from land to land and, in light winds, would "ghost along" when other vessels were motionless.

The *Kent* boasted of beating the fast Canadian-built clipper *Marco Polo* by a day from Australia to England, making the passage in 84 days from Melbourne to London. The records show that both ships left Port Phillip Heads on December 4, 1854, and had strong fair winds to Cape Horn, but very light weather in the Atlantic. The *Kent* dropped her mails off Hastings on February 27, 1855, when 85 days out, and the *Marco Polo* arrived in the Mersey on February 28, when 86 days out (the vessels reported 84 and 85 days, respectively). The *Kent*, in addition to having weather to her liking on the entire run from Cape Horn to Hastings, had no cargo and, with only ballast for stiffening aboard, drew but 14½ ft. of water; whereas the *Marco Polo* carried 1,000 tons of cargo in addition to passengers and drew 22 ft. of water. In 1859 the *Kent* ran from Plymouth or a Channel point to Hobson's Bay in a reported 83 days and apparently beat both the *Marco Polo* and the U.S.-built clipper *Blue Jacket*, which sailed from Liverpool a day after her, bound for Melbourne. On this occasion, Captain Clayton of the *Kent* was either very smart or lucky, for the course that he steered gave him a favorable wind of good strength all the way down the Atlantic from off Trinidad to around the Cape of Good Hope; whereas both the *Marco Polo* and *Blue Jacket* reported being held up by head winds, and they made a very slow run over this part of the course. In the Roaring Forties, the two clippers gained on the fuller-modeled Blackwall frigate, but the "hares" could not pick up enough mileage on the "tortoise," which was so far ahead of them when west of the Cape in the South Atlantic, to catch up with her before she reached Melbourne in a reported passage of 83 days. In the British China tea race of 1862, the clippers *Robin Hood* (852 tons) and *Falcon* (794 tons) were in company with the Blackwall frigate *Kent* (927 tons) near the Atlantic equator, and in a 27-day run to London (where all three ships arrived on October 13) the *Kent* actually beat her faster antagonists in both the sea run and arrival at the London docks. It is said that, although only an 11-knot ship, she was "a marvel in light winds and the merest zephyr gave her steering way"—a point of sailing where the light, sharp-ended, big deadrise, and heavily canvased British tea clippers were believed to be supreme and to hold a big advantage in the doldrums, light airs and calms over the heavier and bigger American clippers. The *Kent*, on her second passage out to Melbourne from London, reported a run of 78 days. On one occasion, because of her great ghosting ability in light airs, she is said to have beaten Donald McKay's big clipper *Empress of the Seas* on the outward run to Australia, even though the American clipper was an admittedly much faster ship, and in 1861 (June 1-August 6) she ran from Liverpool to Melbourne in only 66½ days. In the Australian trade, the *Kent* was certainly operated to make time as is proven by the fact that on one passage home Captain Clayton, when in a flat calm, actually attempted to row the ship through the calm belt,

building stages two feet above the water and using the ship's thirty small-boat oars for this purpose for two days, with volunteer passengers spelling the tired crew at intervals.

The *Southampton* of 971 tons, built by the Wigrams in the Blackwall yard in 1841, is credited with making good passages considering her model, and in 1860, when nineteen years old, she is said to have made two runs out from London (Channel port) to Melbourne in 74 and 84 days, respectively. Fast passages were claimed for the Wigrams' Blackwall frigates *Suffolk* and *Norfolk*, which were of 974 and 953 tons, respectively, and both built at Blackwall in 1857. The *Suffolk* is reported to have made a passage from London to Melbourne in 68½ days (some authorities say 70 days), but the run undoubtedly was from some point in the English Channel to pilot off the Heads. The *Norfolk* has also been credited with "a run of about 68 days to Melbourne," which was probably from land to land.

In the winter of 1854-1855, the American-built clipper *James Baines* went from Liverpool to Melbourne in 63 days and from land to land in 58 days—the all-time record. In 1858 the famous American Cape Horner *Young America* equaled this record 63-day run from Liverpool to Melbourne, and in 1859-1860 the United States clipper *North Wind* ran from London to Melbourne in 66 days. Lubbock, in *THE BLACKWALL FRIGATES*, gives a comparison between twenty reported performances of eighteen "London frigate-built ships" and twenty performances of nineteen "Liverpool clipper-built ships" on their passages out to Melbourne in 1860. The data presented show that the Blackwall frigate type of ships, sailing from London, averaged 1,013 tons and carried a crew of 57; while the Liverpool (and so-called "clipper-built") ships averaged 1,525 tons and a crew of 53, or 512 tons (50 per cent) more tonnage, with 4 (7 per cent) fewer crew. The Liverpool ships averaged 270 passengers, or about three times as many as the average of 93 passengers carried by the London ships; but Lubbock gives the average length of the twenty passages of the "frigate-built" London ships as 85 days, which is one day less than the reported average length of passage of 86 days for the "clipper-built" Liverpool ships. Of these twenty clipper passages, said to have been made by nineteen different ships, only seven passages were reported made by real United States-built clippers, and their average length of passage is given as 83 days (minimum, 78; maximum, 89), which cannot be verified by log records. These "Yankee-built clippers," with their stated passages, were: *Empress of the Seas*, 78 days; *Young America*, 79 days; *Blue Jacket*, 83 days; *Lightning*, 84 days; *Red Jacket*, 84 days; *Champion of the Seas*, 86 days; and *Ocean Chief*, 89 days. All were extremely fast "out-and-out" or medium clippers if given the spars, sail spread, crews, and command such as they carried originally; but by 1860 economy rather than speed was the word, the ships were not driven, and they were not even being kept in a good state of repair. The reported sailing performances of the eighteen Blackwall frigates (of from 851 to 1,444 tons) making twenty passages are so wonderfully good, considering the relatively full models of the ships, that the scientific accuracy of the "comparison" is naturally brought into question. Even though the list of "Liverpool clipper-built ships" contains many names of ships that were not clippers, most of the ships were known to be fast vessels, and such vessels as the United States-built clippers *Red Jacket*, *Lightning*, *Empress of the Seas*, *Young America*, *Blue Jacket*, *Champion of the Seas*, and *Ocean Chief* were top-flight extreme or medium clippers, while the Canadian-built *Marco Polo* and *White Star* had proved themselves to be clippers capable of making high speed and fast passages. It is evident that the length of passages in the Liverpool run is from the Mersey and on the London run is not measured from the Thames or from the Downs, but from some Channel point such as the Lizard or Start Point. However, it is surprising that twenty passages were made in one year by Blackwall frigates from points in the English Channel to the Heads off Melbourne that averaged only 85 days and ranged from a minimum of 70 days to a maximum of 98 days and that not a single reported passage reached 100 days. The twenty passages made in 1860 from London to Melbourne of "frigate-built ships," as tabulated by Lubbock, are as follows:

| Name of Ship | Passage in Days | Name of Ship | Passage in Days | Name of Ship | Passage in Days | Name of Ship | Passage in Days |
|-----------------|-----------------|--------------|-----------------|--------------|-----------------|-----------------|-----------------|
| SUFFOLK | 70 | ORWELL | 79 | DOVER CASTLE | 87 | ESSEX | 92 |
| SOUTHAMPTON | 74 | KENT | 80 | WELLESLEY | 88 | ROXBURGH CASTLE | 92 |
| PRINCE OF WALES | 77 | SOUTHAMPTON | 84 | AGINCOURT | 88 | MONARCH | 94 |
| LINCOLNSHIRE | 77 | SUSSEX | 84 | NORFOLK | 88 | MAIDSTONE | 95 |
| KENT | 78 | ANGLESEY | 86 | YORKSHIRE | 91 | OWEN GLENDOWER | 98 |

It will be noted that the *Suffolk*, with a run of 70 days, is credited in this list with the fastest passage of the "London frigate-built ships." The *Norfolk* is credited with an 88-day run, the *Kent* with passages of 78 days and 80 days, respectively, and the *Southampton* with two runs, one of 74 days and another of 84 days. Nine of the Blackwall frigates listed were of over 1,000 tons, four of over 1,100 tons, and three of over 1,200 tons; these were the *Monarch* of 1,444 tons, the *Prince of Wales* of 1,223 tons, and the *Orwell* (not generally classed by Lubbock as a Blackwall frigate of importance) of 1,220 tons.

C. Northcote Parkinson, in *TRADE IN THE EASTERN SEAS*, gave a typical British reading of the pages of history as it applies to ocean trade and the competition of Americans when he wrote:

The building traditions of the Indiamen were carried on in the later Blackwall frigates, and it is said that in 1857, when all the fastest ships procurable were racing out with troops to quell the mutiny, the American clippers made much slower passages than the frigate-built and cumbersome

Blackwallers. This was admittedly a case of knowledge against ignorance, but it serves to illustrate the contention that the increase of speed in the early nineteenth century was only partly the result of changes in naval architecture. The vital factor lay not in the ships but in the men on board them.

Three British-owned and British-manned American-built clippers of the Liverpool Black Ball Line of packets, generally engaged in the Australian service, took part in this movement of British troops to India, where London ships such as the Blackwall frigates were favorites with the army and had the benefit of masters and officers familiar with the Indian run. The *James Baines* and *Champion of the Seas*, the two biggest of this trio of Yankee clippers, sailed in early August from Portsmouth, experienced very light winds, and made runs of 101 and 102 days out to Sand Heads, Calcutta. The third American clipper, leaving some two weeks after them and enjoying more favorable breezes, caught up with her sisters and made the run out in only 87 days; the three ships, heavily laden with troops and supplies, reached their destination within a matter of hours of each other. But official British figures give the average time of the sailing transports making this emergency run as 120 days (as against 87 days for the *Lightning* and an average of 96 to 97 days for the three American clippers dependent on winds to make speed); whereas the average time of the ships equipped with screws and auxiliary steam power was $96\frac{3}{4}$ days, and the average length of time of the full-powered screw steamers making the run was 83 days. These figures indicate not only that the sailing performance of the American clippers was excellent, considering the wind, but also that no British vessel under canvas could sail with them over any part of the course. As further proof of the natural speed and superiority of American ships, on the return passage of the *James Baines*, laden with cargo from Calcutta to Liverpool, that ship made a run of only 77 days and established an all-time record for sail between an Indian and a British port. The American clipper *Hurricane* ran from Sand Heads, Calcutta, to Falmouth, England, in 1856 in 79 sailing days, and this followed a passage of this clipper from Portsmouth out to Sand Heads in 84 days. In 1854 another American clipper, the *Typhoon*, made the run from the Lizard to Sand Heads in only 80 days, which is better time than the full-powered screw steamers averaged over the course in 1857. Again, it is well to note that what Parkinson described as "frigate-built and cumbersome Blackwallers" were in

1857 by no means copies of the earlier ships of the East India Company. Whereas they resembled East Indiamen in coloring, with painted gun ports, they had no heavy poops and stern galleries, and some of the more modern Blackwallers had rather sharp models, carried a big sail spread, and in many respects could be rated as medium clippers.

The Blackwall frigate *Hotspur* of 1,142 tons (built at Smith's Tyne yard for T. & W. Smith in 1851) was a good, reliable sailer in the Indian trade and has been described as a ship with plenty of deadrise, bluff bows, and a fine run. It is said that "her utmost speed was about 12 knots"; yet on September 12, 1864, running her easting down in Lat. 42° S., it was claimed that she covered 328 miles in a 23½-hour day, which is a speed of a scant 14 knots per hour. Captain Toynbee of the *Hotspur* was an outstandingly capable, scientific navigator and a hard driver, and much of the ship's reputation for good and regular passages in the British-Indian trade was due to the ability of her commander to plot good courses and drive his ship to the maximum. It is said that her best passage out was made in 79 days from the Lizard to Madras and, on the run home, 85 days between the same points and that her average outward passages, pilot to pilot, were made in 90 days and homeward, about 91 days.

An examination of this ship's log of her passage from London to Calcutta in July-October 1863 shows that the *Hotspur* hauled out of the East India docks, London, on July 1, 1863. She discharged her pilot at 4:00 A.M., July 5, and was off Start Point at 10:00 A.M., July 6. On August 3, she crossed the Atlantic equator, and on that day the ship had strong favorable winds and covered 215 miles. She crossed the Greenwich Meridian on August 22, and on August 27 she was at Lat. 39° 43' S., Long. 24° 44' E. and reported 266 miles for the day. On September 1, she reached the farthest point south on the passage (40° 06') and made her best day's run (267 miles), reporting a heavy gale and "scudding under reefed topsails." On September 23, she anchored in Madras Roads at 2:00 P.M. and reported "79 days from the Lizard"; the next day the log reads, "8:30 A.M., up anchor and made sail." On September 29, the ship was becalmed and made no mileage. She received pilot on October 2, anchored on four different occasions, took steam tug *Fire Queen* on October 5, and moored off Esplanade, Calcutta, on October 7, 98 days out from London, after a passage of 89 days from pilot in the English Channel to pilot off Sand Heads and the Hooghly, which period included about a day's detention en route due to a stop at Madras. The *Hotspur*, on this passage, enjoyed excellent favorable winds and sailing conditions in general and did not run into light winds and calms until she neared her destination on September 29. For a period of fifty-one consecutive days, from August 3 to September 22 inclusive (covering a course of from Lat. 1° 22' N., Long. 15° 48' W. to Lat. 12° 09' N., Long. 81° 38' E., during which she rounded the Cape of Good Hope and went as far south as Lat. 40° 06' and as far west as Long. 27° 15'), the ship had only two day's runs under 100 miles, reporting 98½ miles on August 15 and 67 miles on September 7. The ship averaged 230½ miles per day for nineteen consecutive days (August 18-September 5), 240 miles for six consecutive days (September 11-16), 254 miles for four consecutive days (September 12-15), and 257 miles per day for the three days September 1-3 inclusive. Practically all of her fast sailing was in the Southern Hemisphere, although she had two day's runs of 215 miles and one of 200 miles in the North Atlantic, and just north of the equator in the Indian Ocean she covered 231 miles and 248 miles on two successive days. Her poorest sailing was in the North Atlantic when she covered only 378 miles in a week's time—an average of only 55½ miles per day. Both before and after this period, however, the *Hotspur* enjoyed good favorable winds and sailing conditions.

Captain Whall tells of the meeting of the *Hotspur* (with some five hundred-odd troops aboard), bound home from India, with the Adelaide Australian clipper *Murray* at Cape Town and of racing with her home to England. We are told that the ships were in company for eleven days running down to St. Helena, that they met again in 26° N. and were together again for six days, but that finally the *Hotspur* pulled away from her antagonist and made the Channel almost a day ahead of the Australian clipper. The *Murray* was of

903 tons, built by Hall, of Aberdeen, in 1861, and was the last Orient liner to be built entirely of wood. She was, therefore, ten years older and 239 tons (or 21 per cent) smaller than the Blackwall frigate *Hotspur*. The *Murray* was a sharp-ended ship and had a reputation for speed; she is credited with four consecutive passages out from Plymouth to Adelaide during the years 1861-1864 inclusive in 82, 79, 73, and 77 days, respectively. It is evident that T. & W. Smith, of Newcastle, when laying down the *Hotspur*, had modeled her, notwithstanding her bluff bow, with speed as well as seaworthiness, comfort, and carrying capacity in mind. Both contestants in the *Hotspur-Murray* race are reported to have made a speed of 12 knots per hour at times. The *Murray*, it is said, was capable of the highest spurt speed under sailing conditions (wind and sea) to her liking and in the Adelaide trade, running her easting down on one occasion, averaged $13\frac{1}{2}$ knots per hour for twenty-four hours.

The firm of Thomas & William Smith, shipbuilders and shipowners, had a liking for the Blackwall frigate type of ship and, during the years 1840-1861, built many of these vessels on the Tyne for its own account, of which, in addition to the 1,142-ton *Hotspur* (built in 1851 and lost in the Madras cyclone of 1872), the *Marlborough* of 1,402 tons (built in 1846), the *Blenheim* of 1,314 tons, which followed her two years later (and was laid down as a sister ship), and its last frigate ship, the *St. Lawrence* of 1,094 tons (built in 1861), were outstanding vessels. During the height of the Australian Gold Rush, the Smiths sent their popular Indian liner *Marlborough* out to Melbourne from London with 325 passengers aboard, and she is reported to have made the run from the Lizard to Hobson's Bay in 78 days. From Melbourne, the ship made a round voyage to India and back and then, with 60 passengers and gold valued at £288,000 aboard, made a homebound passage of $83\frac{1}{2}$ days from Port Phillip to Start Point in the English Channel. The run from the Heads (Port Phillip) to Cape Horn occupied 35 days, and the ship, with an entire crew of Lascars shipped in India, had the first crew of this type to round Cape Horn. The *Blenheim* was nearly lost in a cyclone in the Bay of Bengal in 1867. After discharging part of her British cargo at Madras, she was proceeding to Calcutta when the hurricane struck her and nearly finished the ship. The masts were cut away, and railroad iron in the hold shifted. The ship took a terrific list and leaked badly, so that there was 12 ft. of water in the hold; but under a jury rig the wreck of the *Blenheim* finally reached the pilot ground off Sand Heads, and a steam tug took her up the river to Calcutta.

The *St. Lawrence*, like her predecessors, was a wood ship and staunchly built. She was 180 ft. long, 37 ft. beam, and 22.5 ft. deep and a dry, comfortable sea boat of average speed for a frigate ship. In 1866 she is credited with "a 94-day passage from London to Calcutta," but the time was evidently taken from the Lizard to some point off Sand Heads before the pilot came aboard. The ship sailed from London July 14, anchored off the Indian coast October 22, and took a pilot aboard October 23, which would make a passage of 101 days from the London dock to pilot off Sand Heads and an even 100 days from London to anchorage off the Indian coast. The ship's best sailing was during the period August 18-27 inclusive, when she covered 2,289 miles in ten consecutive days—an average of 229 miles per day and 235 miles for the first eight of them. This was unusually uniform good sailing, with no fast spurt speed and no big day's runs, the maximum log speed being only about 11 knots per hour; the best day's runs were 245, 244, 236, 235, 233, and 230 miles, and the lowest of eight consecutive days was 226 miles and of the ten-day period, 203 miles. In 1867 the *St. Lawrence* left Calcutta in company with the Blackwall frigate *Winchester* of 1,157 tons (owned and built in 1862 at Sunderland by Marshall). Each vessel had half of a British regiment aboard, and they were at St. Helena and reached Spithead, England, together. In 1868 the *St. Lawrence* ran from Sand Heads to Cape Town in 40 days, was at St. Helena when 53 days out, and reported being 80 miles from Start Point when 95 days out. On her passage out to Calcutta in 1868, the ship dropped her pilot off Start Point on July 28 and took tug off Sand Heads on October 31, 95 days later, having experienced light weather and calms north of the equator in the Indian Ocean and Bay of Bengal. In 1869

the *St. Lawrence* went from Sand Heads to Start Point in 100 days (best day's run, 288 miles in favoring gales) and went back from Start Point (August 30) to tug off the coast (November 25) in 87 days. Her passage from the time of making sail at the mouth of the Thames to Calcutta (August 27-November 27) was 92 days, and her best day's run was reported as 297 miles. In 1870 the *St. Lawrence* left Sand Heads on January 21, was at St. Helena March 11, 49 days out, and on May 10, when 109 days out, reported herself as 18 miles from the Lizard, with "about 200 sail in sight, including [the Blackwall frigates] *Anglesey, Newcastle, Alnwick Castle, Shannon, Middlesex, Durham, and Alumbagh.*" Soon after the Suez Canal was opened (in 1869), it was apparent that the passenger trade of the Blackwall frigates to and from India (and Australia) was killed, so the firm of T. & W. Smith sold its sailing ships and went in for steam. The *St. Lawrence* ended her days in the Pacific, trading between Australia and Puget Sound in the lumber and coal business.

Historians rank "Willis' wonder," *The Tweed*, not only as the fastest of all Blackwall frigates but also as a ship that was "in a class by itself." She was constructed as a paddle-wheel steam frigate, the *Punjaub*, of the Indian Navy and launched April 21, 1854, at the Bombay Dockyard by the Parsee master builder, Cursetjee Rustomjee, of the Wadia family, which for well over a century in India had been prominent in shipbuilding. The *Punjaub* was said to have been modeled from the lines of an old fast French frigate, which was said to have been one of the finest products of French naval architects of the early nineteenth century. The material used for the *Punjaub* was Malabar teak, which, because of its natural oil, was the best and the most durable of all woods used in shipbuilding. As originally built, the *Punjaub* was a paddle-wheel steamer (700 H.P.) of 1,745 tons (length over-all 285 ft., registered length 250 ft., beam 39.6 ft., depth 25 ft.). Designed as a warship, she was armed with ten 8-inch 68-pounders. She was fitted with spars and sails as auxiliary power and was designed to be very fast under canvas alone. In 1855 the *Punjaub* took troops from India to the Crimean War and distinguished herself as a sailing vessel, making good speed and beating a fleet of transports even though "her fires were out and she was handicapped by her great paddle boxes." Later, she participated in the Persian War (1855-1856) and as a transport, etc., in the Indian mutiny (1857). In 1862 it was decided to convert the *Punjaub* into a screw steamer, and she was sent to England, the old Indian Navy having become merged into the British Royal Navy. On arrival in London, she was sold. She caught the very competent and experienced eye of Capt. John Willis, who bought her, converted her into a sailing ship, and named her after the river on which he was born.

The Tweed, on her first passage under Willis' house flag, went out to Bombay in 77 days with the Indo-European cable aboard, and in 1863-1864 she was connected with the Persian Gulf telegraph cable operations. Upon her return to Bombay, the vessel was completely refitted as a first-class passenger ship, and she carried passengers and troops during the sixties, sailing around the Cape of Good Hope in competition with steamers using the Red Sea and Mediterranean route via Suez before (and even after) the Canal was opened. In her early days as a trooper, *The Tweed* took the Seaforth Highlanders from India home to England around the Cape in 78 days. The ship was taken up year after year by the British Government to carry home invalid troops from India by water all the way (via South Africa), as the Red Sea route proved fatal to so many soldiers worn out by a long term of service in India. During these years (in which the ship distinguished herself as a transport by fast passages home from India, the small number of fatalities aboard, and the comfort of the troops handled), *The Tweed* made her outward passages to Australia or Calcutta and often an intermediate run to China ports. On one occasion, she raced with and defeated the mail steamer on a run between Hong Kong and Singapore. During the Indian famine of the seventies, this Blackwall frigate, with a real clipper model, made some outstandingly fast runs between Rangoon and Madras, carrying rice for starving Indians.

On her first passage to Melbourne, *The Tweed* was off the Lizard at noon September 6, 1873, crossed the equator on September 29 in Long. 28° W. after a run of 23 days, continued

west to Long. $34\frac{1}{2}^{\circ}$ on October 7, caught the strong westerly winds as she neared the Greenwich Meridian on October 21 in about Lat. 39° S., crossed the meridian of Cape Agulhas, South Africa, on October 26 in Lat. $43\frac{1}{2}^{\circ}$ S., and sailed between Lat. 45° and 47° S. from October 29 to November 13. She passed Cape Otway at 11:00 A.M., November 17, and anchored inside the Heads that evening after a passage of 72 days. The ship's best day's work when running her easting down was 300, 297, 288, and 280 miles (not on successive days), and on seventeen days of the passage she covered 250 or more miles in a day. On July 9, 1880, on a 75-day passage from London to Sydney, *The Tweed* made a day's run reported as 362 miles. In June 1874, the Blackwall clipper packet was taken up to carry emigrants to the booming colony of New Zealand and made a run out to Otago of 78 days. Her best day's runs were reported as 324, 320, 304, and 302 miles—but not on consecutive days. On February 17, 1876, *The Tweed* took her pilot off Dungeness, having made a splendid passage of 69 days from Sydney, from which port she had sailed on December 10, 1875 (the vessel was then in her twenty-second year). Although John Willis was the owner of the British clipper *Cutty Sark*, modeled after *The Tweed* and proclaimed by many as the fastest and greatest of all British clipper ships, yet *The Tweed* was always "Willis' beloved flagship." This great Indian-built steamer converted into a sailing ship (with seven yards on the fore and main and six on the mizzen when in her prime) was dismantled in the Indian Ocean off South Africa and seriously damaged in July 1888. She was broken up when thirty-five years old, and her teak timbers (frames and planking) were used in the building of a church at Port Elizabeth, South Africa.

The largest of all the Blackwall frigates built as sailing ships (which excludes *The Tweed* of 1,745 tons, reconverted from a steamer) was the *Parramatta* of 1,521 tons, built in 1866 by Laing at Sunderland and owned by Devitt & Moore. This ship, which was 231 ft. long, 38.2 ft. beam, and 22.8 ft. deep, was placed in the Australian trade and for years rivaled the Blackwall frigate *La Hogue* of 1,331 tons, built at Sunderland for Dunbar in 1855, for popularity and performance in the London-Sydney passenger service. The *Parramatta*, which was unquestionably the faster of the two vessels, left London generally in early September, took her passengers aboard at Plymouth, and usually was at Port Jackson in not much over 80 days after dropping her pilot in the English Channel. In 1876 and 1879, this ship is credited with runs of 79 and 80 days from Sydney to Plymouth; she was sold in 1888. The passages of *La Hogue* in the London-Sydney service, it has been said, "were extraordinarily regular, averaging about 90 days outward and a few more days coming home." Duncan Dunbar's fastest ship was the *Northfleet* of 896 tons, built at Northfleet on the Thames in 1853 to compete with American clippers, the Aberdeen clippers *Chrysolite* and *Stornoway*, and "Dicky" Green's clipper ship *Challenger*. The *Northfleet* was, in reality, a China tea clipper; however, she was frigate-built and a Blackwaller, but with very sharp lines. This ship is credited by the British with two runs out to Hong Kong from England in some 88 days in 1857 and 1858, although probably errors in timing occurred here, as they positively did in the claims made by the British press of a phenomenal run home from China in 1857. Nevertheless, the *Northfleet* was fast, but she was only a Blackwall frigate in appearance and ownership and did not figure in the Indian trade, being used entirely as a clipper in the China and Australia trades. While at anchor off Dungeness in January 1873 loaded with emigrants bound to Tasmania, this ship was rammed and sunk, with a loss of 293 lives, by the Spanish steamer *Murillo*, which steamed away and left her to her fate.

A Blackwall frigate named the *Holmsdale* of 1,257 tons, built by Reed at Sunderland in 1858, was owned for years by Phillipps & Company and participated in the India and China trades; later, she became an Orient liner and was placed in the Australian service, running out to Adelaide and returning home from Melbourne. In 1874-1875, she was credited with a run from Melbourne to London (pilot to pilot) in 83 days. On October 27, 1883, the *Holmsdale*, then owned by Anderson, Anderson & Company, left Melbourne in tow

bound for London; but it was November 2 before she dropped her pilot and tugs, made sail, and commenced her sea voyage. On the evening of February 10, 1884, she received a pilot off Dungeness "and proceeded up the Downs"—100 days after dropping her Australian pilot and 106½ days out from the Melbourne pier. Her best day's run was 280 miles on January 29 before favorable gales in the North Atlantic. Her other big days were 275 miles on December 14, 260 miles on November 23, 255 miles on each of November 19 and December 8, and 250 miles on November 20; she had no prolonged good sailing periods, but during the five consecutive days November 19-23 covered 1,180 miles (an average of 236 miles per day), and her greatest log speed was a scant 12 knots per hour. Her poorest day's runs, spread throughout the passage, were 16, 30, 40, 50 (twice), 53, 54 (twice), and 55 (twice) miles.

Joseph Somes was a prominent East Indiaman "ship's husband" in the days of the Honourable John Company and was one of the founders of Lloyd's. As before stated, he purchased some of the crack ships of the East India Company when the H.E.I.C. was required to go out of the shipping business and dispose of its fleet. Somes, however, did not confine his interests to the Indian or East Indian trade and operated vessels on the Seven Seas, including South Sea whalers. He hired his ships to the British Government for any purpose, including the transport of convicts; therefore, whereas he was intimately associated with the East India trade and owned many Blackwall frigates, all his ships were not of this type. The *Northampton*, credited with running from Start Point to Ridge Lightship in 72 days, and the *Leander*, which on her maiden passage is said to have run out to China in 96 days, were positively not Blackwall frigates, but were composite clippers of the British China tea type. Somes' *Leander* of 883 tons, built in 1867 by Lawrie at Glasgow, was one of the fastest British clippers of her day, but was unfortunate in having a captain who was too fond of his liquor. In the tea race of 1868, with a 109-day passage, she beat the *Taitsing* and *Titania*, which sailed virtually in company with her, each by seventeen days in the run from Shanghai to London, and in 1870 she made the fastest British tea run of the year (98 days) considering that she again sailed from the up-coast port of Shanghai. However, the *Leander* was definitely not a Blackwall frigate even in appearance and did not in any way resemble the Blackwall clipper frigate *Northfleet* (896 tons), built by Duncan Dunbar in 1852, except in her sharp underwater lines.

The Opium Trade

But little is known of the extent and operations of the opium trade, as it was generally illegitimate, immoral, and of the "bootlegging" variety, where publicity was taboo; therefore, the whole trade was wrapped in secrecy, and no authentic history is available outside of the guarded records of private individuals and interests.

The opium trade is popularly associated with China, the great consuming nation, but India was the big producer and exporter of the drug, and a special type of small, fast, well-armed and manned ship became necessary to transport opium effectively from Indian ports (primarily Bombay and Calcutta) to China and the Orient. In the early days of the organized traffic, which was controlled by the Christian Anglo-Saxons (a supposedly highly civilized occidental people, which the Chinese, evidently with some cause, designated as "barbarians," or "Fan kwae"—i.e., "foreign devils"), the opium carriers delivered their Indian opium to receiving ships lying off Portuguese Macao or at the Lintin and Cap-sing-

moon anchorages in the Canton River. After the Opium War (1842), Hong Kong, the island ceded to the British by China under duress in January 1841, became the main discharging port in the Orient for the valuable but feared and hated (as well as commercially desirable) Indian poppy drug. The opium trade was conducted in the waters of the Indian Ocean, Java Sea, and China Sea and, it has been said, "extended from Bombay to Korea, from Calcutta to Japan, and from Moulmein to Manila." However, the opium clippers generally carried the drug from Bombay and Calcutta to Hong Kong or anchorages on the Canton River via Singapore, returning to India with specie and, at times, some valuable Chinese wares. They made two or three round voyages per year and operated without regard to whether the monsoon was fair or adverse. The stately British East Indiamen made one passage a year each way in the China Sea, traveling north with the favorable S.W. monsoon and south with the N.E. monsoon. The opium clippers, however, to get their Indian drug to the Chinese market when and where it was wanted and to make as many profitable deliveries as possible, had a powerful incentive to ignore tradition, take chances in uncharted waters and "dangerous ground," with strong foul currents and fearful typhoons (a hurricane, or "circular storm," which the Chinese called "Teet-Kiey," meaning "iron whirlwind," and which is one of the worst, if not the very worst, forms of wind known in the world), and be prepared in calms and light airs to defend themselves, with ship and cargo, against attacks in the pirate-infested waters through which they had to travel.

Joseph Conrad has written: "The China Seas, North and South, are narrow seas. They are seas full of everyday eloquent facts, such as islands, sandbanks, reefs, swift and changeable currents—tangled facts that nevertheless speak to a seaman in clear and definite language." The captains of opium clippers, to make speed, had at times to run deliberately into shoal water to get the benefit of a land breeze and to get out of the strength of an adverse current; but reefs, sandbanks, and currents, whereas prime dangers in navigation, were only a part of their troubles, and the high percentage of casualties in the trade was due in large measure to pirates (pilongs) and typhoons. Lubbock says: "Quite a quarter of the [opium] clippers disappeared leaving no trace, and it is probable that fully a third fell victims to the pirate and the typhoon."

Other vessels of the opium fleet were the coasters, which delivered the Indian poppy drug to towns and villages along the whole length of the China coast and certain marine trading centers serving the whole consuming territory. These were usually small and light-draft but very fast and handy, well-armed and manned schooners and brigs. A third class of ships engaged in the opium trade consisted of "receiving ships," or floating warehouses, which were anchored at strategic and suitable geographic trade points and were usually Indian teak-built "country ships" carrying heavy guns like floating fortresses, big well-armed crews to fight off attacks of either pirates or hostile mandarins and government forces, and a large staff of schroffs to attend to the commercial transactions involved.

The Christian Portuguese began the importation of opium into China, "the land of godless infidels," from India to Macao in 1700, and in 1729 the Chinese made their first edict against the drug. In 1769 the British East India Company countenanced the opium trade, but as the drug was contraband in China, the directors ruled that their Indiamen should not carry opium. In 1773, however, Indian-built ships, known as "country" craft, began importing opium into China under the British flag, and in 1781 Warren Hastings, governor of Bengal, sent a cargo of opium to China. In 1785 the emperor of China sought to stop the traffic in opium by forbidding the export of silver in payment of the drug, and during the years 1799-1800 edicts were issued making opium contraband throughout China and definitely forbidding its sale; in 1809 a further edict was made forbidding the importation of opium into the country. In July 1811, however, the American brig *Sylph* of Philadelphia (Captain Dobell) reached Macao with a cargo of Turkish opium from Smyrna. As United States vessels could not get into the Indian opium trade because of the monopoly of the British, they introduced a new source of supply and profited greatly thereby for some

years, although the War of 1812 put a stop to the trade for several years, and the *President Adams* of Boston, with Turkish opium and specie aboard, was wrecked near Macao in October 1813. In 1815, Chinese dealers in opium were arrested by order of government officials at Macao and the American schooner *Lydia* searched for the drug, but this is believed to have been inspired by the British as an anti-American act, and evidently most of the Chinese officials could be "bought." In 1819 the British placed their first opium "receiving ship" at Whampoa, the port of Canton, and the following year the anchorage off Lintin became a rendezvous for outside shipping, especially for opium smugglers.

In the 1820's, the smuggling of opium into China through "foreign devils" associated with the authorized general trading points on the Canton River assumed such large proportions that the most careful secrecy, camouflage, and payments of graft to Chinese officials could not hide it. Europeans (primarily the British), Americans, and Indians (Parsees) became residents of China in increasing numbers, and usually the Britishers were consuls or vice-consuls, etc., of some unimportant trading nation. Dent & Company, a British firm that became important in the opium trade, was founded by Thomas Dent when he was registered as the Sardinian consul, and one of the early members of the company was Charles Blight, an American (who left the partnership, however, in 1827). James Matheson, an Englishman acting as Danish consul, went into partnership with William Jardine, a shrewd, hard-boiled Scotch doctor from the British East India service who settled in Canton in 1819, and the famous British firm of Jardine, Matheson & Company was formed to handle opium. On July 1, 1832, it took over the business of the old established firm of Magniac & Company (which consisted of the three brothers, C., H., and D. Magniac, and later of many associated partners). The chief American firm in Canton at this time was Samuel Russell & Company, founded in December 1818, which, at first, was an agency conducted by Samuel Russell and Philip Ammidon. A contemporary business associate, writing of Samuel Russell, says that he was a native of Middletown, Conn., and "a person of singularly gentle and benevolent disposition. There was about him a suavity and charm of manner, which under no circumstances ever deserted him." In 1830 the firm of Russell & Company, of Canton, was reorganized, and William H. Low, of New York, and Capt. Augustine Heard became partners. John M. Forbes joined the staff, with Capt. Robert Bennet Forbes, of Boston, later becoming head of the firm. (Captain Forbes's introduction to the opium trade was the taking of a load of Turkish opium from Smyrna to the Canton River in 1828.) The Parsees of India took an active part in the Indian China opium trade at an early date and had two important representatives at Canton in 1821. The Parsees, however, were closely allied in business with the British and were active in shipbuilding and shipowning as well as in trading. In addition to the officers and staff of the Honourable East India Company, it is recorded that in 1831 there were in the Canton, China, area twenty-six British, twenty-six Indian Parsee, and twenty-one American merchants. The "foreign devils" were not permitted to be resident or engage in trade in any other part of China, and the East India Company was supposed to have a monopoly of the British-Indian, Chinese, and Far Eastern trade, which it surely did not enjoy; moreover, the Honourable John Company would not permit its ships to handle contraband. Therefore, the British and Indian free traders, while engaged in the illegitimate opium trade, were not in competition with the great British East India Company.

It has been said by American writers that the Russell Company and the Forbeses, of Boston, were highly considered by the Chinese and were shown a marked consideration by the British. This was due to the fact that Houqua, the richest and most powerful Chinese merchant who traded with the foreigners, was very friendly to the American firm and certain individuals associated with it; but previous to the Opium War and the fifth decade of the nineteenth century, the only foreigners in the Orient that the Chinese really respected were the officials of the British East India Company—the great and "Honourable John Company." It impressed all Chinamen by its big, powerfully armed, and well-manned ships

(which were really naval vessels engaged in commerce and were impressively operated as such—with dignity and lavishness) and the apparent square-dealing, directness, and reliability of its officers and management. The British East India Company directors, management, and representatives were "honourable" men in the Chinese mind, and the designation "honourable" was reserved for them; all other British were "red-haired devils," Americans were "Hwa-ke," or "flowery-flag devils," Portuguese "Se-yang kwae," or "devils of the Western Ocean," and the Indian Parsees (who shaved their heads) were known as "white-headed devils." The members of the British East India Company, while enjoying an unprecedented theoretical monopoly with associated British Government favoritism and power, had, as Lubbock says, "a lordly way of carrying on business; they despised niggling and parsimony, . . . took infinite pains to carry on their business and all intercourse with the Chinese in the dignified and ceremonious fashion which was customary between educated people in China. They never acted hastily. They never acted pettily. Their attitude was one of solemn dignity and unvarying justice and honesty. . . . So great did the company's reputation for honest dealing become, that no case or bale stamped with its trade mark was ever opened or inspected by the Chinese, whether Customs officials or merchants." The stamped trade mark of the British East India Company in the shape of a heart, divided diagonally into four parts, each carrying a letter that together stood for the name of the company, was an accepted guarantee to all Chinamen that the contents of the case or bale so marked were "exactly what they were declared to be"; not only that but also "well up to sample," description, or classification as to quality. After the Opium War and with the British East India Company out of commercial maritime business and its ships sold, the Chinese, having felt the might of British naval power, kowtowed to all Britishers and called even disreputable Anglo-Saxons "honourable." Throughout the period of the operation of the Russell Company and the Forbeses in Canton and the days of their association and friendship with Houqua, these Yankees were honored and respected above all other foreigners with the exception of the H.E.I.C., but the Americans, like all other foreigners (other than the H.E.I.C. at the China end), did engage in the opium trade.

Although the British East India Company refused to permit its ships to carry opium to China inasmuch as it was contraband traffic, yet the company not only countenanced the trade and its shipment from India in ships other than those flying the company's flag but also organized and developed the cultivation of the poppy in India by the native chiefs and rajahs for export. The company also grew its own plants and produced its own opium at Patna and Benares, but it could never compete in quality with the Malwa product; so the H.E.I.C. bought up all the Malwa opium that it could lay its hands on, did all within its power to corner the Indian opium market, assessed duties, fixed prices, and sought in every possible way to control sales, prices, and shipments. Bombay, on the west coast, and Calcutta, which was the trading center for the Bay of Bengal region, were the principal shipping ports for opium, and the Parsees of Bombay were particularly interested in ships, shipping, and opium. The British East India Company relied for much of its revenues upon monopolies and trade in opium, cotton, saltpetre (the prime ingredient for gunpowder), raw silk, salt, etc.; it is said that the most important monopolies were those in opium and saltpetre and that the company relied the most upon opium and raw cotton for revenues. The production of each of the articles controlled by some form of monopoly required the employment of Indian labor, and the company, by its methods of payment for services, developed a form of serfdom and paid the producers low prices. There was said to be "a certain amount of oppression involved in the cultivation of poppies for the manufacture of opium," which article "was obtained from Bahar and Benares" and "very jealously monopolised." Parkinson, in *TRADE IN THE EASTERN SEAS*, says that the Bengal Government, through monopolies retained in its own hands, was required to dispose yearly of certain quantities of goods. Part was sent straight to England, part went to China and elsewhere, and "in the latter category opium was the only important item. It was a source of profit to

the company, but the actual carrying of it to China was left to private merchants who bought it at public auctions held by the Company." Parkinson also says:

There were four qualities of opium, Patna, Benares, Rungpore and Boggulpore, the first or "Company's opium" being the best. The amount exported from Bengal was increasing during the early part of our period [1793-1813], steadying down after 1805. The great increase was in 1799, when the

export more than doubled. It doubled again in the course of the period 1800-4, and then became fairly constant, the value of the annual export coming to about six million rupees, some three-fifths going to China and the rest to the Archipelago.

H. M. Elmore, an Englishman who saw service in India and the Far East ashore and afloat around the end of the eighteenth century and who wrote a book in regard to "the trade and navigation of the Indian and China Seas," says that Bengal exported a great deal of opium other than that sold by the East India Company, which was an infringement of the monopoly and a form of smuggling. Elmore describes typical voyages, commencing with taking possibly smuggled opium out of Bengal, stopping at Batavia and disposing of some of the opium by smuggling it ashore, and getting paid for it largely in spices, which were a monopoly of the Dutch East India Company and which were smuggled aboard in violation of oaths made to respect the Dutch laws and regulations affecting trade. The voyage ends with the landing of opium in China, where it is contraband, and the clever evasion of the Chinese tax on tonnage.

Admiral P. Rainier, R.N., said that the Indian-Chinese opium trade was one of "bold speculations, requiring caution and secrecy in the execution"; it was illegitimate and primarily the smuggling of contraband. Rainier, in a moment of exasperation and disgust, called it "mere buccaneering." Yet the Honourable John East India Company built its revenues upon the handling of the drug, and while in later years its ships honored the Chinese decrees and did not carry any opium nor its employees take part directly in the smuggling of the drug into China, the H.E.I.C. was behind the trade, fostered it, and encouraged other ship-owners, shipmasters, and merchants to carry the contraband to Chinese waters, where it could be smuggled ashore and the country flooded with the pernicious commodity. Furthermore, the British thought so highly of this trade that they fought wars with China that resulted in a great Christian power's compelling the Chinese by force of arms to trade in a noxious drug that they did not want and sought in the interest of the empire to exclude from their domains.

Parkinson says that opium was the parent of fast-sailing ships and reckless seamanship. It was a commodity in which there was a vast amount of speculation, and while immensely valuable, it was perishable and apt to deteriorate in quality by improper care as well as greatly fluctuate in price. An early market was always deemed highly desirable for the purchases of the drug in India; hence fast ships were in demand to take it to China, with no time lost in turning it over to smuggling Chinese in exchange for specie. When the shipment of opium to China was a seasonal affair, as it was during the H.E.I.C. days of trade monopoly and prior to the 1830's (when opium clippers commenced to make the run from Calcutta to the Canton River and back without regard to prevailing favorable monsoons), ships used to race from India to China "for the market" to get the benefit of high prices associated with the arrival of opium made from a new crop much as, later, the tea clippers raced from China to London to get the benefit in price of putting fresh teas in the British market. Opium was a difficult commodity to transport, as it was likely to be ruined by either heat or dampness; moreover, its quality deteriorated with age, and it was branded as "perishable." Ships carrying it from India to China found it advisable to take special precautions to protect it in order to preserve its quality and market value. We read: "The Indian opium ship had to be fitted with special compartments on the lower deck, carefully ventilated by scuttles and windsails and raised above the deck by battens placed athwartships to allow any water that got below to run clear to scuppers and the bilges." The opium itself "was wrapped in poppy leaves, placed in chests, and the chests were

covered with hides." The chest was the unit volume of opium shipments, and apparently a chest of opium weighed about 160 pounds.

Ships for the opium trade were first built in or around Calcutta, India, and of seven vessels that entered the trade during the years 1828-1832, five were built at Calcutta and nearby Howrah and Kidderpore in 1828-1831, one at Chittagong (on the northeast coast of the Bay of Bengal) as early as 1820 as a "country ship," and the seventh (*Falcon I*, a brig of 175 tons), which entered the trade in 1830, was built at Cowes, England, in 1815 and actually flew the colors of the H.E.I.C. Of the five ships built in Calcutta and environs for the opium trade during the early years of 1828-1831 inclusive, four were owned by Britishers and one by an Indian, and they ranged from the brig *Louisa* of 162 tons to the bark *Waterwitch* of 363 tons. The pioneer Bombay-built opium carrier was the bark *Sir Herbert Compton* of 346 tons, which was built and entered the trade in 1835 and was owned by Aga Sherazee.

The first new British-built vessel bought for the opium trade was the brig *Fairy* of 161 tons, acquired at Liverpool in 1833 by the Canton firm of Jardine, Matheson & Company and promptly sent out to China. (She arrived at Lintin in November 1833.) The *Fairy* is said to have been the first of the China coasters engaged in the opium trade. She left the Canton River anchorage on December 15, 1833, with a full cargo of opium for the receiving ship *Colonel Young*, which was stationed up the coast, and thereafter acted as a tender running between Lintin and the opium-receiving ships. In August 1836, returning south with specie received in payment for opium, members of the crew mutinied, killed the captain and officers, made for the Philippines, and, after landing the specie at Cavayan, scuttled the brig in deep water. In 1836 the famous Blackwall yard on the Thames built the brig *Antonio Pereira* of 140 tons for the Indian-Chinese opium trade, with Capt. William O. Young as reported chief owner. In that same year (1836), the first American vessel was sent out from Boston to operate in the opium trade. She was the brigantine *Rose* of 150 tons, built by Barney at Swansea, Mass., for Capt. R. B. Forbes and S. Cabot. She went out via the Strait of Magellan, Callao, and the Sandwich (Hawaiian) Islands and reached the Lintin anchorage on the Canton River April 25, 1837. She operated under the house flag of Russell & Company as a carrier of opium up the China coast and, on her first trip north, was loaded with "300 chests of opium valued at \$300,000." Capt. B. T. Foster, her commander, declared that the *Rose* was "the neatest craft in the opium fleet"; she was described by contemporaries as a Yankee clipper brigantine that was fast and handy and had proved her excellent seagoing qualities and sailing ability on her maiden voyage.

Of thirty-three vessels of the opium fleet that are known to have entered the trade during the years 1828-1839 inclusive and that ranged from 100 to 431 tons, twenty-two were built in India, six in Britain (excluding four captured converted slavers that may or may not have been British built), and only one (the *Rose* of 150 tons) in the United States. Of the Indian-built opium fleet, Moulmein in Burma built the bark *Sir Edward Ryan* of 320 tons in 1837 for Pybus and the three schooners *Clown*, *Harlequin*, and *Columbine* of from 143 to 146 tons in 1839 for Mackey. Of ninety-nine vessels of the opium fleet listed by Basil Lubbock in his excellent work, *THE OPIUM CLIPPERS*, the register covering marine tonnage that entered the trade during the years 1823-1860 inclusive is of interest for many purposes of comparison of the various craft, such as the rig (ship, bark, brig, brigantine, and schooner), and the tonnage varies from 50 tons for the small Hong Kong-built schooner *Celestial*, built in 1843 as an opium coaster, to 567 tons for the bark-rigged *Tartar*, built at the famous Blackwall yard in 1840 for the account of Green & Wigram, and 521 tons for the ship-rigged *Wynaud*, built on the Thames in 1854. The origin of the fleet was of such a diversified nature, however, that it commands attention. Fourteen of the vessels were built at Calcutta and vicinity (on the Hooghly), eight in Bombay and Mazagon, five in Moulmein (Burma), and two at Chittagong on the northeast shore of the Bay of Bengal—all of Indian teak; twelve

were built in the United States, nine at Cowes (famous for its sailing yachts), eight on the Thames at or near London, four at Aberdeen (the birthplace of British clippers), three in the Hong Kong and Macao area of China, three at Liverpool (on the Mersey), and one at St. Petersburg; six were captured and converted fast ex-slavers, and two were ex-sloops of the Royal Navy.

The Hooghly River (Calcutta, Howrah, Kidderpore) was probably the most active center of Indian shipbuilding in the 1820's and 1830's (at least numerically), and in addition to turning out some good "country built" coasters, these yards built some fast ships and early opium clippers. Other points on the Bay of Bengal with a good shipbuilding history were Chittagong and Moulmein, and all used good local teakwood. At Moulmein, the British built ships for service on the Seven Seas. The Bombay area, long ere this, had developed some shipbuilders that had become famous for their excellent construction and the quality of their designs (it was here that the famous clipper ship *The Tweed* was later built). Bombay built at least five opium carriers during the period 1835-1841 and Mazagon three during 1835-1843. It is said that three well-known opium clippers came out of the Bombay Dockyard and that they were "very smart sailers." Lubbock says that the first of these was the brig *Lady Grant* of 239 tons, built in 1835 and owned by Mottichund. She "astonished local shipping people owing to the unusual sharpness of her lines and tallness of her rig, and it was predicted that she would never live through her first typhoon"; but evidently the fears were groundless, for she gained a reputation as a fast sailer, especially in light airs, and does not seem to have encountered trouble by being overcanvased.

It is said that some of the Indian-built opium clippers were modeled after the United States privateer *Prince de Neufchatel*, a brigantine of 310 tons (17 guns and 150 men) and an outstandingly fast, handy, and successful vessel that was famous in the War of 1812. The *Red Rover*, built at Howrah (Calcutta) in 1829 exactly reproduced the model of that American privateer. Others followed the lines of the *Sylph*, built in 1831, also at Howrah, from a model prepared by the "Surveyor of the Navy" as being especially adapted for the Indian opium trade. The Indian builders also got ideas for their fast opium runners from the model of the 191-ton schooner *Syed Khan*, a slaver captured by the British in 1831, which was a Baltimore clipper of a type well adapted for either illegitimate trade or privateering. The lines of English racing yachts and Aberdeen clippers were also followed. One of the first of the opium fleet was the old and fast *Falcon (I)*, a brig-rigged yacht of 175 tons, owned by Lord Yarborough and built at Cowes in 1815; but the first clipper built at Aberdeen for the Indian opium trade was the schooner *Gazelle* of 121 tons, launched and put in the service in 1840. Probably the best-known Aberdeen clipper in the opium trade was the 144-ton schooner *Torrington*, owned by Jardine, Matheson & Company and built by Hall in 1845. The Mediterranean fruit schooners were generally speedy and handy little vessels and not only did some old fruiterers become opium clippers but also a schooner of this type, the *Time*, had her model copied in several of the vessels built at Moulmein, Burma, for the opium trade. Four well-known and fast British yachts, the two *Falcons*, built in 1815 and 1826, respectively, the *Anonyma*, a lofty brig of 257 tons, built in 1839, and the schooner *Royalist* of 141 tons, built in 1834 (all at one time belonging to the Royal Yacht squadron), ended their days as opium clippers. In addition to the Baltimore-built clipper topsail schooner that had been renamed *Syed Khan*, several other ex-slavers became opium clippers, and among them were the brig *Ann* of 252 tons, captured in 1834; the schooner *Psyche* of 100 tons, taken the same year; the brig *Black Joke* of 113 tons and the brigantine *Kelpie* of 109 tons, captured in 1836; and the schooner *Nymph II*, which, while taken by the British as a slaver as early as 1831, did not appear in the opium trade until 1845. Three vessels of the opium fleet were built in China—all in the Canton River area. The first of the trio, the 100-ton schooner *Harriet*, was built in 1836 and owned by Jardine, Matheson & Company, and the other two, built at Hong Kong, were the diminutive schooner *Celestial* of 50 tons, launched in 1843, and the *Undine*, a schooner of 143 tons, built in 1849.

What has been termed "the first vessel of the opium fleet" was the *Jamesina*, a brig of 382 tons and originally the brig *Curlew* (18 guns) of the Royal Navy, built at Bridport in 1811. She entered the opium trade in 1823. She was owned by the Magniac Bros. and Matheson, of Canton, and in the late twenties was re-rigged as a bark. The *Pelorus*, which entered the opium trade in 1843, was an ex-Royal Navy sloop of war, brig-rigged, of 380 tons, and a warship of the same class as the *Curlew*. In November 1839, H.M.S. *Pelorus* had been driven ashore in a hurricane and, after being refloated, had been taken to Singapore for repairs; following a survey, she was sold out of the service and, after reconditioning, entered the opium trade.

Of the eight or more well-known London-built vessels listed as belonging to the opium fleet, a few are known to have been built in the famous Blackwall shipyard, which was so closely identified with the British East India Company and the construction of its merchant frigates. During the period 1836-1839, the following four India-China opium ships were built by either or both of the Greens and Wigrams at their Blackwall yard:

| Name of Opium Carrier | Year | | Rig | Tonnage | Dimensions in Feet | | |
|-----------------------|-------|---------------------|------|---------|--------------------|------|-------|
| | Built | Entered Opium Trade | | | Length | Beam | Depth |
| ANTONIO PEREIRA | 1836 | 1836 | Brig | 140 | 94 | 21.4 | 10.8 |
| TARTAR | 1840 | 1840 | Bark | 567 | 125.4 | 26.5 | 19.6 |
| PRINCE ALBERT | | 1841 | Ship | 303 | | | |
| PRIMA DONNA | 1839 | 1842 | Ship | 222 | 88.6 | 20.9 | 15 |

Capt. William O. Young was the reported owner of the *Antonio Pereira*, but London and Calcutta merchants were heavily interested in her. The *Tartar* was built for the account of Green and Wigram; while the owner of the *Prince Albert* was recorded as Shepherd, and the *Prima Donna* flew the flag of Dent & Company.

Many noteworthy opium clippers were American built, and a good-sized fleet was owned by Americans, of whom Russell & Company was by far the most important. (With Russell & Company were associated the Forbeses, of Boston, and for a time the Lows and their friends, of New York.) Among the United States-built vessels in the opium trade can be mentioned the following:

| Name of Opium Carrier | Year Entered Trade | Rig | Tonnage | Builder and Year Built | Owner |
|-----------------------|--------------------|------------|---------|--------------------------------------|---|
| ROSE | 1837 | Brigantine | 150 | Barney, Swansea, Mass. 1836 | Russell & Co., Canton and Boston |
| ANGLONA | 1841 | Schooner | 92 | Brown & Bell, New York 1840 | Russell & Co., Canton and Boston |
| ARIEL II | 1841 | Schooner | 98 | Sprague & James, Medford, Mass. 1841 | Jardine, Matheson & Co., Canton and Britain |
| MAZEPPA | 1842 | Schooner | 175 | Brown & Bell, New York 1842 | Jardine, Matheson & Co., Canton and Britain |
| ZEPHYR | 1842 | Schooner | 150 | Samuel Hall, East Boston 1842 | Dent & Co., Canton and Britain |
| SPEC | 1842 | Schooner | 105 | New York 1840 | Pybus Bros., Canton and Britain |
| ANTELOPE | 1843 | Brig | 370 | Samuel Hall, East Boston 1843 | Russell & Co., Canton and Boston |
| DON JUAN | 1843 | Schooner | 175 | New York | Russell & Co., Canton and Boston |

(Continued on next page)

| Name of Opium Carrier | Year Entered Trade | Rig | Tonnage | Builder and Year Built | Owner |
|-----------------------|--------------------|----------|---------|---|-------------------------------------|
| COQUETTE | 1844 | Bark | 457 | Samuel Hall, East Boston 1844 | Russell & Co., Canton and Boston |
| FROLIC | 1845 | Brig | 212 | U. S. A. | Russell & Co., Canton and Boston |
| MINNA | 1851 | Schooner | 300 | George Raynes, Portsmouth, N. H. 1851 | Russell & Co., Canton and Boston |
| BRENDA | 1852 | Schooner | 300 | George Raynes, Portsmouth, N. H. 1852 | Russell & Co., Canton and Boston |

The *Anglona*, *Mazeppa*, *Spec*, and *Don Juan* were of the New York pilot-boat type, and the *Zephyr* was built as a yacht of pilot-boat model. The *Spec* was originally the *Flying Fish* (96 tons) and had been tender to Commodore Wilkes's expedition, but was sold to Captain Pybus at Singapore in January 1842. The *Spec* (so named because she was bought as a speculation) was a beamy boat with only four sails—all fore and aft—consisting of jib, foresail, and lower fore (with gaff) and main (with gaff and boom). She was 85.6 ft. long and 22.6 ft. beam; whereas the much larger *Mazeppa* was 92.5 ft. long and only 20.5 ft. beam. The relatively big *Coquette*, of a model whittled by Capt. R. B. Forbes for the opium trade, was also a very beamy "clipper barque," being 116 ft. long, 29.9 ft. beam, and 16.3 ft. deep.

Many American pilot boats were sent out to China, and some, such as the Boston boats *Golden Gate* (90 tons), *Siren* (90 tons), and *Daniel Webster* (75 tons), were not used for opium running or coastwise trading, as these three craft operated as pilot boats on the Yangtze. Other American-built vessels are known to have participated in the opium trade, and among them were the brig *Cadet* and the Baltimore-built schooner *Dhaulle*, which, it was said, "distinguished herself by succeeding in reaching Macao in the teeth of the monsoon" and was the first vessel to score a "conquest of the N.E. monsoon" and pave the way to year-round commercial sailing in the China Seas without regard to the seasons of the year and prevailing winds and currents. Capt. Arthur H. Clark wrote in 1910 that the Boston-built *Antelope* "still has the reputation of having been the only square-rigged vessel which could beat through the Formosa Channel against the northeast monsoon." She was owned by the Forbeses, of Boston, and Russell & Company, of Canton, and under the command of Capt. Philip Dumaresq, a native of Maine (Kennebec River). Clark says that in 1833 the British brig *Jamesina* (an old but fast sloop of war of the Royal Navy) "sold opium from India to the value of £330,000 [some \$1,600,000] at Foo Chow, Amoy, Ningpo and other ports in China" and that "this business increased and attracted the attention of the American merchants in China." The fast American-built vessels sent out to China by the Forbeses in the late thirties and early forties, we are told, "soon controlled the opium trade and became known as opium clippers." The earliest competition between American and British so-called clippers evidently was in the China Sea, but this was before real clippers were built. As early as 1840, an Aberdeen schooner, the 121-ton *Gazelle*, entered the opium trade. Constructed a year after the *Scottish Maid*, the *Gazelle* was described when built as "a much finer-lined vessel than the *Scottish Maid*." A poorer sailer than anticipated, the *Gazelle* was evidently a beautiful schooner, but was unlucky and not outstandingly successful. The *Scottish Maid*, launched in 1839, was said to be Alexander Hall's pioneer Aberdeen clipper and "the first clipper constructed in Great Britain."

In 1845 the Halls launched the 144-ton schooner *Torrington* at Aberdeen for Jardine, Matheson & Company, and it was announced that she had been designed and built "to compete with the American opium clippers" in the Indian China trade. This schooner was

104.6 ft. long, 20.2 ft. beam, and 11.2 ft. deep. In 1846, when she started running up the China coast with opium, she was described at Hong Kong as "the first British clipper to sail in the waters of the Far East." The nearest approach to an American clipper in the opium trade at the time that the much-vaunted *Torrington* appeared on the scene was the *Coquette*, a pre-clipper bark built by Samuel Hall at East Boston in 1844; but Captain Clark says that in the mid-forties "almost every British and American firm in China owned one or more of these smart vessels" (popularly known as "opium clippers"), and he adds, "The competition among them was keen, and the American clippers had decidedly the best of it." The British opium clipper *Torrington* had only a short life, for in 1849, when some four years old, she "went missing," the victim of either pirates or a typhoon.

The Baltimore type of topsail schooner clipper should have been very satisfactory as an opium clipper, and it is surprising that vessels of this class do not appear in any register of the opium fleet. However, some of the ex-slavers were undoubtedly the product of Chesapeake yards, and it is said that the *Nymph II*, a square two-topsail schooner of 106 tons, which entered the opium trade in 1845, and the *Kelpie*, a brigantine of 109 tons, which joined the fleet in 1842, captured and condemned as slavers in 1831 and 1836, respectively, were built in Baltimore and were "handsome, exceedingly speedy and handy vessels." Between the time that the *Nymph II* was condemned as a slaver at Sierra Leone in 1831 and was acquired by Capt. Thomas Horsburgh for the opium trade in 1845, the schooner was a yacht owned by the Earl of Yarborough.

Capt. William Clifton has been called "the father of the British opium clipper" because he was the owner and skipper of the *Red Rover* (254 tons). She is said to have made three voyages in 1830 between India and China, for which he was honored by the Calcutta Chamber of Commerce and presented with £10,000 in cash and inscribed silverware. But the *Red Rover*, built on the Hooghly River at Howrah (near Calcutta) in 1829, had the identical model of the New York privateer *Prince de Neufchatel*, which had a magnificent record for fast sailing, handiness, and fighting in the War of 1812, so Britain's claimed pioneer opium clipper was of an American design and Indian built. The year (1830) that brought the *Red Rover* into prominence in the Indian-Chinese opium trade saw the first steamer to operate in oriental waters—the side-wheeler *Forbes*—undertake to tow the opium carrier *Jamesina* (a 382-ton brig), with 840 chests of opium aboard, from Calcutta to the Canton River via Singapore. This towing experiment was made during the period of an adverse monsoon, as it was firmly believed, until the *Red Rover* did it, that "sail could not conquer the monsoon in the China Seas."

The name of this pioneer steamer in Chinese waters—*Forbes*—is of significance, for it was prominent in Calcutta and Bombay as well as in Boston, Mass. A large and well-built teak ship, the *Charles Forbes*, was launched at Calcutta in 1821 for Indian owners, and later she became an opium-receiving ship, flying the colors of Dent & Company. The early steamer, or tugboat, *Forbes* was of 302 tons, built of teak and fitted with two 60 H.P. Boulton & Watt British engines of 48-in. stroke and a copper boiler. This steam side-wheeler was launched January 29, 1829, at the new Howrah dockyard, Kidderpore, Calcutta, for Mackintosh & Company, and it is said that she was especially designed and built to tow a sailing ship in the opium trade from Calcutta to Hong Kong. James Forbes sailed from England in 1765 to seek his fortune in India as one of a group of nineteen promising young men. He made his fortune in trade and shipping and returned to England with a competency and retired in 1784, when only thirty-five years old. At that time, seventeen of his original fellow adventurers were dead, and another later died in India. While very young, he was the only survivor of the "original nineteen" and the only one that ever saw England again. His business affairs in India continued after his departure and evidently relatives joined him or went out independently, for in addition to the Forbeses prominent in shipping in Calcutta, the house of Forbes & Company was the leading shipowner and manager in Bombay at the end of the eighteenth and during the first part of the nineteenth centuries. The Forbes

family of Boston and particularly Capt. Robert B. Forbes did more than anyone else to give prestige to American ships in China. Basil Lubbock, the British marine historian, has said:

It was Captain Robert Bennet Forbes who introduced the famous American pilot-boat model into the [opium and Chinese coastal] trade and was responsible for practically every American-built clipper in Chinese waters. He was one of those live wires who, in an age of heroic pioneering, was the life and soul of every undertaking in which he

found himself. His chief interest was not money-making or even helping on the march of what our ancestors were pleased to call civilization, but in the improvement of ship design. He was a sailor from truck to keel, and even when he was the head of Russell & Co. his heart was on the sea.

This eulogy is warranted, but it is too much to say that the able Capt. Robert B. Forbes "was responsible for practically every American-built clipper in Chinese waters"; for another American captain-designer, Nathaniel B. Palmer, an experienced navigator in Chinese trade, was personally responsible for the model and sail plan of the *Houqua*—one of the real pioneer China clippers—and for other early bigger clippers in the China trade, such as the *Samuel Russell*, *Oriental*, and *N. B. Palmer*. However, these ships were, of course, far too large to be interested in opium carrying, as were the many other pre-clippers and early clippers built in New York and Boston yards for the China trade and such outstanding real clippers as the New York-built *Rainbow* and *Sea Witch*, which, nevertheless, were American ships designed solely for the China trade. The Low brothers, Captain Palmer, and other New Yorkers dabbled in the Indian-Chinese opium trade, but Russell & Company and the Forbeses, of Boston, with their many associates, for long years featured and were leaders in this illegitimate business.

Robert B. Forbes (born in 1804) was a nephew of the Perkins brothers, of Boston, leading shipowners and merchants. When only thirteen years old, he first went to sea in the Perkins bark *Canton Packet* and was master of the *Levant* (264 tons) when twenty years old. In early 1827, Forbes made a trip up the China coast "in search of a new opium market" and the next year brought the first cargo of Turkish opium from Smyrna to the Canton River. In 1830, Captain Forbes bought a burdensome ship on the stocks at Medford, named her the *Lintin*, and took her out to China for use as an opium-receiving ship to be anchored in the river. Upon his arrival at Canton, the old American house of Samuel Russell & Company was reorganized, and Captain Forbes became identified with it. He bought the fast 150-ton New England-built brigantine *Rose* (which he named after his wife) and sent her out to China from Boston in November 1836 as an opium clipper. Affairs were not going very well in China, and in June 1838 Captain Forbes chartered the bark *Mary Chilton* and sailed for the Orient. After his return to the United States in the *Niantic* in December 1840 (during the British-Chinese Opium War), Captain Forbes began looking for fast schooners for the clipper and coastal services in China, and the first vessel that he sent out to Russell & Company was the New York pilot-boat *Anglona*, a flush-decked 92-ton fore-and-aft schooner, which he intended for use as a dispatch boat running between Hong Kong, Macao, Lintin, and Whampoa. After the Opium War, this schooner was used for coasting. Captain Forbes bought a Medford-built schooner named *Ariel*, which had been designed by Lee, who was responsible for Forbes's pioneer opium "clipper" *Rose*; but the 98-ton topsail schooner *Ariel*, as originally built, was far from being a success, and Forbes had a big job to make her stable and seaworthy. Eventually, he sent her from Boston in July 1841. She made a fine run of 80 days to Anjer, and Forbes sold her to the British firm of Jardine, Matheson & Company, of Canton.

In 1842 Captain Forbes sent the fast and "smart" schooners *Zephyr* and *Mazeppa* out from Boston and New York, respectively, to China and upon arrival sold the *Zephyr* to Dent & Company and the *Mazeppa* to Jardine, Matheson & Company, of Canton, both British firms interested in the opium trade. The *Zephyr*, originally intended for use in oriental waters, was a Boston-built yacht with a pilot-boat model and carried nine 18-pounder brass guns and a 68-pounder pivot Armstrong amidships. The *Mazeppa*, described as a "clipper schooner," was built for A. A. Low & Bro., New York, and Forbes bought an interest in her

so that he could send her to Canton "on spec." In 1843, Captain Forbes sent out the *Antelope*, a brig of 370 tons, which was described as "one of the fastest merchant vessels of her size ever floated" (until she was changed into a bark). She was intended for the Indian run and the opium trade, and at the same time that Russell & Company added the *Antelope* to its fleet, Jardine, Matheson & Company launched the queen of its deep-sea opium clippers, the *Lanrick* of 283 tons, built on the Mersey and named after Jardine's Scottish home. The American-built and owned *Antelope* and the British-built and owned *Lanrick*, which both entered the opium trade in 1843, were rivals, and both were fast, outstanding brig-rigged seagoing vessels. On their maiden passages, the *Lanrick* went from London to Bombay in 106 days; while the *Antelope* (Capt. Philip Dumaresq) made the run from Boston to Bombay in 94 days, and when loaded with her first opium cargo bound for Hong Kong, she outsailed the fast crack U.S. frigate *Brandywine*. The *Lanrick* gained a reputation for beating British warships in speed tests at sea. She was armed with eleven 9-pounders, and "on one of her voyages she carried 1,250 chests of Bengal opium valued at £200,000 sterling" (a scant million dollars).

The *Coquette* is said to have been personally modeled by Captain Forbes, just as the *Houqua* was built from a model whittled by Capt. "Nat" Palmer. The *Coquette* was built by Samuel Hall, East Boston, and left Boston June 29, 1844, for Macao Roads and delivery to Russell & Company. Under Capt. Oliver Eldridge, she went out in 76 days to Anjer and 99 days to Macao, but she had a defective mainmast that had to be reinforced soon after leaving Boston, nursed throughout the passage, and replaced upon reaching her destination. Leaving Macao Roads December 3, 1844, the *Coquette* ran to Singapore in 9 days and was 10 days thence to Sand Heads, this run of 19 days at sea being unusually good and about record time. After the first opium sales, the *Coquette* left Calcutta and dropped her pilot January 22, 1845; she was 15 days to Singapore and reached Macao February 28, beating up the western side of the China Sea against the adverse monsoon in 23 days and covering 4,800 nautical miles on the complete passage in 38 days—an average of 126½ miles per day and 5¼ knots per hour. Later in the year, the *Coquette* left Sand Heads September 8 and Singapore September 20 and reached Hong Kong October 4, taking only 26 days from Calcutta to Hong Kong, pilot to pilot, and only 14 days on her run up the China Sea. The average of nineteen known opium clipper passages from Bombay to Hong Kong in 1845, of which there are available records, was 46¾ days and of five similar passages from Calcutta to Hong Kong, 35½ days. These passages ranged from 26 days for the *Coquette* (September-October) to 72 days for the 201-ton English-built and Indian-owned brig *Anna Eliza*. The *Coquette* made the fastest run of the opium fleet from China to India (known as the homeward passage) in 1845, making the passage from Hong Kong to Sand Heads (Calcutta) in 31 days and reaching Singapore in only 7 days from Hong Kong. In 1847 the *Coquette* ran from Bombay to the Canton River in 39 days (April-May) and in 1848 made a 35-day passage from Calcutta to Hong Kong (May-June), during which she sustained some damage in a collision with the steamer *Pekin*.

In late August 1849, the *Coquette* left Shanghai for Hong Kong, with river mud as ballast, and "went missing." Whether she was the victim of pirates or of a violent typhoon is unknown, but 1849 was a disastrous year for shipping in the China Seas, and in addition to several ordinary trading brigs and schooners the following seven well-known opium clippers "went missing": *Sylph*, *Anna Eliza*, *Grey Hound*, *Mischief*, *Don Juan*, *Kelpie*, and *Coquette*. Of these seven opium clippers that disappeared in 1849 leaving no trace behind them, the first three were evidently captured and destroyed with their crews by the notorious pirate Shap'ngtzai (admiral of a fleet of Chinese buccaneers), and the loss of the other ships was attributed by contemporaries to one of two of the large pirate squadrons of unusual daring then known to be operating. However, it was felt that, in the case of the *Coquette*, a fierce typhoon of September 13 may have overwhelmed her and the bark capsized because of the shifting of her mud ballast. The vessel's owners never accepted this suggested explanation of her loss. They chartered and sent out the P. & O. steamer *Canton* to search

for her, but not a trace of the *Coquette* or of any of the other opium clippers that "went missing" in 1849 was ever found.

Some records suggest that the American-built opium clipper *Frolic*, a 212-ton brig owned by Russell & Company, Canton, was running from India to China with the drug as early as 1843-1844, and it is known that in 1845 she carried a cargo of opium from Bombay to Hong Kong in 36 days (May 8-June 13), making a good run and the second fastest of five opium passages to China of vessels that cleared Bombay during the period May 6-18. On September 13, 1845, the *Frolic* again sailed from Bombay for the Canton River, opium laden, and made a passage of 44 days, which was four days faster than the *Anna Eliza*, which sailed two days before her, and eight days faster than the *Sir Herbert Compton*, which sailed three days after her. There were twenty-two homeward passages from Hong Kong to Bombay in 1845 that ranged from 35 to 103 days and averaged 54 days. The *Frolic* made two of these runs. Her first, in June-August, occupied 51 days, but was the fastest passage to Bombay with a sailing from China between April 1 and October 15. On her second 1845 run, from Hong Kong to Bombay, the *Frolic* sailed November 17 and reached Bombay December 22 after a passage of only 35 days, which was the fastest run of the year.

Russell & Company's last two American opium clippers were the 300-ton sister topsail schooners *Minna* and *Brenda*, built by George Raynes at Portsmouth, N.H., in 1851-1852. It is said that these vessels ran from India to China with opium, and Lubbock says: "For some years these two beautiful sister American clipper schooners were well known on the China coast though they were not kept entirely to the opium trade. Besides plying across the Pacific to the Golden Gate and Callao, they also took a hand in the opening up of Japan, and as early as the summer of 1853 we find *Brenda* under Captain Stone taking coals from Hong Kong to Nagasaki." The *Brenda* crossed the Pacific in early 1853, and the *Minna* traded from China to North and South American Pacific ports in 1853, made a voyage to Australia in 1854, and was engaged in trade between China ports and San Francisco until the spring of 1856, when she was employed in the China coastal trade.

The opium clippers carried heavy armaments and big crews for merchantmen because they always had to be ready to fight Chinese, Malay, or Dyak pirates, which were generally numerous in man-power and fairly well armed. Being racing ships, with speed deemed an important means of protection against flotillas of pirate junks, the opium clippers needed large crews to work them as well as to fight. The Indian-built bark *Rob Roy* of 352 tons, launched at Howrah in 1837, had a complement of 80 men; the *Anonyma*, a brig of 257 tons, had 74 hands aboard; while the *Falcon II*, a ship of 351 tons, the *Cowasjee Family*, a bark of 431 tons, the *Sir Edward Ryan*, a bark of 320 tons, and the *Sylph*, a bark of 304 tons, each carried a crew of 70 men. The *Hellas*, a schooner of only 209 tons (length 91.4 ft., beam 23 ft., depth 15 ft.), had a complement of 45 men, which was a large crew for a vessel of her size and rig. We are told that a Jardine, Matheson or Dent coasting schooner of under 200 tons that carried either opium or specie had, in addition to a captain and three mates (whose pay was "about double that paid the officers of a first-class merchantman of six times her size"), some 18 or 20 European A.B.'s (who received \$45.00 per month), the usual sea-cunnies or quartermasters, 3 boatswains, 2 gunners, a carpenter, cooks, comadore, 2 schroffs, and many officers' Chinese servants, making a total of some 40 to 45 men all told upon the little craft. We are also told that these vessels "vied with the smartest gun-brigs and corvettes in their spick and span appearance and quickness of sail drill" and had "a heavy and most complete armament for protection against the swarms of pirates that infested the coast of China." The opium ships were always officered by Europeans or Americans, but the crews at first were Manilamen, Malays, and Lascars, with Chinese schroffs, cooks, carpenters, boats' crews, and body servants.

It is said that in the fall of 1840, during the period of the Opium War, there were "16 ships and barks in the opium trade mounting 6 to 16 guns and carrying 30 to 90 men each and 27 smaller brigs and schooners that mounted from 4 to 12 guns and had crews of

from 20 to 60 men each." The topsail schooner *Zephyr* of 150 tons, sent by Captain Forbes out from Boston for the opium trade in 1842, was armed with nine 18-pounder brass guns and a midship 68-pounder pivot Armstrong together with "ample stands of small arms." The old and smart Mediterranean fruit schooner *Time* of 137 tons, when converted into an opium clipper, had six 4-pounder brass guns and one 12-pounder brass long tom and a crew of 26 seamen. The *Sir Edward Ryan*, a bark of 320 tons built at Moulmein in 1837 for the Indian opium trade, had 15 cannon aboard besides swivel guns and small arms. The opium schooner *Enigma* of 84 tons, built at Calcutta in 1845, carried "7 guns on a broadside and 2 long brass pivot guns," and Dent's opium clipper schooner *Eamont* of 120 tons, built at Cowes, England, in 1852, was mounted with nine 18-pounder brass guns and a midship 68-pounder Armstrong.

After mid-century, American firms took little, if any, interest in the Indian China opium trade. In the 1840's, tea became more and more the prime article of China trade that inspired the building of fast ships for long-distance voyages around the Cape of Good Hope to North Atlantic ports, and when the British exclusive Navigation Laws were revoked, United States clipper ships were quick to take advantage of the opportunity of carrying tea from China to British ports. In an effort to put ships in the trade between China and Britain that could compete with the available fast Yankee ships, the British put some of their biggest and fastest Indian opium clippers in the China tea service and ordered new ships to be built for the trade, where speed commanded a premium. Jardine, Matheson & Company, Dent & Company, and Russell & Company, famous old opium trading firms, were said about this time to be "finding business about equally divided between the opium and tea trades." Lubbock says: "The opium trade had always been purposely kept out of the limelight, but the tea trade was widely advertised and public interest, which had never been aroused by the fine performances of the little opium clippers, was very keen when racing started in the tea trade."

At least two British-built and owned India-China opium clippers loaded tea at China in 1850 to sail for the British market and compete with the American clipper *Oriental*, which had been offered the record high rate of £6 per ton (of 40 cubic feet) freight to transport tea from the Canton River to London. The first of the opium clippers to enter the British China tea trade was the 401-ton bark *Sea Witch*, built at London in 1848, and the second one was the 328-ton brig *Astarte*, which had been built by White, the famous English yacht builder, at Cowes in 1846. The fastest British clippers in the China trade at this time were the *Reindeer* of 328 tons, built by Hall, of Aberdeen, and the *John Bunyan* of 466 tons, built by Hood, of Aberdeen, in 1848. However, these ships were much smaller and slower than and inferior in every way to the American clippers such as the *Houqua*, *Rainbow*, *Samuel Russell*, *Architect*, *Sea Witch*, etc., built in the forties and prior to the launching of the *Oriental* in 1849. The performance of the American clipper *Oriental* in the tea run from China to Britain in 1850 was so superior to that of the British tea and opium clippers that there was no comparison; but it is significant that when the British opium clipper *Astarte* loaded tea at Whampoa at the same time as the American clipper *Oriental* and sailed close behind her, the opium clipper was heavily backed by the British to beat the American ship. After the so-called tea race of 1850, Jardine, Matheson & Company ordered the tea clipper *Stornoway* and Taylor & Potter the *Chrysolite* to be built for their accounts by Hall, of Aberdeen. These two ships are generally considered to be the first real modern clippers built in Britain with a sharpness of model and sail plan comparative with the "out-and-out" clippers built in the United States in the mid-nineteenth century and early fifties.

One of the latest and biggest British India-China opium clippers to take part in a China-Britain tea race was the ship *Wynaud* of 521 tons, built at London in 1854 for Dent & Company. This ship was a sizable vessel (150 ft. long, 29 ft. beam, and 17.9 ft. deep). In 1858 conditions were difficult at Hong Kong, and American ships deserted the British China tea trade; but four British clippers participated in the tea race to London, and one of them

was the opium clipper *Wynaud*. All sailed from Whampoa between November 6 and 8, with a bonus of £200 offered for the first ship to dock at London. The tea clipper *Lammermuir* is said to have reached the Downs in 92 days, making a passage six hours better than that of the *Cairngorm*, which had left Whampoa two days before her. However, the *Cairngorm*, which made the second best run of the contestants, won the bonus, as she docked forty hours ahead of the *Lammermuir*. The *Wynaud* and *Chieftain* each made passages of 100 days. This 100-day passage of the *Wynaud* from Whampoa to the Downs, pilot to pilot, was an excellent performance for an opium clipper, but the sailing conditions were very favorable. In September of 1858, before the *Wynaud* commenced her tea run, a severe typhoon on the China coast, which was at its worst off Swatow, caused the destruction of four well-known opium clippers then engaged in coasting trade. These vessels were the Aberdeen schooner *Gazelle* of 121 tons, built in 1840; the Indian teak-built brig *Pantaloon* of 202 tons, built at Moulmein in 1841; the New York pilot-boat type schooner *Mazeppa*, built by Brown & Bell, New York, in 1842 and sold by Forbes to the British Canton firm of Jardine, Matheson & Company; and the 257-ton British Gosport-built lofty, brig-rigged old yacht *Anonyma*, also owned by Jardine, Matheson & Company. The *Anonyma* first appeared in the opium trade in 1842, but was built in 1839. The *Gazelle* came very close to being lost in a China Sea typhoon of mid-September 1849, which was also experienced by the opium clippers *Ariel*, *Poppy*, and *Ardaseer*. Some authorities thought this same typhoon might have accounted for the unexplained loss of the *Coquette*, which "went missing" at the time and was presumably the victim of either pirates or a typhoon.

The opium trade was responsible for changing the generally accepted British, Indian, and oriental belief (developed in the sixteenth, seventeenth, and eighteenth centuries and accepted as a fixed law of nature up to the end of the commercial operations of the British Honourable East India Company) that a sailing ship trading between India and ports to the west could sail to points on the China coast by traveling north in the China Seas only during that part of the year when the favorable southwest monsoon was blowing and return by traveling to the southward only during the season of the northeast monsoon. This meant one voyage a year for Indian or British ships (or for vessels that originated their voyages at some Atlantic port) to China and return. The East India Company followed and operated to strengthen this tradition, but the economic competition in the Indian China opium trade, which resulted in faster ships, also called for more business to be handled per year for each bottom. At the very time (1830) that steamboats were being considered to tow opium-laden sailing vessels from Calcutta to the Canton River or from China home against the monsoon, the early Indian-built opium clipper *Red Rover*, built at Howrah (Calcutta) in 1829 from the model of a successful American-built privateer, proved to an incredulous shipping world in Britain, India, and the Far East that by driving, intelligent navigation, determination, and a measure of good luck, she could make three round voyages a year instead of one between Calcutta and Canton waters. By 1833 six opium clippers had mastered the dreaded adverse monsoon on a passage from India to China in the unfavorable season. Besides the bark *Red Rover* of 254 tons, they were the ex-naval brig *Jamesina* of 382 tons, the Cowes-built brig *Falcon I* of 175 tons, the Calcutta-built bark *Waterwitch I* of 363 tons, the Calcutta-built bark *Sylph* of 304 tons, and the Indian-built (Chittagong) ship *Lady of the Lake* of 243 tons.

As far as the economic operation of the opium clippers was concerned, it was just as important for them to make a good passage homeward (back to India) as it was for them to make a fast run out to China. The change of the season made a difference one way of twenty or more days and sometimes far more, but with quick "turn-about," a bad passage one way was generally somewhat balanced by a good passage in the opposite direction, making the times at sea for round voyages much more uniform than single passages. Probably because of the secrecy associated with the movement of opium-laden ships, there are many more records available of the length of passages of opium clippers on the westward, or homeward, run to India than on the outward run to China. In the spring of 1838, the *Ann*, a brig of 252 tons and a converted captured slaver, left China on January 7 and was recorded as

arriving at Calcutta (probably pilot off Sand Heads) February 9, making a passage reported as 33 days. After a detention in India of 35 days, the brig left Calcutta March 16 and was at Lintin in the Canton River May 7 after a passage of 52 days. The vessel was apparently 85 days at sea on the return voyage and was absent from the Canton River just four months (120 days). Five other opium clippers sailing from the Canton River to Calcutta during the period January 7-April 15 made passages of from 29 days (*Ariel I*, a bark of 368 tons) to 48 days (*Antonio Pereira*, a brig of 140 tons). The six clippers sailing from China in the first three and a half months of 1838 averaged passages of 34½ days, and the five sailing between January 7 and March 18 averaged quite uniform passages of 31½ days (minimum, 29 days; maximum, 33 days). The *Ariel*, which left China on February 3 and was reported as reaching Calcutta on March 4 in 29 days, left Calcutta March 25 and was at Lintin May 2 after a run out of 38 days; this round voyage occupied only a scant three months, or 88 days, of which 67 days were at sea. The *Waterwitch*, which left China March 7, was reported as arriving at Calcutta April 7 after a 33-day passage and as sailing May 6. She reached a Canton River anchorage (Cap-sing-moon) June 4 after a fine run of 29 days; this round voyage was made in 88 days, of which only 62 days were spent at sea. The *Cowasjee Family*, a bark of 431 tons, left China January 13 and was back June 11; her round voyage occupied a scant five months (149 days), but after a good run home of 33 days, she had a long detention at Calcutta. She loaded 1,469 chests of opium for China (as against 1,190 chests for the *Waterwitch*), and while she made a good run to China of some 36 days, her long stay at Calcutta prevented the recording of a fast round voyage.

During the period June 10-December 4, 1838, there are records of ten opium clipper passages from China to Calcutta, which varied from 25 days for the *Waterwitch*, which sailed December 4, to 72 days for the *Syed Khan* (an old Baltimore clipper ex-slaver), which sailed July 1. The average time of these ten passages was 41¾ days. Three passages of over 50 days were made by clippers that sailed in mid-summer between June 20 and August 20, and the six best runs of from 25 to 35 days were made by vessels that left China in the fall of the year between October 9 and December 4. The two fastest passages were made by the two latest sailings, 29 days for a November 30 departure and 25 days for a December 4 sailing.

In the summer of 1840, during the Opium War, the new clipper brig *Kitty* sailed from Macao August 5, was at Singapore September 15 (41 days out), and was reported at Calcutta October 10 after a passage home of 66 days. In 1842 this brig, leaving Hong Kong on November 19 with a favorable monsoon, reached Calcutta in 33 days—just half the time. In 1841, leaving the Canton River August 8, she had to beat against a southwest monsoon and did not arrive at Calcutta until November 4, when 88 days out. Of twelve reported homeward passages of opium clippers leaving Macao April 11, 1840-January 17, 1841, the average length of the runs to Calcutta was 43 days, and they ranged from the long 66-day passage of the *Kitty* (the only run originating between May 15 and October 15) to the fast 31-day passage of the old Baltimore clipper topsail schooner *Syed Khan*, which sailed January 6, 1841, and ran to Singapore in 11 days. The next fastest passages were 35 days for the *Falcon*, sailing December 4, 1840, and 38 days for the *Bengal Packet*, with a January 17, 1841, departure. In each of the years 1841 and 1842, the opium clippers *Waterwitch* (a bark of 363 tons) and *Cowasjee Family* (a bark of 431 tons), notwithstanding the Opium War, made at least two round voyages between India and China, and the recorded length of these homeward passages in relation to the date of sailing from China is as follows:

| Name of Opium Clipper | 1841 | | | | 1842 | | | |
|-----------------------|---------------------------------------|---------|---------|---------|---------------------------------------|---------|---------|---------|
| | Date of Sailing and Length of Passage | | | | Date of Sailing and Length of Passage | | | |
| | Mar. 1 | May 5 | Aug. 9 | Nov. 25 | Jan. 4 | Apr. 4 | July 28 | Nov. 30 |
| WATERWITCH | 32 days | — | 52 days | — | 33 days | — | 45 days | — |
| COWASJEE FAMILY | — | 62 days | — | 29 days | — | 35 days | — | 26 days |

The *Falcon* (an English-built brig of 175 tons) also made two homeward passages from China to Calcutta in 1841. Sailing from the Canton River on March 26, her run home occupied 50 days; but on her passage later in the year, she left China on December 31 and was at Calcutta on January 13, 1842, when only 31 days out. Of thirteen reported homeward runs of opium clippers from China to India in 1841, the average length of passage was 46½ days and the range from 29 days minimum to 88 days maximum; eight of the thirteen runs were of over 40 days (all originating between March 19 and August 8), and the other five passages, which averaged 32½ days, had sailings from China prior to March 15 or after November 15. Of twelve recorded homeward runs from Hong Kong to Calcutta in 1842, the average length of passage was a scant 40 days and the range from 26 days minimum to 59 days maximum. Half of the runs were of over 40 days, and they all originated between April 20 and November 8; but the slow passages, attributed to direction of the monsoon, originated between April 20 and August 28, and eight passages, with sailings prior to April 15 and after October 1, averaged a scant 35 days, with the five sailings prior to April 20 and after November 18 averaging 31 days.

In 1843 there are complete records of seven Calcutta opium clipper runs home from China that averaged a little over 44 days (minimum, 32 days; maximum, 53 days). The average length of the run from Hong Kong to Singapore was a strong 20 days (minimum, 11 days; maximum, 29 days). Four of these runs, originating during the period April 22-September 26, were against a southwest monsoon and averaged 26 days (minimum, 23 days; maximum, 29 days); while the other three, with a more favorable monsoon, were made in 11, 12, and 15 days, respectively. During the period from May 25 to August 19, seven opium clippers left China homeward bound to Bombay via the Sunda Straits, and their time from the Canton River to Anjer averaged 35½ days (minimum, 34 days; maximum, 40 days). It is evident that all of these runs were made against an adverse, or southwest, monsoon. The following year (1844) there is a record of seven opium clippers' leaving Hong Kong during the period April 15-August 19 bound home to Bombay via the Sunda Straits and averaging 33 days to Anjer (minimum, 27 days; maximum, 42 days). During this four-month period of sailing in the China Seas, all these vessels encountered adverse, or southwestern, monsoons. There are records of fourteen homeward opium clipper passages from Hong Kong to Calcutta via Singapore in 1844, and they show excellent sailing and a fine average, although the dates of departure as stated run from January 6 to December 3. There are only three sailings of the fourteen reported between April 1 and November 1 and only one departure during the months of June, July, August, and September. The average length of the passages recorded was 30 days (minimum, 20 days for the American-built *Coquette*—a bark of 450 tons; maximum, 49 days for the Indian-built *Cowasjee Family*—a bark of 431 tons). All the passages originating prior to March 30 and in the latter part of the year were of 34 days or less, and the length of these runs to Singapore occupied from 9 to 14 days.

In 1847 the best outward runs from Calcutta to the Canton River or Hong Kong were reported as follows:

| Name of Clipper | Date of Sailing | Passage in Days | Name of Clipper | Date of Sailing | Passage in Days | Name of Clipper | Date of Sailing | Passage in Days |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| RED ROVER | Aug. 19 | 23 | ANTELOPE | July 20 | 28 | KELPIE | Sept. 18 | 32 |
| WATERWITCH | July 7 | 26 | SYLPH | July 1 | 29 | RED ROVER | Apr. 6 | 36 |
| ARIEL | June 1 | 27 | KELPIE | May 19 | 31 | MISCHIEF | Apr. 3 | 37 |

All of these six fastest passages of 31 days or less had arrivals in China between June 19 and September 11, and the nine passages of 37 days or less had arrivals between May 10 and September 11—a period of four months.

The six fastest reported opium clipper passages from Bombay to the Canton River or Hong Kong in 1847 were as follows:

| Name of Clipper | Date of Sailing | Passage in Days | Name of Clipper | Date of Sailing | Passage in Days | Name of Clipper | Date of Sailing | Passage in Days |
|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------------|-----------------|-----------------|
| POPPY | July 8 | 35 | COQUETTE | Apr. 18 | 39 | MOR | Oct. 4 | 46 |
| LANRICK | May 5 | 39 | EMMA | June 12 | 43 | SIR HERBERT COMPTON | Mar. 28 | 57 |

The three fastest passages of 39 days or less had arrivals in China between May 27 and August 12, and all the six runs recorded as the best of the year showed arrivals between May 24 and November 19, five of the six being between May 24 and August 12.

During the period February 1, 1847, and January 7, 1848, there is a record of five opium clippers' making six passages direct to Woosung (a port for Shanghai) instead of to Hong Kong or putting into the Canton River. These reported passages averaged 69 days. The best were by the *Nymph* (a schooner of 106 tons) and *Gem* (a brig of 226 tons), each of which made the run in 61 days, and the longest was a 79-day passage by Dent's bark *Ariel* of 368 tons, which sailed July 7, 1848, and had to buck a strong northeast monsoon when running up the coast.

The Canton REGISTER credits the *Red Rover* with a 17-day passage from Calcutta (October 7) to Hong Kong (October 24) in 1848, which seems incredible, even though it is well known that this 254-ton bark, modeled after an American privateer, was an exceedingly fast vessel. Other very speedy outbound sailing performances claimed during the year were 22 days for the *Poppy* and 25 days for the *Lanrick*, with June 6 and 26 departures, respectively (each from Calcutta), and 26 days for the *Antelope*, which left Bombay June 28. The *Waterwitch*, which left Calcutta July 3, is also credited with a 30-day passage to Hong Kong, and six other clippers from Calcutta and one from Bombay are reported to have made runs in the opium trade to Hong Kong in 39 days or better. One of them, the *Lanrick*, which really sailed from Calcutta December 16, 1847, and reached the Canton River January 24, 1848, reported experiencing strong N.E. gales after leaving Singapore.

Clippers drove ordinary traders from the India-China opium trade, and sizable vessels showing speed supplanted smaller and slower craft in the run, the best of the deep-sea opium clippers in later years being used in the coastal trade. New British so-called clippers entered the opium trade up to 1860, when the three-masted topsail schooner *Chin Chin* of 263 tons appeared under the ownership of Capt. J. C. Saunders. However, steam, which drove sail from the India (Bombay and Calcutta)-China opium trade in the fifties and early sixties, gradually supplanted clipper sail in the Chinese and oriental coastal trade, where steam held a great advantage through a good part of the year because of adverse monsoons and currents.

The Opium War

The British, from the first, did not understand the Chinese and had no sympathy with their oriental manners, customs, and psychology. When a British Government official was subjected to the usual and to-be-expected Chinese procedure (as far as business matters and interviews with Chinese officials were concerned), the British official promptly felt personally insulted and writhed at the indignities to which he felt himself subjected. A British lord could never understand that, to the Chinese, he was merely a "foreign devil" and that, as head of a British commission or embassy, he was known as "the Barbarian Eye"—tolerated in a certain limited part of the Flowery Kingdom but not invited and not wanted. The British

were keenly conscious and sensitive in regard to their dignity and international prestige and were prompt to avenge an insult to their flag and particularly to a titled personage. In 1816, Lord Amherst was not treated by the Chinese in harmony with occidental procedure, and for the contemptuous insults that he experienced, the British frigate *Alceste*, with her death-dealing guns, sought revenge. In 1834, Lord Napier, failing to break down Chinese customs in dealing with foreigners and ride rough-shod over established procedure, was incensed when he failed, and his emissaries were subjected to indignities for deliberately ignoring and refusing to conform to Chinese customs. He sent two British warships, H.M.S. *Andromache* (28 guns) and H.M.S. *Imogene* (18 guns), from Macao to bombard the Bogue Forts and sail through the Bocca Tigris, which leads up to Whampoa and Canton, and to avenge the insult that he believed he had been subjected to when he had proceeded to Canton without obtaining the required permit. The viceroy had refused to see him unless he conformed with Chinese customs and procedure and sent communications in regard to trading to the imperial officials through duly authorized Hong merchants. This forcing of the waterway to Canton, the gateway of the whole Celestial Empire, by the power of foreign arms was an act of revenge and a blow in the face of the emperor. The British say that when their warships ceased firing, the Chinese forts were rendered impotent; that "a severe lesson had been taught [the infidel Chinese], the viceroy [of Canton] had lost face and the many insults received by poor Lord Napier had been repaid." It would seem that the British-Chinese war commenced in September 1834 or possibly as far back as 1816, when Britain, through intolerance and a sense of superiority, with "Divine Right," commenced to adopt punitive measures through force of arms in its relations with China. Such a policy breeds hatred and justified the Chinese in their designation of foreigners as "barbarians" and "devils."

Prior to about 1830, opium was delivered to China only during the period of S.W. monsoons, but the use by the European and American merchants of floating "godowns," or receiving ships, at Lintin on the Canton River permitted them to sell opium throughout the year. Later, auxiliary receiving ships were anchored as opium floating warehouses and offices at suitable strategic points along the coast. Deep-sea clippers delivered Indian opium from Bombay or Calcutta to receiving ships anchored in the Canton River, coastal clipper brigs and schooners distributed it to company floating "godowns" stationed along the coast, and fast armed sloops traded with it up the rivers and in shallow waters. The Chinese Government and mandarins, generally by edicts and acts, sought to prohibit the importation of opium into China, and the Chinese Hong merchants had nothing to do with this illegal trade openly; nevertheless, most of them participated in it through brokers, in a deceitful and camouflaged manner, to make money for themselves and win the favor of the "barbarians" or "foreign devils," who sought by every possible means to distribute ever-increasing quantities of opium throughout China because of the big profit connected with this illegitimate trade.

China was not strong enough in a military sense to back up its laws by the punishment of "foreign devils" who violated and ignored its solemn edicts, by the confiscation of the ships and property of the lawbreakers, and by the refusal to grant offenders continued trading privileges. When the government caught a foreign ship smuggling opium into the kingdom, its operations were merely stopped and the vessel ordered to leave port immediately. In the spring of 1822, some two years after Lintin had become a rendezvous for foreign shipping and particularly for opium smugglers on the Canton River, many years after edicts had been issued in China making opium contraband and earnest steps had been taken by the government to stop the import of opium and its sales in China, and some four months after the Imperial Government had issued its "Mandate prohibiting the opium trade" dated November 17, 1821, the following letter was addressed to "The Select Committee of the Honourable East India Company" by the Chinese Hong merchants:

Gentlemen,—

We approach to state that opium is a commodity which the laws have heretofore prohibited most strictly, and we have before respectfully received

commands to order all the respective ships that they must not bring it.

It has occurred not a second nor a third time only.

Last year Captain Hogg's ship [the *Eugenia*], Captain Robson's [*Hooghley*], Captain Parkyns' [*Merope*] and Captain Coupland's [American ship *Emily*] all brought opium into the port; and these, when it was discovered, were in obedience to the Imperial will, sent away and not allowed to trade; and it was decided that afterwards, if any opium were smuggled into the port, the implicated ship was to be treated in the same manner.

We will trouble the Chief and Committee [of the H.E.I.C.] to send a letter to the Company and to India and to the Marts, informing everyone that opium must not be smuggled into Canton, for if, reverently, orders be received to search and discovery ensue, the ship will be rejected and not al-

lowed to trade; and if this year any ship, not knowing the prohibition, should bring opium, we beg you to inform her that she must not on any account enter the Port, but set sail immediately, for if she do enter and we find it out, we positively cannot become security, but must assuredly and immediately report it to the Great Offices of Government that the affair may be prosecuted according to law. This is an affair which concerns our persons, families and lives, and we are compelled to proceed in the straight road of management.

We hope you will excuse us and with Compts. we remain,

2nd Moon 12th day.

March 6th 1822.

Gentlemen

(Signatures of the various Hong merchants)

At this time, the illicit opium trade was thriving, but the "foreign devils" delivered opium from India to heavily armed and well-manned privately owned receiving ships anchored at Lintin (Tongkoo or Deep Bay), opposite Cap-sing-moon Harbor near the mouth of the Canton River. These ships were prepared to defend themselves at all times from attacks by either organized flotillas of pirates or Imperial Government forces and at night had high strong boarding nettings in position, with guards and keen lookouts on duty. Opium stored on the receiving ships was sold at Canton for cash only by the opium brokers, who gave orders to the captains of the receiving ships to deliver the purchased quantity of drug to a Chinese "smug boat," which was sent down the river for it. These "smug boats," known to the Chinese as "scrambling dragons" or "fast crabs," were speedy river boats, with fore-and-aft sails, carrying some sixty or seventy expert and powerful oarsmen. They were powerfully armed, with a cannon in the bow, swivel guns on the sides, and all kinds of small arms. This armament was said to be for protection against pirates, but it was also used, when necessary, against inquisitive and officious government craft carrying the insignia of the imperial dragon.

As early as 1720, the emperor of China gave licenses to certain Chinese (Hong) merchants allowing them to trade with the "foreign devils," provided they personally went security for the good behavior of the foreigners and guaranteed the proper, full payment of customs dues. All resident foreigners engaged in trade were under the protection of a Hong merchant, and the "squeeze" was common. High license fees were paid to Peking by a Hong merchant, and although he saw to it that his business was profitable throughout a period of time, there were times when his losses were great. When famines, floods, and calamities occurred, the money required to relieve conditions was obtained from Hong merchants by an arbitrary "squeeze," and even the cost of public buildings was met by "contributions" from the same source, obtained in the same manner. The demands made on the Chinese Hong merchants were merely passed on to the foreigners who traded with them. Trade in China was not considered aristocratic or a worthy occupation for a "blue blood," but neither was it in England; so after Chinese merchants made money in trading, they purchased mandarin's rank in order to obtain a respected social and official status. A Chinese merchant was looked down upon, but a mandarin (which name means "to order") was honored and had dignity in the popular mind, and most of the successful Chinese "Hong" merchants led a sort of double life. Houqua, the greatest of all the Hong merchants (real name E-Woo or Woo-E), was also the richest, most respected, and the finest character among them, and he was particularly friendly to Americans and to the Canton house of the Russells and the Forbeses, etc., of Boston.

The first war between Britain and China in the late thirties and early forties, known as the Opium War, was so called because the opium traffic was the main cause of contention between two governments, but it was far from being the only one. As Lubbock says: "The very mandarins, who were employed to suppress the opium smuggling, owed their living

solely to their powers of 'squeeze-pigeon,' compromise and cumsha," and "Captain Elliot, the British Superintendent of Trade, was by no means in favor of the illegal traffic, although he was compelled by his position to do his best to uphold and protect his countrymen who dealt in the drug." British merchants, from the commercial standpoint, liked the opium business, and William Jardine declared to the British Parliament in 1840 that it "was by far the safest trade in China, because you got your money before you gave your order." However, it was a trade that caused the most bloodshed, and the product sold undermined the mental and physical strength of the Chinese people. The Christian missionaries raved against the opium traffic, but the Chinese court and the leaders throughout the land were more alarmed at the barbarians' fanaticism of superiority and exclusiveness in religious matters and the distribution of occidental religious tracts throughout Mongolian territory, in opposition to the teachings of revered ancestors and to traditional spiritual beliefs, than they were by the dissemination of the opium drug. In addition to the encouraging of lawlessness by the opium traffic and the seeking of the barbarians or "foreign devils" (who were behind the business) to turn the people from old Chinese beliefs and customs and the religion of their honored ancestors, there was an economic phase of the matter that greatly concerned the Chinese rulers. The emperor's finance ministers complained that "black dirt [opium] was always coming in and the pure silver always going out," and the "harmful filth of the poppy" was considered a very poor exchange for the solid silver metal, which had high value the world over and, if properly used in international exchange, would add to the wealth and well-being of the Celestial Empire. Peking was grossly ignorant of the power and might of the British "red-headed devils," but on the other hand London was intolerant and unsympathetic in regard to conditions in China. It is said that these conditions, coupled with the Chinese loss of specie in exchange for a harmful as well as useless drug, induced the emperor to appoint "the implacable Commissioner Lin, with full powers to put an absolute stop to the opium trade."

On March 10, 1839, Commissioner Lin Tse-Hsu arrived in state at Canton, with impressive pomp and ceremony, to stamp out the opium trade. Lin, in one of his many diatribes against the opium trade, said that the manufacture and sale of the drug resulted from the willingness of certain selfish, thoughtless, and inhuman men "to seek one's own advantage by other men's injury; and such acts are utterly abhorrent to the nature of men and are utterly opposed to the ways of heaven." Commissioner Lin, under imperial orders, promptly took effective measures to achieve his object, so that Captain Elliot, on March 27, demanded that all British subjects in Canton waters deliver to the Chinese authorities for destruction all the opium that they held and promised the owners that the British Government would reimburse them for losses sustained. Opium to the extent of 20,283 chests, valued at about £2,000,000 sterling, was turned over to the Chinese authorities. The two principal British firms (Jardine, Matheson & Company and Dent & Company) contributed about 7,000 chests each, the American firm of Russell & Company furnished over 1,500 chests (said to belong to British firms for which it was agent), and Dadabhoj Rustomjee, an Indian Parsee, produced about 1,000 chests. All this opium was destroyed on the spot where received by the Chinese by order of the emperor, and about six hundred men were occupied during twenty days in May performing this task inside a well-guarded barricade.

There was one British opium clipper, the schooner *Time*, in the Canton River that did not disgorge her opium when ordered to do so; but her master (Capt. Joseph Pybus), having only 20 chests aboard, put to sea and speeded for India, calling at Singapore en route. Opium in China, Pybus knew, was being bootlegged at from \$1,500 to \$3,000 a chest, depending on its geographical location, so he appointed an agent to buy opium for him and secure what he could at an average cost of not over \$250 a case. Word had reached India in December 1838 of the probable imperial Chinese action aimed at stopping the opium trade. This had weakened the market, and on March 6 the opium clipper *Sir Edward Ryan* (Capt. Henry Pybus) arrived at Calcutta from Lintin with a report of developments in China up to the

end of January. The market, which was overstocked with the drug, dropped to a new low, with hysteria as well as depression evident. When news reached the Straits Settlement and India of the absolute embargo of opium in China, the bottom dropped out of the market. The *Time* reached Calcutta on June 26, 1839, and Captain Pybus reported her as arriving from Mauritius. The schooner, although she needed repairs, was rapidly patched up, obtained some cheap opium, and sailed July 3 for Singapore, where she filled her holds with a further load of 700 chests (which had been purchased at \$250 a chest). She promptly sailed, not for the Canton River area but for the China coast farther north, and here Captain Pybus disposed of his cargo at \$2,500 a chest and reaped a handsome profit. This is a good illustration of the psychology and tricky actions of the British shipowners, shipmasters, and merchants in regard to opium trading.

Both of the Pybus brothers (Joseph and Henry) took advantage of the Chinese official opium embargo of 1839 to make money, for Capt. Henry Pybus had loaded the *Sir Edward Ryan* at Calcutta with low-priced opium in March, and when he returned to China, he also avoided the Canton River and sailed northward up the coast to dispose of his cargo to the best possible advantage. A contemporary British paper said: "His voyage was a bold and well planned venture and other vessels have been encouraged to follow in the track." This distribution of opium in violation of the government embargo was not peaceful and deceitful smuggling, but at times resulted in acts of war. When the *Sir Edward Ryan* was at anchor in Amoy Roads with opium for sale to any craft with the required specie that would come alongside and make the exchange, the mandarin representing the government in that territory ordered Capt. Henry Pybus to take his ship from Chinese waters and obey the law. The Britisher treated the demand with disdain, so the Chinese official, after giving due warning of his intent, sent out five war junks to drive away the ship of the "red-headed devils" that was loaded with "foreign mud." But opium clippers were mercantile men-of-war, and Chinese junks loaded with armed men and carrying a few big guns were no match for them. As soon as the Amoy war junks got within range of the *Sir Edward Ryan's* long tom, the British gunners opened fire, and their marksmanship was so good that the war flotilla of the Chinese was driven off, badly damaged, before it was in a position to inflict any damage whatsoever on the "foreign devils." We are told that this display of British gun power "was quite enough to quench the Amoy mandarin's warlike spirit." Another Pybus opium clipper, the brig *Ann* of 252 tons (a reconverted captured slaver), under Captain Grey, is said to have been "the first vessel to get into serious trouble with the imperial forces." In mid-July 1839, this brig, which was at Tienpack with opium for sale and ignored government orders to depart, was attacked by mandarin junks in such force that she had trouble to beat them off and during the action suffered damage and casualties when one of her guns burst. The *Ann* was obliged to go to Hong Kong for repairs, following which she proceeded to Manila to dispose of her opium.

After the destruction of the opium, the foreign Hongs and "Factories" in the Canton area closed down with the exception of the Americans. John C. Green, the then head of Russell & Company, sailed for the United States in early June, and Capt. Robert B. Forbes took charge of the company's affairs as managing partner. Captain Elliot, R.N., the British Superintendent of Trade, pleaded with the redoubtable Captain Forbes to follow the example of the British and other nationalities, cease all operations, and leave Canton, but the Yankee skipper said: "I have not come to China for health or pleasure and I shall remain at my post as long as I can sell a yard of goods or buy a pound of tea," and he added: "We Yankees have no Queen to guarantee our losses." The Chinese threat of "a chain around his neck," he affirmed, did not disturb him, as Russell & Company's Indian and East Indian merchant-customers had been officially notified in January that the American company would no longer take consignments of opium. Forbes sent his books and papers and items of peculiar value, with some members of his staff, down to Macao; but he said that he was in Canton to stay—at least for the present—and that, being then engaged solely in

legitimate trade, he would continue to buy and sell as long as there was any trade. After the exodus of the British and other foreigners from Canton on May 29, Capt. Robert B. Forbes, of Boston, and twenty-four other Americans were the sole representatives of the "Fan kwae" (or "foreign devils") in Canton. Because of his courage, Captain Forbes caused the American firm of Russell & Company to enjoy a monopoly of the foreign trade at Canton in 1839, and it was all legitimate import and export trade. The Chinese were in dire need of cotton from India and had tea that they wanted to sell to the "foreign devils." Forbes used all the American ships that he could get and used the old opium-receiving ship *Lintin* as a tow barge on the Canton River, taking tea down to British ships at anchorages near the river's mouth and bringing the much-wanted Indian cotton up to Canton, where it sold for as high as \$7.00 per bale.

Commissioner Lin, determined to drive British shipping from the Canton River, succeeded in getting it away not only from Whampoa and the Bocca Tigris but also from the Cap-sing-moon and Lintin anchorages near the mouth of the river and later from Macao. By so doing, he paved the way for the rise in importance of Hong Kong, which by the treaty of January 20, 1841, the Chinese were required to cede to the British.

It is significant that during the turmoil of 1839, the *Thomas Coutts* of 1,334 tons, an old popular ship of the Honourable East India Company (built at the Blackwall yard in 1817), although then under the ownership of Joseph Somes, sailed up the Canton River to Whampoa with a legitimate cargo of cotton, etc. She was discharged and loaded with a full cargo of tea by the American firm of Russell & Company, and because of the old good record of the ship and the Honourable John Company and the Chinese respect for Captain Forbes and Russell & Company, the ship went up and down the river and proceeded to sea without molestation—for it was known that she was not smuggling opium. A British man-of-war, H.M.S. *Volage* (26 guns), because of Chinese outrages, prepared to blockade the port of Canton, and on October 29, 1839, war really commenced between the Chinese and British when the H.M.S. *Volage*, which had been joined by H.M.S. *Hyacinth* (18 guns), was attacked by twenty-nine Chinese war junks, with orders from Commissioner Lin to surround and capture the ships of the "foreign devils." Five of the Chinese junks were quickly sunk and most of the others severely damaged, as they moved to the attack, before the British ceased firing to prevent the terrible casualties that would have resulted if the uneven fight had continued. The Chinese junks still afloat abruptly ceased all warlike moves, and all that could be operated by their surviving crews retreated ignominiously. On December 6, the Chinese formally declared war with Britain, and the prevailing idea of the Chinese of their own greatness and of the insignificance of the "red-haired barbarians" or, in fact, any other "foreign devils" can be gleaned from the following statements of a Chinese mandarin sent officially to the American Hong to seek to learn something of the British:

What chance had the red-headed devils in a war with the Celestial Empire, which covers the whole earth. Think of the frowning batteries of the Hoo-Mun [the Bogue]. When their terrible engines are opened the remotest corners of the world are agitated.

Our imperial ruler controls the whole universe. His wisdom is as the five great genii, broader than the four seas is his benevolence, higher than the skies is his clemency.

The red-haired barbarians [British] from a speck in the ocean come to the Flowery Land and reap unheard of money, deluging the "Roses and Lilies" with poisonous filth [opium]. The Yellow Dragon is insulted. He says, "Drive them forth, cut them off for ever, shower upon them no longer our goodness, our tea, our rhubarb, our sweetmeats [and more particularly our silver]. What to us are their buttons and musical boxes, their knives with six blades, their corkscrews and files!"

The British continued to load opium in India and send it out to China, but clippers handling the drug announced their destination as Manila via Singapore. Some of the clippers were manned with all British crews and mounted with extra guns for defense against the fleets of imperial war junks that were sent out to waylay British vessels, with the promise of a bonus to be paid in harmony with a stipulated scale for every warship and merchantman

taken and for every "foreign devil" killed or officer (and English or Indian merchant) taken—alive or dead. The opium clipper *Waterwitch*, a bark of 363 tons (built in India in 1831), and the *Lady Hayes*, a bark of 314 tons (built in India in 1829), were the first opium ships attacked. They were required to fight their way in the South China Seas through a fleet of seventeen China "gunboats," but reached Macao without sustaining damage or experiencing casualties. In early May 1840, the bark *Cowasjee Family* of 431 tons (built in India in 1835), the bark *Sylph* of 304 tons (built in India in 1831), and the schooner *Omega* of 178 tons (built at Cowes, England, in 1837) all were attacked off Chimmo Bay, to the northward of Amoy, by a large flotilla of Chinchew junks, and the vessels had to fight clear and use their speed to avoid damage and possible capture through force of numbers and both man and gun power. They expended a lot of ammunition, but suffered no casualties and, it is said, came out of their engagements unscathed. On May 22, 1840, the opium schooner *Hellas* of 209 tons (built at Waterford in 1832) had an experience when becalmed north of Namoa. She was lying helpless and foul of fish stakes when she was attacked by eleven Chinese craft, which, keeping clear of the fire of the *Hellas'* broadside guns, got in close to the stern, where expert marksmen, with musketry fire, hand grenades, and stink-pots, did great execution. Only a breeze that sprang up, after an uneven fight of four hours, saved the British vessel from capture or destruction. Of a crew of 50 aboard the *Hellas*, over half were casualties, and many were killed. Every one of the fifteen Europeans were wounded, and Captain Jauncey was incapacitated. After the *Hellas*, benefiting by wind, escaped the Chinese, she sailed for Hong Kong, where the wounded were put ashore, and at least two of them died after arrival. During this fight, the Chinese boats had no cannon, but it is said that the sharpshooters were excellent, and they set the opium carrier afire many times with their stink-pots.

The first British expeditionary force arrived off the Canton River the end of June 1840 and consisted of a queer assortment of warships, transports, and British and Indian troops. They promptly moved up the coast to Chusan for strategic reasons. However, after the British frigate H.M.S. *Blonde* (44 guns) had devastated Amoy because the Chinese authorities had fired upon a boat flying a flag of truce and the ship's guns had destroyed the batteries on the shore and the junks in the harbor and worked havoc with the Chinese troops on the shore, Chinese diplomacy got quickly to work. The "foreign devils" were too near the imperial palace. Commissioner Lin was displaced, and a shrewd, cunning, and courteous oriental diplomat named Keshen took over the conduct of the war. Keshen, from the first, sensed that China could not defeat the British by force of arms, but had a chance to beat them in a battle of wits. Captain Elliot, R.N., the British representative in China, on whose head Commissioner Lin had put a big price (dead or alive), had never wanted the war, as he was "His Majesty's Superintendent of Trade" in the Orient. As he was seemingly ready to seize any excuse for stopping it, the wily and astute Keshen, with the "foreign devils" within a hundred miles of Peking, proposed an armistice and the discussion of peace terms, but required that British forces should retire to Canton waters and that there only could negotiations be conducted. Having moved the forces of the British to what the emperor deemed a safe distance from his palace, the Chinese were dilatory, and Keshen was positively backward, evasive, and an obstructionist as far as the plenipotentiaries' getting together to discuss peace terms was concerned; in the meanwhile, the Chinese built defensive works and were guilty of warlike acts. On the other hand, the opium trade flourished. In the fall of 1840, it is said, sixteen deep-sea and twenty-seven coastal distributing vessels were engaged in this trade, 12,000 chests of opium were aboard the receiving ships, and about 30,000 chests either ready for shipment in India or already in transit to China.

A well-armed iron side-wheel British steamer, the *Nemesis* (630 tons; 120 H.P.), arrived at Macao November 25, 1840, and this vessel, which could operate on a draft of only 5 ft., was destined to put terror in the hearts of the Chinese. A few days after she appeared in Chinese waters, Keshen arrived at Canton, and although he made a bluff of negotiating with

the British, he had imperial orders "to prosecute the war and bring the red-headed barbarians to their knees without delay." On January 7, 1841, the British armed forces, after sensing the truth and first giving due warning of their intent unless serious steps were taken by the Chinese to discuss peace terms, moved to destroy the Bogue Forts and wipe out the Chinese defending forces, both land and naval. Several warships took part in the engagement, and about 1,500 troops and marines were landed. They quickly attained their objective, with negligible casualties; whereas Chinese losses were very heavy. A fleet of fifteen Chinese war junks, mounting from 4 to 14 guns each besides swivels (or pivoting gingsals) and manned by big crews armed with spears, swords, and matchlocks, was in the shallow waters of Anson's Bay and believed secure from the attack of the British fleet; but the light-draft *Nemesis* went in after them, blew up the largest of them with her first shot, and destroyed thirteen of them.

The next morning (January 8) the British fleet proceeded to complete its designated task and force the passage of the Bocca Tigris between the Anonghoy (mainland) and Wantong (island) forts. However, shortly after the *Nemesis* and two rocket boats that she was towing commenced firing on Anonghoy, a sampan put off from shore, with a white flag, and rowed to H.M.S. *Wellesley* (74 guns), the British flagship, with a request for a truce. While the British were impatient to clear the channel, destroy the Chinese forts, and open up the way to Whampoa and Canton, subtle Chinese diplomacy again triumphed over British arms, and neither Admiral Kwan, the commander of the Chinese forces (who personally asked for an armistice), nor Commissioner Keshen had any intent of ending the war except on the terms as first outlined by the emperor. However, on January 20, 1841, Keshen bluffed Elliot into agreeing to preliminary arrangements for peace, and in consideration of Britain's returning to China the Chuenpee Forts and retiring from all land held by the British in the Canton River region, the Chinese agreed to cede "the worthless island" of Hong Kong to them as a commercial station, provided the Chinese should be permitted to move freely on, and to and from, the island without molestation. Surprisingly, the British, in January 1841, did not value Hong Kong, and both the British merchants in China and the Englishmen at home objected to the terms of the pseudo-peace treaty. Keshen and the Chinese were of the opinion that they had given nothing away, but had stopped destructive fighting and regained valuable mainland that had been taken from them by force of arms and had prevented much more from being grabbed in the same way. Captain Elliot and the Foreign Office of the British Government were long-headed; they knew that Hong Kong was a deep-water port and that if it were declared a free port but part of the British Empire, it had the geographical location and physical characteristics so that in a few years' time it could be made "the most considerable mart east of the Cape of Good Hope." With Hong Kong and its deep-water, ample harbor under the British flag, the Portuguese shallow-water port of Macao went into eclipse, and the old Canton River anchorages at Lintin and Cap-sing-moon gradually became deserted. The CHINESE REPOSITORY published a list of 550 merchant ships that entered Hong Kong in the seventeen-month period from August 1, 1841, to December 31, 1842; this is an average of over 32 per month and one a day.

On January 26, 1841, a general peace conference took place between the plenipotentiaries of Britain and the high commissioner of China. It was a spectacular and ceremonious affair of "pomp and circumstance" and is said to have been the first time that a Chinaman of high official rank deigned to meet personally a foreigner on terms of equality. Keshen, as high commissioner, had really no authority to act on his own initiative, but only under orders from the emperor; yet he posed as having the requisite power and was suave, but actually played a game of deception and procrastination. Captain Elliot, the accredited British representative, had not only evacuated the Chuenpee Forts and surrounding territory on the Canton River on January 21 but also, on January 26, had dispatched the fast brig H.M.S. *Columbine* to the north with orders to the British forces to evacuate Chusan, hand back the island to the Chinese authorities, and return with all ships and men to Hong Kong. This was promptly

done, but in the meanwhile it became evident that Keshen was playing the British false; that his overtures for peace and the proposals that he himself suggested at the historic meeting of January 26 were insincere. Elliot met Keshen on February 10, at which time the Chinese commissioner actually held imperial orders repudiating all of the proposed peace terms and ordering him "to exterminate the foreign devils without further delay or his head would pay the price of failure"; yet Keshen still professed that affairs were progressing favorably but a little more slowly than had been expected, and he stressed the need of a little more time to make the peace terms effective. A few days later, however, British reconnaissance had revealed that feverish Chinese preparations for war were under way, and after Elliot had agreed to a ten-day delay upon the earnest solicitation of Keshen, it was evident that the Chinese bluff, which had worked for twenty-five days, could not continue longer and that further interviews in the interest of peace were futile. The twice extended agreed-upon dead line was reached on February 20, when Keshen was compelled to show his hand and break off further negotiations, and on February 25 the British again landed troops in the Bocca Tigris region and, with only five casualties (all wounded), took possession of all the forts on both sides of the channel. The Chinese loss in killed and wounded exceeded five hundred men, including Admiral Kwan.

The next day, farther up the river, floating timber barrier rafts were encountered. They were defended by improvised shore batteries and an old ship that Warren Delano had sold the Chinese admiral some time before and that the Chinese had orientalized but on which they had mounted 34 English-made guns. A British fleet, led by the intrepid *Nemesis*, attacked the obstructions in the channel and blew up the Chinese reconverted occidental ship. The British suffered ten casualties (one killed and nine wounded); while the Chinese loss was reported as approaching three hundred. As the British squadron approached Canton, a string of forts and some river obstructions, including sunken junks, were encountered and overcome, and when the fleet was off Whampoa, Keshen disappeared in disgrace and the prefect of Canton came down the river to treat with the "foreign devils." On March 2, Elliot agreed to a three days' truce, which once more proved to be merely wasted time; but when operations against the city were resumed, only small boats could be used. Canton was humbled on March 18, 1841. The British strategy, resourcefulness, and energy were excellent, and their casualties were insignificant (only eleven wounded); whereas the Chinese losses were reported as "heavy."

On March 20, with Canton under the British flag, Captain Elliot concluded a peace agreement with Yang-Fang, the new accredited Chinese imperial commissioner. This stipulated (a) a definite and complete suspension of hostilities throughout the empire; (b) resumption of normal trade between Canton and the British; (c) no bond to be required re the opium trade, but British subjects detected smuggling to be liable to penalties as for like offenses in Britain. These terms were declared satisfactory to Yang-Fang and to Captain Elliot, who, as Superintendent of Trade, wanted to see normal British-Chinese trade resumed without any further delay. But the Chinese never intended to live up to them, and when the British moved their powerful ships and troops back to Hong Kong, the Chinese, under the commands of the emperor, commenced organizing for a formidable attack on the British. Toward the end of April, Yih-Shan, the Tartar general, with a large body of troops, reached Canton. On May 11, Captain Elliot, after a most unsatisfactory interview with the prefect of Canton, was compelled once more to turn British interests over to naval and military commanders, who quickly sent fighting ships and men again up the Canton River, and on May 20, because of conditions in the city, foreign merchants left it. The following day, the Chinese attacked the British ships with fire rafts, and for several days fighting was intense. Tartar soldiers and Chinese mobs carried on the work of destruction, but Canton was again invested on May 25 by the British and the city ransomed for \$6,000,000, which funds had to be supplied by Hong merchants. In addition to the men on a large fleet of ships, the British used, in their infantry, artillery, and naval brigades in the occupation of Canton, 124 officers and 2,271

men, and the losses were very light. When the Tartar troops marched out of the city with banners lowered and without music, beaten and disgraced in the eyes of the Cantonese, they numbered 18,000. The British turned back all the forts that they had captured as well as the city to the Chinese; but whereas the British had made peace through a military victory, it applied only to Canton and the Canton River. Peking let it be known that it did not honor the peace terms negotiated by Yang-Fang and that the Flowery Kingdom was still at war with Britain. Neither was Britain pleased with the gullibility of Captain Elliot and his trustfulness of Commissioner Lin; for before London received news of the Second Battle of Canton, orders had been dispatched to Hong Kong for the recall of Captain Elliot, and early in August 1841 Sir Henry Pottinger arrived at the station to succeed him.

The British fleet attacked and subdued Amoy on August 26. Fighting the Tartar tiger troops and pushing northward, it captured the island of Chusan for the second time. On October 10, Chin-hae was taken, and the Chinese mandarins learned that the best of their much-vaunted Tartar troops could not stand up against the disciplined, trained, and well-equipped and commanded army of the "foreign devils." On October 13, Ningpo fell to British troops, with practically no fighting, following which the war dragged for a while. On June 16, 1842, Woosung was subdued, and the Chinese fled from Shanghai without a fight, leaving 171 cannon and much gunpowder and small arms behind them. On July 6, a large British fleet—both steam and sail—got under way to sail up the Yang-tze. Chin-kiang-foo, at the intersection of the Yang-tze and the Grand Canal, was taken by assault. On August 14, 1842, when the British fleet was in position before the walls of Nankin and about to begin a bombardment, the Chinese capitulated, and the treaty of peace was signed with due ceremony on August 29. The so-called "Opium War" was over, and the Treaty of Nankin between the British and China confirmed the cession of the island of Hong Kong to Great Britain and provided for the opening to foreign residence and commerce of the five ports of Canton, Amoy, Foochow, Ningpo, and Shanghai; for liberty of Britain to appoint consuls at each port; for communication between British and Chinese officials of the same rank on the basis of equality; for a "fair and regular tariff"; and for the payment of an indemnity to the British.

The following year (1843) regulations for trade were agreed upon, and a supplementary treaty was signed that fixed the tariff rates and assured to the British "most favored nation" treatment. A similar treaty was promptly negotiated and signed between the United States and China, followed by one between France and China, and later other trading European nations were given generally similar treaties by the Chinese. Following the Treaty of Nankin, the Chinese, fearful of British arms, had respect for the "red-headed foreign devils," and all Britishers—no matter what their character or standing—became "honourable"; yet the opium concerning which China went to war was not mentioned in the treaty, and the traffic in the drug continued as a constant source of friction. The Chinese had no desire to throw their country open to foreigners or to treat Western, or occidental, "barbarians" as equals, and Britain was not content with the trading limitations associated with five treaty ports. In late 1857, the British trumped up excuses to seize Canton. The following year their moving against Tientsin and threatening Peking forced the Chinese to sign the Treaties of Tientsin (1858), which, fixing a tariff rate on opium, legalized the importation of the drug and, among other Chinese concessions made under duress, opened additional ports to foreign residence and trade, allowed foreign merchant vessels to trade on the Yang-tze, permitted foreigners to travel in the interior of China, and sanctioned the activities of Christian missionaries, who were guaranteed freedom in the practice of their faith. In 1859 the Chinese balked at having foreign ministers resident at Peking, and Britain, with France, resumed the war, captured the capital, forced the Chinese to sign the more drastic and punitive Treaties of 1860, pay additional indemnity, and cede to Britain the Kowloon promontory opposite Hong Kong. The treaties between China and Britain of 1842-1844 and of 1858-1860 definitely humiliated China, weakened Chinese sovereignty and the existence of the state, removed

foreigners and the regulation of their tariff and control of their trade from Chinese jurisdiction, and made Christian communities a distinct sovereignty within the Chinese Empire (*imperium in imperio*). The foreign pressure was gradually increased on China during the nineteenth century and led to the Boxer uprising of 1900 and the punitive expedition of the armed forces of Christian powers to Peking and the protocol of September 1901, with its heavy indemnity to be paid over a period of thirty-nine years (secured by revenues from the imperial maritime customs), and the general subordination of the Chinese people to foreign powers.

Coolie Trade and Coolie Clippers

Much has been written of the coolie trade, and quite often this refers to the carrying of Chinese coolies across the Pacific to work on the Peruvian guano deposits and to the large number of such coolies carried on big high-class ships (including the finest clippers) from China to Cuba, Australia, and even to Northwest Coast ports of the United States. This coolie traffic, particularly that between China and Peruvian guano ports, was but little better than the African Negro slave trade. The treatment of Chinese coolies at the Chincha Islands was so diabolical, with the approval and under the supervision of the Peruvian commandant, that in 1858 the recruiting of coolies for work on the guano deposits of the Chinchas was stopped through the intervention of the Great Powers. After the British Government had bribed its own colonies and the slavers of foreign nations to free their slaves, it became necessary to find labor that could stand the severe climatic conditions of the tropical plantations. Chinese coolies were often used under conditions of transport and employment that were virtually a continuation of the old slavery methods and in many cases, as far as working conditions were concerned, far worse. However, Chinese coolie labor was not generally satisfactory for plantation work in the East or West Indies, and the more docile Indian coolies were much preferred, particularly by British taskmasters. British ships for long years handled the bulk of the coolie trade, but coolie marine transportation was not limited to the carrying of Chinese. While British vessels carried Chinese coolies to South America, Australia, the West Indies, etc., they held a monopoly of transporting Indian coolies to all the tropical parts of the vast British Empire where an abundant quantity of cheap labor was desired.

Within a year of the abolition of slavery in the British Empire, Indian coolies were being exported to Mauritius, and the British Government, scenting probable inhumanity from the use of such labor, passed a coolie emigration law in 1837, which regulated the coolie indenture system throughout the Empire and punished infringements of its specified provisions and restrictions. Coolies could be carried on ships only to the extent of one person to every $1\frac{1}{2}$ registered tons, a permit for emigration was necessary, return passage had to be guaranteed, and employment contracts were limited to five years. In 1838, four years after the first Indian coolies were exported to Mauritius, 25,000 were landed on the island, and the trade had to be stopped owing to the scandal of bad administration of the coolie emigration law. In 1842 the shipping of Indian coolies to Mauritius was resumed, and in 1856 there were 134,271 Indian immigrants settled on the island. In the fifties, the colony was very prosperous, the revenue doubling between 1853 and 1859. In 1858, records show, 825 ships entered Port Louis, and 646 cleared with cargoes and the balance in ballast; during the first half of 1859, no less than 20,000 Indian coolies were imported.

John Allan, of London, was a shipowner well known in the Mauritius coolie trade. Among the sturdy wood ships built at Sunderland for Allan's Indian coolie fleet were the following:

| Name of Ship | Year Built | Tonnage | Name of Ship | Year Built | Tonnage |
|--------------|------------|---------|------------------|------------|---------|
| PALMYRA | 1853 | 639 | DUNPHAILE CASTLE | 1861 | 720 |
| YORK | 1854 | 895 | MEDUSA | 1862 | 848 |
| MARS | 1856 | 722 | JOHN ALLAN | 1864 | 734 |
| LATONA | 1857 | 693 | BRIDE | 1870 | 830 |

John Allan also had a number of Indian-built ships, a prominent one of this class of tonnage being the *Rajah of Cochin*, a teak ship of 1,008 tons built at Malabar in 1856. He also owned the Canadian-built wood ship *Stewart Lane* of 1,162 tons, constructed at Quebec in 1864, and the iron ships *Sea Queen* of 873 tons, built at Glasgow in 1858, and *Reigate* of 1,035 tons, launched into the Thames in 1862. These ships were generally of the Blackwall frigate type as far as appearance went, with their painted gun ports, short hulls, long jib booms, and stunsails. The fastest of Allan's coolie ships was the real clipper ship *Mofussilite* of composite construction, built in 1864 by Stephen, of Glasgow, to the order of Findlay & Company, London, for the China trade. In 1870 she was bought by John Allan, who operated her fifteen years and then sold her to the Italians. It was claimed that the *Mofussilite* on one occasion, finding sailing conditions to her liking (and evidently ideal), ran from Natal to Sand Heads (Calcutta) in 15 days, but it is extremely doubtful that such a phenomenally fast passage was ever made. It is said that the ship's fastest passage from any Bay of Bengal port to Mauritius was a run of 18 days from Madras, pilot to pilot. The so-called clipper ship *John Allan*, licensed to carry 267 adults in the coolie trade, "made trips between India and Mauritius in usually about 26 days." Allan's ships loaded in the East India dock and, after making two or three trips with Indian coolies between Calcutta, Madras, and Mauritius, returned to London with a general cargo, which was discharged in the West India dock.

A terrible disaster occurred in the India-Mauritius coolie trade in the Indian Ocean about 1,100 miles N.N.E. of Mauritius on June 30, 1859. The *Shah Jehan*, a British-Indian trader of 825 tons (Capt. J. Bentham), with a crew of 75 and 410 emigrants aboard (Indian coolies and their families), caught fire on June 27, and all efforts to check it were unsuccessful. The ship had only four small boats, so three rafts were constructed of spars lashed together by running rigging. Two of the boats were swamped when leaving the ship, and about 30 of the coolies refused to go on the rafts, preferring to be burned rather than drowned. Captain Bentham and 64 of the ship's crew, in the two largest ship's boats, were picked up at sea by the French ship *Vasco da Gama* on July 5. Twelve of the crew were lost in this dreadful calamity, but only one of the 410 Indian coolies aboard the ship survived the catastrophe.

The Trinidad and Demerara (West Indian) Indian coolie trade, like that of the Mauritius "Indian emigrant" traffic, was regulated by the British (and West Indian) emigration acts, and these laws were revised from time to time and made more humane and in the interest and protection of the coolies, as it became more and more apparent that the economic salvation of the British colonies depended upon satisfied and industrious agricultural laborers. After the Negro slaves were freed on the West Indian Islands, they generally refused to work, and the importation of Indian or Chinese coolies became necessary to save the planters from bankruptcy. In the forties, some of the teeming millions of agricultural coolies in India were transported to the British West Indian Islands. In 1853 the first Chinese coolies were landed at Demerara and Trinidad, and under the operation of a humane, reasonable, and more just emigration regulatory act, these Chinese laborers evidently gave satisfaction. In a period of ten years, about 12,000 Chinese coolies settled in British possessions in or around the Caribbean, and many of them signed indentures for a second and even for a third period. However, preference was given to Hindu coolies, for they came from a part of the British Empire, and their employment outside India tended to relieve the pressure of over-population in their native land; moreover, the Indian coolie was more easily handled and controlled and more understandable to the whites. However, when the importa-

tion of Chinese labor to the British possessions terminated, the reason given was that "Chinese emigration has proved to be much more expensive" than the importation of Indian coolies.

The Chinese coolie was physically much tougher and easier to transport than the Indian coolie, who was far more sensitive, nervous, and prone to illness. Epidemics of cholera were likely to occur, and the surgeon-superintendent of a British-Indian coolie ship was a more important man on board than the captain. The *Thomas Hamlin*, an iron ship of 688 tons built on the Tyne in 1851, on a passage in the coolie trade in 1859-1860 from Calcutta to Demerara with some 400 coolies aboard, was well out on her voyage when a case of cholera was reported. Every possible precaution that science at the time could suggest was taken to cope with the situation, but when the ship put into Table Bay (when 52 days out) to replenish her medicine chest, she had had 58 deaths aboard, and her hospital was full of dysentery cases. Continuing her passage, the *Thomas Hamlin* reached Demerara River anchorage 43 days from Table Bay and 95 sailing days from Sand Heads, but 82 of her Indian coolie emigrants had died on the passage from cholera and dysentery.

Occasionally, United States-built clippers engaged in the Indian Ocean coolie trade and made a passage from a Bay of Bengal port to Mauritius. The fine American clipper ship *Blue Jacket* of 1,790 tons (built by Robert E. Jackson, East Boston, in 1854), on her maiden voyage after crossing to England, where she was sold to J. J. Frost to run in his "Fox Line" of Australian packets out of London, went out to Melbourne in fast time and on her return sailed to India, where she loaded at Madras for London. On her next voyage, she went from London to Madras in 92 days and there loaded Indian coolies for Mauritius. The local paper had this to say of this movement:

The splendid *Blue Jacket*, now owned in London, arrived yesterday, landing 600 coolies from Madras at three pounds a head. Is now loading for London with sugar at three pounds, ten shillings per ton. The immigrant agents prefer American

clippers because they make the shortest voyages and deliver the coolies in better condition than vessels of other nations. The model, finish and build of this vessel, with her cabin arrangements, have completely astonished the people of the island.

During the late fifties and most of the sixties, many of the best and fastest of the Blackwall frigates made runs in the Indian coolie trade. Conspicuous in this trade of carrying Indian coolies from Calcutta to Georgetown (Demerara) and Port of Spain (Trinidad) were the Blackwall frigates *Alnwick Castle*, *Clarence*, *Newcastle*, and *Tyburnia*. In 1860 the *Alnwick Castle* of 1,087 tons (built for Green by Pile, of Sunderland), on her return passage to England, took 327 adult coolies of both sexes and 56 children from Calcutta to Georgetown (Demerara) in 83 days, and 31 of the coolies died during the passage. The following year, the ship, in addition to carrying 777 tons of rice, took 429 adult coolies and 49 children from Calcutta to Trinidad on a passage of 73 days, port to port, reported as 69 days, but 71 days from Sand Heads (October 31, 1861) to Port of Spain (January 10, 1862). The log records an 11-day run to the Indian Ocean equator and passing Mauritius 27 days out and Cape Agulhas (tip of South Africa) when 40 days out. The ship was at St. Helena December 19, 49 days out, crossed the Atlantic equator January 1, 1862, when 62 days out, and arrived off the Bocas, Trinidad, January 8, 69 days out. Up to this point, the mileage traversed is stated as 11,582 miles; average per day, 168 miles (7 knots per hour). The best day's run was 302 miles. This was a very fast passage for a Blackwall frigate and a creditable run for any sailing ship. The freight (or passage) money received for the coolies was £5,805, and the rate was £12-18-0 per adult head; while the rice cargo gave a revenue of £1,778 at a rate of from £2-5-0 to £2-7-0 per ton. The fatalities on this passage were only 5 coolies.

The *Alnwick Castle* proceeded from Port of Spain to London, being 29 days to Gravesend, loaded for Calcutta, and again sailed from the Sand Heads on November 4, 1862. She was 10 days to the equator, off Cape Agulhas when 43 days out, at St. Helena 54 days out, crossed the Atlantic equator when 69 days out, and reached Port of Spain January 21, 1863, completing a passage of 78 days. The ship crossed the Atlantic to Gravesend in 25 days,

loaded at London for Calcutta, and made another run out from Sand Heads with Indian coolies to Port of Spain in a reported 76 days. She returned to Gravesend from Trinidad in 32 days. The average reported length of passage on these four successive runs of the *Alnwick Castle* in the Calcutta-West India coolie trade was 76½ days (maximum, 83 days; minimum, 69 days) and of her four westward crossings of the Atlantic to Gravesend, 29½ days (maximum, 32 days; minimum, 25 days). This is extremely good, uniform, fast sailing for a Blackwall frigate, and she carried a big complement of 58 men, although only 23 were listed as adult seamen.

The Blackwall frigate *Clarence* of 1,104 tons (built by Pile at Sunderland for Green in 1858) rivaled the *Alnwick Castle* as a fast Indian coolie ship. The *Clarence* left Calcutta (Sand Heads) on December 20, 1861, with 450 coolies aboard, bound for Trinidad and arrived on March 5, 1862, after a run of 75 days. She reported a loss of only 6 coolies during the passage. In a winter passage of 1864-1865, there was a different story to tell as far as mortality among the "emigrants" was concerned. The *Clarence* was towed from Calcutta December 19, 1864, with 515 coolies aboard bound for Demerara, and made sail off the Sand Heads December 21, with a strong favorable wind. She raced for several days (January 7-11, 1865) with the *Atalanta*, which was carrying 460 Indian coolies to Trinidad, was off Cape Agulhas January 31, when 41 days from Sand Heads, and reached St. Helena on February 11, when 52 days out. On this run (which has also been reported as "a very fast run of 46 days"), the *Clarence* is said to have beaten a number of ships in the trade, including Green's Blackwall frigate *Newcastle* of 1,173 tons (built by Pile at Sunderland in 1859); but the ship, at St. Helena, reported cholera raging aboard, with 46 deaths among the coolies up to that time. Continuing promptly on her passage, the *Clarence* crossed the Atlantic equator February 26, when 67 days from Sand Heads, and reached her anchorage on March 4, 1865, after a run of 73 days, pilot to pilot. During this passage, however, 124 deaths occurred, and only 391 (or only about three-quarters) of the coolies survived the epidemic, which was diagnosed as both cholera and "bilious fever." Upon arrival in port, 19 of the ship's crew and 175 coolies, suffering severely from the malady that had swept through the ship, were landed. Records at St. Helena give very different dates, for they show an arrival of the *Clarence* on January 11, 46 days out from Calcutta (Sand Heads), bound for Demerara, and the *Atalanta* on January 13 (two days later), 51 days out from Calcutta, bound for Trinidad. Other arrivals of coolie ships at St. Helena during the period November 1864-January 1865 inclusive were:

| Name of Ship | Arrival at St. Helena | No. of Coolies | Passage | Name of Ship | Arrival at St. Helena | No. of Coolies | Passage |
|---------------------|-----------------------|----------------|-------------------------|--------------|-----------------------|----------------|-----------------------|
| NICHOLAS POUSSIN | Nov. 7, 1864 | 273 | Pondicherry- Cayenne | SYDENHAM | Jan. 16, 1865 | 400 | Calcutta- Trinidad |
| LINCELLES | Nov. 28, 1864 | 400 | Calcutta- Demerara | ATHLETE | Jan. 18, 1865 | 386 | Calcutta- Demerara |
| BRECHIN CASTLE | Jan. 3, 1865 | 271 | Whampoa- Demerara | EMIGRANCE | Jan. 19, 1865 | 351 | Macao- Havana |

The passages of these coolie ships from Bay of Bengal ports to anchorage at St. Helena were reported as varying from 46 days for the *Clarence* to 65 days for the *Lincelles*. The *Brechin Castle* and *Emigrance*, carrying Chinese coolies, were 77 days from Whampoa and 80 days from Macao, respectively. Other coolie ship arrivals at St. Helena en route for the Caribbean during February 1865 were *Isabel* (269 coolies) from Macao to Havana; *Jacques Coeur* (469 coolies) from Pondicherry to Guadeloupe; *Earl Russell* (378 coolies) from Calcutta to Demerara; and *Guadeloupe* (444 coolies) from Macao to Havana. Two-thirds of the coolie ships calling at St. Helena during the four months November 1864-February 1865 carried Indian and the other third Chinese laborers destined for work on West Indian (Caribbean) plantations. None of these ships were American-built or American-owned vessels.

Among the ships that were prominent competitors of Green's Blackwallers in the Indian coolie trade are mentioned the Blackwall frigate *Tyburnia* of 948 tons, built at Glasgow for J. Somes in 1857, and the iron ship *Accrington*.

The Blackwall frigate *Lincelles* of 904 tons (built in 1858 by Duncan Dunbar at Moulmein, Burma), following Dunbar's death in 1862, was sold to John Allan, of London, and became one of "Allan's coolie ships," which transported coolies from India to Mauritius and other British tropical island possessions. Allan sold the *Lincelles* in the late 1880's to Genoese owners, but she was in the register for some forty-seven years. Another Dunbar-owned Blackwall frigate, the *Copenhagen* of 876 tons (built in 1855 also of Indian teak at Moulmein), was also reported as "sold to Allan, of London, for the Indian coolie trade."

The Green and other Blackwall frigates of prominence did not remain long in the Indian coolie trade, as their owners preferred the higher-class Indian and Australian passenger and freight service. In the seventies, eighties, and nineties, the British shipping firm of Sandbach, Tinne & Company and James Nourse, with a large fleet of iron ships owned by him, made the Indian trade a specialty and gradually rose to ascendancy until they virtually monopolized that phase of the marine transport business. Sandbach, Tinne & Company built six composite clippers of from 599 to 1,061 tons during the years 1865-1871 and followed them with three iron clippers of from 1,281 to 1,295 tons during 1875-1877. These nine ships were real clippers, sharp-lined and fast. In 1880 the firm bought two old British ships of fuller model, and the last five ships that it built in 1881-1882 were of from 1,794 to 2,054 tons, designed for carrying capacity, "with spacious coolie decks," and for comfortable passages rather than for speed. Twenty-four ships in all have been listed as coolie ships owned by Sandbach, Tinne & Company, and they range from the little *Demerara* of 214 tons, built in 1829, to the big *Godiva* (2,054 tons) and *Stronsa* (2,053 tons), built in 1882. At the turn of the century, the firm disposed of its surviving coolie ships, but some of them were in service for other owners during the first World War. The *Genista* of 1,852 tons and the *Orealla* of 1,843 tons, both built in 1882 and under the Italian flag, were sunk when under canvas by the same German submarine, within an hour of each other, near Tarragona on May 22, 1916, when thirty-four years old.

Some of the British-built iron coolie clipper ships were fast sailers. Captain Angel, in a book that he wrote in his extreme old age about Sandbach, Tinne's *Sheila*, which he commanded, claims that that coolie clipper, on her maiden voyage from the Clyde (Tail of the Bank) to India in 1877, made a run out to pilot off Sand Heads (Calcutta) in 80 days and logged the following extraordinary day's runs while running her easting down:

| Date | Miles | Date | Miles | Date | Miles |
|---------|-------|---------|-------|---------|-------|
| Apr. 14 | 328 | Apr. 16 | 360 | Apr. 18 | 358 |
| Apr. 15 | 348 | Apr. 17 | 360 | Apr. 19 | 366 |

Total for six consecutive days, 2,120 nautical miles; average per day, 353 miles; average speed per hour, 14.7 knots.

The *Sheila* was of 1,295 tons (228.7 ft. long, 36.8 ft. beam, and 21 ft. depth). She was built by Connell, Glasgow, according to Captain Angel, to beat any fast clipper ever built. The captain-author claims that on her maiden voyage the *Sheila* showed her heels in strong winds to the *Cutty Sark*, which is unbelievable, and it would seem that Captain Angel's claims for speed must be multiplied by a coefficient of enthusiasm. Capt. John Kaye, who was in the *Sheila* in 1882, reported leaving a British port by tug in company with the *Cutty Sark*. The two fast ships "kept neck and neck until we got into the strong winds off the Cape, running the easting down. *Cutty Sark* then walked away from us."

The iron ships *Sheila* (1,295 tons) and *Brenda* (1,281 tons), both coolie clippers built in 1877, were designed by Charles Connell and built by his firm for Sandbach, Tinne & Company, for which Connell had constructed the composite ship *Ailsa* (1,112 tons) in 1870 and the iron ship *Jura* (1,285 tons) in 1875. Captain Angel was of the opinion that the *Sheila*

was the speediest ship of the quartet of "exceedingly fast coolie carriers," but Lubbock says: "It seems very doubtful if the *Sheila* and *Brenda* were as fast as, not to speak of faster than, the *Ailsa* and *Jura*." He adds that the *Ailsa* is credited with a 76-day passage and the *Jura* with a 77-day run from Liverpool to Calcutta (evidently from pilot to pilot or land to pilot).

Capt. James Nourse apparently owned some thirty-five ships that appeared in the Indian coolie trade from the early sixties to the first decade of the twentieth century. These vessels ranged in size from the iron bark *Adamant* of 815 tons, built in 1858, and the iron ship *Ganges I* of 839 tons, built in 1861, to a fleet of six steel ships—*Volga II*, *Arno*, *Ems*, *Mersey*, *Forth*, and *Clyde*—of from 1,817 to 1,840 tons, built during the years 1891-1894 inclusive. The little *Ganges I*, as built, was a real clipper and has been credited with a passage of 42 days from Demerara to Cape Town; but when she was lengthened 35 ft. and her tonnage increased from 839 to 1,161 tons, she lost her speed. She was lost in October 1881, and a later *Ganges (II)*, an iron bark of 1,529 tons, built in 1882, was an ordinary coolie vessel and was sold to the Norwegians in 1904.

A fast coolie clipper was the *Allanshaw*, an iron ship of 1,589 tons, built in 1874 by Simons at Renfrew and bought from Potter & Company by Captain Nourse in 1880. It is claimed that on a passage of 65 days from dropping her pilot in the English Channel to taking a pilot off Sydney (reported as a run of 65 days from London to Sydney), the *Allanshaw* "averaged 300 nautical miles per day for 15 consecutive days when running her easting down—an average speed of over 12½ knots per hour for over two weeks at a stretch."

During the years 1884-1887, Russell built on the Clyde seven iron ships of from 1,691 to 1,703 tons for Captain Nourse's fleet of coolie ships. These vessels, named *Main*, *Moy*, *Avoca*, *Erne*, *Rhine*, *Elbe*, and *Volga*, were sisters and had very uniform sailing performances. In early 1894, the *Elbe* and the *Erne*, with coolies aboard, went from Calcutta to St. Helena in 67 days and, it is said, "were within five miles of each other throughout the entire passage." These ships carried stunsails into the twentieth century, and Nourse's coolie ships are credited with being the last merchant vessels to use such canvas. The *Avoca* had a reputation for speed. On her maiden voyage, she is said to have made a run from the Mersey to Sand Heads (Calcutta) in 88 days and followed it in 1886 with a coolie passage of 81 days from Calcutta to Demerara. The last ship built for Capt. James Nourse was the steel ship *Clyde* of 1,840 tons, built by Russell in 1894, and this famous coolie fleet was dispersed in 1908-1909.

The Indian coolie trade, as it later developed, was not by any means a one-way traffic, and the coolie ships were used at times to transport coolies back from British possessions on the Seven Seas to India. As the years advanced, British officials became increasingly exacting in regard to the carrying trade and more protective of the Indian coolies. When Nourse's coolie ship *Moy*, which left Calcutta in March 1904 with 523 coolies aboard, arrived at British Guiana with 88 of them sick and requiring hospitalization and 46 fatalities on the passage, the British governor ordered the nonpayment of £480, which would normally be due the ship's doctor for services, and stopped the whole of the third officer's gratuity and half of that of the captain.

The Indian coolie sailing ships successfully combated steamer competition in long-voyage transport for many years after steam had displaced merchant sail in ordinary marine trade. Sailing ships built for the carrying of coolies, with more attention paid to comfort and roominess rather than speed, generally landed their coolie passengers in better physical condition than did the steamers, and it was found that under intelligent conformity with British Government regulations, the coolies were often landed by the better class of coolie sailing ships, after a run around the Cape of Good Hope, in a better and more healthful condition than when they were taken aboard. The Indian coolie sailing ships during the last decades of their use were generally liberally manned, while the coolies were well housed and fed, and the treatment of the crew and coolies alike made them "happy ships"; hence it was easy to man them when ordinary trading square-riggers found it almost impossible to get a crew together.

XXII.

CONSTRUCTION OF VESSELS IN PACIFIC NORTHWESTERN STATES, WHERE AMERICA'S LAST GREAT STAND OF TIMBER IS LOCATED

The Use of Oregon Pine, or Douglas Fir (Softwood), for Shipbuilding

THE PACIFIC NORTHWEST, where America's last great stand of virgin timber was to be found, never became the wood shipbuilding center that was anticipated by many authorities. However, good timber does not necessarily make good shipbuilding timber. The American Northwest grew no oak, and Oregon pine, or Douglas fir, whereas splendid timber for spars, decking, etc., and for many purposes, is not a fitting substitute for white or live oak for the framing of ships or even for hard southern pine for outside planking.

The first vessel built in the northwestern states was the little schooner *Dolly*, launched at Astoria in 1811; but her frame was made of oak, which had been shipped out from the East on the ship *Tonquin*. Early attempts to use Douglas fir for the framing, keel, and planking of ships met with failure, for the wood decayed rapidly, and this is a fault that even the ability to provide wood in tremendous lengths and big sizes cannot overcome. In the early seventies, it was found that Douglas fir would be "reasonably durable if cut in winter, seasoned and salted." This treatment of the locally grown timber was copied after that of eastern spruce, which was being used rather extensively at Quebec in the building of cheap Canadian softwood ships. Small craft had occasionally been constructed in the Northwest, but the first sizable ship built of local timber was evidently the *Wildwood* of about 1,100 tons, laid down in 1871 and reported built for \$80,000 (or \$73 per ton). The industry, however, did not thrive, and although the San Francisco underwriters sanctioned the use of Douglas fir in shipbuilding in the early seventies, the marine fraternity was skeptical. During the twenty-four-year period 1860-1884, only 85,711 gross tons of shipping were built—an average of 3,571 tons per year. This average was materially helped by over 10,000 gross tons built in 1882; in some years, the total tonnage built was less than 1,000 tons, and most of the vessels constructed were small schooners, with some small barkentines (and a few barks) of 300 to 500 gross tons register each. The cost of these vessels, built of cheap local timber, carried expensive labor costs and, we are told by Hopkins, ran from \$70 to \$120 per ton, depending on size, fastening, metal, and outfit. Owners evidently preferred to obtain used eastern-built oak ships rather than to build new western fir ships.

Square-riggers Built on the Pacific Coast of Western Timber

Practically all the building of American deep-sea square-riggers has taken place in East Coast shipyards, with an overwhelming percentage of the total number of ships built launched from yards located north and east of the Hudson River. A very few wood square-riggers were built on the Pacific Coast, such as the *Western Shore* and *Wildwood* and, later, the *Cassandra*

Adams, which ship can be considered as representative of the best product of West Coast designers and builders. The "*Adams*" was designed by George Middlemas (from an East Coast model) and built by Hiram Doncaster to the order of W. J. Adams, lumber merchant, all of San Francisco. She was launched in November 1876 and measured 1,083 tons net register, 196½ ft. long, 40¼ ft. beam, and 22¼ ft. deep. The *Cassandra Adams*, when loaded deep, is reported to have carried 1,700 tons of wheat, but it is said that the model "had the lines of a half clipper." She was heavily sparred and canvased for a ship of her tonnage, and she carried lower yards 90 ft. long.

After four years in the Pacific Coast lumber trade, the *Cassandra Adams* was sold, first, to the owners of the Departure Bay coal mines, and a few months later she was acquired by John Rosenfeld, of San Francisco, for the Cape Horn trade, where she made a good sailing record during the years 1881-1885 inclusive. The average time of the "*Adams*" five west-bound passages around the Horn to San Francisco was 116 days (best run, 107 days and slowest run, 127 days — both from New York). The average time of five eastbound passages was relatively not quite as good, being 113 days, but the best run was a fast passage of 94 days to New York. The average of all runs was much increased by a slow run of 148 days to the same port, and eliminating this poor run, the average of the four remaining eastward passages (two to Liverpool and two to New York) was 104¼ days. About the middle of 1885, the *Cassandra Adams* was again sold for Pacific coastwise trade, and in December 1887 she once more changed owners and re-entered the lumber trade. In August 1888, because of careless navigation, she was run ashore on a reef off Destruction Island and was lost.

Four years after the *Cassandra Adams* was built, the same designer and master builder laid down a bigger square-rigger for the same owner — W. J. Adams, of San Francisco. This new and bigger Adams ship, christened the *Olympus*, was somewhat freaky in construction, being unusually beamy and shallow for her length and having only one deck. She was built at Seabeck, Wash., by Middlemas & Boole, of San Francisco, and the master builder was Hiram Doncaster, constructor of the *Cassandra Adams*. The *Olympus* was 237 ft. long, 46 ft. beam, and 17 ft. deep, and it was the boast of her builders that "the outer planking runs the whole length of the ship without any butts." The ship is reported to have carried 1,300,000 board feet of lumber under deck and to have been a good sailer. Actually, most of her spars and rigging were taken from the Down Easter *Frank Jones*, wrecked in 1877 while proceeding to sea from San Francisco. The *Olympus* was short-lived. Sailing from San Francisco on September 3, 1881, loaded with sawmill supplies, hay, oakum, kerosene, etc., she took fire and was destroyed, all hands being saved by the ship's small boats.

The Northwest's Best Twenty Years of Shipbuilding, 1890-1910

(a) *Fore-and-afters Popular in the Pacific*

In the early nineties, building in the Puget Sound region grew rather active. Barkentines and schooners of from 800 to 1,600 tons were built for the coastwise and offshore lumber trades, and in a decade 49 such schooners (1 a five-master and the others four-masters) and 9 four-masted barkentines were built. During the period 1900-1910, the Pacific Northwest launched 73 four-masted and 4 five-masted schooners and 15 four-masted barkentines, most of which were under 1,300 tons. During the last decade of the nineteenth and the first decade of the twentieth century (a period of twenty years), in addition to small craft, including a number of three-masted schooners and barkentines, there were built in the Northwest territory 150 sizable wood sailing vessels—an average of 7.5 per annum. This fleet consisted of 121 four-masted and 5 five-masted schooners and 24 four-masted barkentines. No sizable vessels of this class were built after 1910. The shipbuilding industry seemed to die a natural death, as the region could not compete in either quality or price with the shipyards of Maine,

and old ships built in the East and in Europe were on the market and could be "bought cheap" for the Pacific lumber and coal trades.

The schooner, or fore-and-aft, rig was as popular on the Pacific as on the Atlantic Coast, but it always was and always will be a rig for coastwise and not deep-sea work. The report of the Merchant Marine Commission tells us that West Coast owners insisted that none of the sailing ships of foreign nations could compete with the Pacific Coast schooners in the lumber trade, and as the fore-and-aft rig (so relatively cheap to operate) was particularly effective in the trade wind belts of either the Atlantic or Pacific Ocean, where strong beam or head winds are encountered, conclusions in regard to their deep-sea sailing ability were often too hastily drawn. The barkentine rig on the Pacific, with its yards on the foremast, was soon found to be superior in general sailing to the straight line schooner, but neither the barkentine nor the schooner rig was adapted to the Cape Horn, Cape of Good Hope, and many other deep-sea trades. The square-rigger was much faster than the schooner on routes in which strong fair winds were encountered and much safer and more reliable; it was also much cheaper in wear and tear of rigging under common conditions of light stern airs and a long swell. The Pacific Coast fore-and-aft was employed in the lumber trade from Puget Sound to Australia and the Orient, but the barkentine in such runs was superior to the schooner. As a prominent ship and schooner owner affirmed during a Congressional inquiry: "Although many schooners did go overseas, the primary field of their employment was the coastwise trade." He affirmed that, even if the American fore-and-aft did furnish much of the U. S. coastwise transportation, the schooner and the multi-masted barkentine "had little effect on the international position of the American shipping industry."

*(b) An Emergency Building Flurry during World War I, with
Final Suspension in 1919*

No vessels were built in the Pacific Northwest during the period 1910-1915, but the artificial conditions brought about by World War I, with its unprecedented demand for any kind of emergency floating tonnage, of any quality (if it would only float and carry cargoes for a few years), and at any price, boomed shipbuilding throughout the world. The American Northwest, during the period 1916-1919, turned out 125 schooners and barkentines—all primarily fore-and-afters and a few fitted with auxiliary power. Some of these vessels were small, and several measured less than 1,000 tons; but a few of this northwestern war-time emergency fleet were relatively big or at least sizable multi-masted schooners and barkentines, running as high as five masts and ranging from 1,500 to 2,700 gross tons in size. This period definitely marked the end of the building of schooners and of any type of wooden sailing ship in the Pacific Northwest, as it practically did in the better organized and more experienced northeastern state of Maine, which was the last section of the country to discontinue all wood ship construction.

It is significant that during this "shipping emergency," no square-riggers were built in America on either the Atlantic or Pacific Coast, even though the demand was for ships to make deep-sea voyages. By 1914 the United States had no men and officers to man and operate square-riggers, and the building (and management) of such windjammers was rapidly becoming a lost art. Timber was available in big virgin stands in the northwestern Pacific states, but while such wood was deemed satisfactory for use in building ships as a war emergency, neither the type of the vessel built nor the local timber used was considered satisfactory, competitive, or economic under ordinary peace-time conditions. The year 1919 definitely marked the end (extended a decade because of World War I) of the building of vessels on the Pacific Coast, even though since 1890 some eastern builders had been moving west in a last frantic effort to secure suitable timber and tap greater timber resources than were left or could be found in the East for the building of wooden vessels.

XXIII.

SCHOONERS — THE LAST STAND OF SAIL IN THE COASTWISE TRADE AND AMERICA'S LAST BIG SAILING VESSEL CONSTRUCTION

The Development and Growth of the Schooner through the Nineteenth Century up to 1909 and Its Rapid Decline

THE "STRAIGHT FORE-AND-AFT-RIGGED" schooner is decidedly a coastwise vessel, and attempts to use such craft for long voyages on the high seas have invariably been disappointing and disillusioning, if not disastrous, to the adventurers. It was the thrifty, industrious, and mentally resourceful Kennebec River shipbuilders and operators who hit upon the idea of adding a second mast to the single-masted fore-and-aft-rigged sloop and running the vessel with half the crew of a square-rigger—brig or brigantine. The economy of operation commended itself, the craft proved practical, speedy, and satisfactory for coastwise, river, and harbor work, and the schooner gradually took the place of the small square-rigger for short-voyage service.

The early relatively big three- and four-masted schooners of the eighties and nineties were built at first with an eye to what was then termed "foreign" rather than coastwise trade, and in certain deep-sea trade routes (such as to Caribbean and Central American ports on the Atlantic side), they gave satisfaction; but this was, in fact, merely extended coastwise trade as was generally the lumber and coal business such as the fore-and-afters handled economically and acceptably in the Pacific. The first four-masted schooner, the *William L. White* of 996 tons, was built at Bath, Maine, in 1880. In 1882 "The City of Ships" launched its first schooner of over 1,000 tons, and she was the three-masted fore-and-aft *Elliot B. Church* of 1,138 tons; yet in that year two four-masters were launched, the *Charles E. Balch* of 844 tons and the *Augustus Hunt* of 1,201 tons. In the year 1882, Bath shipyards built many square-riggers, of which three were over 2,000 tons, and one, the *I. F. Chapman*, registered 2,145 tons. In 1884 the splendid Down Easters *Henry B. Hyde* (2,583 tons) and *A. G. Ropes* (2,460 tons) were built, and the largest of a fleet of schooners was the four-master *C. B. Church* of 838 tons. In 1886, Bath built the four-masted schooner *Sarah W. Lawrence* of 1,370 tons, in 1887 the *T. A. Lambert* of 1,630 tons, in 1889 the *Tecumseh* of 1,658 tons, and in 1897 the *Frank A. Palmer* of 2,015 tons—all four-masters.

In 1888, Leavitt Storer built at Waldoboro, Maine, the *Governor Ames* of 1,788 gross tons, the first five-masted schooner ever built, and she was declared to have been constructed for deep-sea foreign trade. It was ten years later before a Bath shipyard launched its first five-masted schooner, the *Nathaniel T. Palmer*, and this vessel, admittedly built for the coasting trade, was of 2,441 tons (or 653 tons and 37 per cent larger than the *Governor Ames*); but in 1899 Bath yards built five-masters of from 1,807 to 2,153 tons and in 1900 launched the first six-master, the schooner *Eleanor A. Percy* of 3,402 tons—the first of a number of gigantic wood hulls that reached the record peak in 1909 with the building of the six-master *Wyoming* of 3,731 tons. During the first decade of the twentieth century,

when Bath, Maine, built mammoth fore-and-afters of wood, the large *Elizabeth Palmer* of 3,066 tons, launched in 1903, was rigged with only five and not the expected six masts. U. S. Government reports give the following tonnage figures for schooners built on the Atlantic and Gulf coasts during the forty-five years that preceded the commencement of World War I:

| Fiscal Years | Gross Tons | Fiscal Years | Gross Tons | Fiscal Years | Gross Tons |
|--------------|------------|--------------|------------|--------------|------------|
| 1870-1874 | 279,380 | 1885-1889 | 143,085 | 1900-1904 | 332,557 |
| 1875-1879 | 137,914 | 1890-1894 | 287,639 | 1905-1909 | 184,307 |
| 1880-1884 | 268,895 | 1895-1899 | 150,307 | 1910-1914 | 72,937 |

During the latter part of the nineteenth century, the coasting trade of the United States was carried on primarily and almost entirely by a large fleet of shapely, handy, and fairly fast schooners—two- and three-masters. As the economic urge for size was felt, the schooners became larger and were fitted with four masts, and during the latter part of the last decade of the century, size got somewhat out of hand. For believedly practical and successful coasting schooners, five-masted vessels with fore-and-aft rig and with fuller hulls, deeper draft, and less handiness and speed were constructed to compete not so much with steam direct as with steam indirect; i.e., not with steam-driven vessels so much as with carriers towed by steam tugs. Nicely designed three- and four-masted schooners were followed by big carriers fitted with the fore-and-aft rig, with five and six masts, and clumsy, huge, box-shaped hulls, the very bulk and unwieldiness of which, with inadequate (and often inefficient) sail power, soon brought many of them to grief. In the first decade of the twentieth century, the mammoth five- and six-masted schooners (and one seven-masted steel schooner) built in New England were mere big-carrying barges, rigged as schooners. The year 1909 was the peak year for size and also marked the real end of large schooner construction, wood or steel.

The largest wood schooner built each year at Bath, Maine, during the years 1890-1909—the period of large wood schooner construction—is recorded herewith, with the number of masts, tonnage and dimensions, name of builder, and the number of men in the crew:

| Year Built | Name | Builder | No. of Masts | Tonnage | | Registered Dimensions in Feet | | | No. of Crew |
|------------|---------------------|---------------------|--------------|---------|-------|-------------------------------|------|-------|-------------|
| | | | | Gross | Net | Length | Beam | Depth | |
| 1890 | GLENWOOD | Kelley, Spear & Co. | 4 | 1,649 | 1,569 | 246 | 46 | 21 | 10 |
| 1891 | JOHN F. RANDALL | Morse & Co. | 4 | 1,644 | 1,586 | 229 | 46 | 22 | 10 |
| 1892 | MARY E. H. G. DOW | Wm. T. Donnell | 4 | 1,198 | 1,138 | 203 | 40 | 19 | 8 |
| 1893 | DAVID P. DAVIS | G. G. Deering | 4 | 1,231 | 1,170 | 204 | 39 | 21 | 8 |
| 1894 | CHARLES P. NOTMAN | Percy & Small | 4 | 1,518 | 1,442 | 219 | 43 | 21 | 9 |
| 1895 | WILLIAM H. CLIFFORD | Percy & Small | 4 | 1,594 | 1,387 | 222 | 44 | 20 | 10 |
| 1896 | WILLIAM B. PALMER | N. T. Palmer | 4 | 1,806 | 1,625 | 257 | 42 | 20 | 10 |
| 1897 | FRANK A. PALMER | N. T. Palmer | 4 | 2,015 | 1,831 | 275 | 43 | 21 | 10 |
| 1898 | NATHANIEL T. PALMER | N. T. Palmer | 5 | 2,441 | 2,245 | 295 | 44 | 22 | 10 |
| 1899 | MARY W. BOWEN | New England Co. | 5 | 2,153 | 1,907 | 246 | 47 | 22 | 10 |
| 1900 | ELEANOR A. PERCY | Percy & Small | 6 | 3,402 | 3,062 | 323 | 50 | 25 | 11 |
| 1901 | OAKLEY C. CURTIS | Percy & Small | 5 | 2,375 | 2,001 | 265 | 46 | 23 | 11 |
| 1902 | PRESCOTT PALMER | New England Co. | 5 | 2,811 | 2,307 | 288 | 46 | 22 | 11 |
| 1903 | ELIZABETH PALMER | Percy & Small | 5 | 3,066 | 2,447 | 300 | 48 | 28 | 11 |
| 1904 | GRACE A. MARTIN | Percy & Small | 5 | 3,129 | 2,625 | 302 | 48 | 29 | 11 |
| 1905 | DAVIS PALMER | Percy & Small | 5 | 2,966 | 2,287 | 305 | 48 | 27 | 10 |
| 1906 | ALICE M. LAWRENCE | Percy & Small | 6 | 3,132 | 2,231 | 305 | 48 | 23 | 11 |
| 1907 | GOVERNOR BROOKS | Percy & Small | 5 | 2,629 | 2,019 | 281 | 46 | 22 | 10 |
| 1908 | EDWARD B. WINSLOW | Percy & Small | 6 | 3,425 | 2,483 | 318 | 50 | 24 | 11 |
| 1909 | WYOMING | Percy & Small | 6 | 3,731 | 3,036 | 330 | 50 | 30 | 11 |

In 1910, following the year in which the *Wyoming* of 3,731 tons was built, the largest schooner built in the Bath, Maine, customhouse district was the four-master *Lydia McMillan Baxter* of 1,352 tons, and in 1911 the largest schooner built was the *Montrose W. Houck* of 1,105 tons, with no schooner of over 1,000 tons register being built in 1912. After the hectic and uneconomic "emergency construction" years of World War I, the *Cecelia Cohen* of 1,103 tons was built in 1920, and this terminated for all time the building of schooners and the building of merchant sail of all types (square- or fore-and-aft-rigged of either wood or steel and intended for either foreign or coastwise trade) in "The City of Ships," which had built America's first and last sailing ships and constructed merchant sail for over three centuries.

*The Six-masted Schooner WYOMING—the Largest Wood
Sailing Vessel Ever Built in the World*

The *Wyoming* was a mammoth vessel, bigger in every dimension and fuller-bodied than the gigantic *Roanoke*—the four-masted wood shipentine of 3,539 gross and 3,400 net tons (length 311.2 ft., beam 49.2 ft., depth 20.2 ft.) built by the Sewalls, of Bath, Maine, in 1892 and previous to the entry of the *Wyoming* into trade the largest merchant sailing ship to fly the American flag while carrying cargo. The *Wyoming's* six lower masts were 126 ft. long and her topmast poles each 56 ft. long. Her sail area was stated as "12,000 yards of canvas," all, of course, "fore and aft." She was built with yellow pine planking six inches thick and was strengthened by diagonal iron cross-strapping. It was stated that she had "modern labor-saving power equipment and would operate with one-third of the crew carried on the correspondingly large square-riggers around the nineties and the turn of the century." The *Wyoming* was sold by her original owner for some ridiculously high price during World War I (reported as \$400,000—which seems absurd, as she cost much less than half that amount). She foundered to the east of the Pollock Rip Lightship, where she was trying to ride out a winter gale, and all on board were lost.

*The Famous Fleet of "Palmer's Big Wood Schooners"
and Their Tragic End*

William F. Palmer, of Dorchester, Mass., was a keen businessman, with "an eye for a ship," and he is said to have done more than any one man in the United States to make the Down East wooden fore-and-aft a success in the coasting trade. In 1894 he built in Bath, Maine, the *Sarah E. Palmer* and the *Augustus Palmer*, which averaged about 1,250 tons, with a length of about 206 ft. and a beam of 39½ ft. Gradually but persistently, however, he increased the size of his vessels and in 1897 built his first 2,000-ton schooner, the *Frank A. Palmer* of 2,014 tons gross and 1,831 tons net (length 250 ft., beam 43 ft.), but rigged her with only four masts. The following table shows the schooners that Palmer constructed during the period 1899-1908 inclusive and records their end:

| Year Built | Name | Tonnage | | Registered Dimensions in Feet | | End |
|------------|------------------|---------|-------|-------------------------------|------|----------------------------------|
| | | Gross | Net | Length | Beam | |
| 1899 | MARIE PALMER | 1,904 | 1,495 | 235 | 43 | Foundered; all hands lost. |
| 1900 | MAUDE PALMER | 1,745 | 1,485 | 215 | 42 | Wrecked, 1909. |
| 1901 | REBECCA PALMER | 2,556 | 2,125 | 251 | 46 | Foundered. |
| 1901 | BAKER PALMER | 2,792 | 2,240 | 260 | 46 | Sold and scrapped. |
| 1902 | PAUL PALMER | 2,193 | 1,763 | 253 | 43 | Foundered, 1914. |
| 1902 | PRESCOTT PALMER | 2,811 | 2,307 | 266 | 46 | Burned. |
| 1903 | DOROTHY PALMER | 2,872 | 2,315 | 273 | 46 | Wrecked. |
| 1903 | ELIZABETH PALMER | 3,065 | 2,446 | 275 | 46 | Sunk in collision. |
| 1904 | HARWOOD PALMER | 2,885 | 2,400 | 275 | 46 | Torpedoed by Germans, 1917. |
| 1904 | JANE PALMER | 3,138 | 2,823 | 297 | 49 | Sunk in collision. |
| 1904 | SINGLETON PALMER | 2,859 | 2,357 | 269 | 45 | Lost at sea, 1920. |
| 1905 | DAVIS PALMER | 2,965 | 2,287 | 305 | 48 | Foundered, 1909; all hands lost. |
| 1907 | FANNIE PALMER | 2,233 | 1,726 | 263 | 45 | Foundered, 1916. |
| 1908 | FULLER PALMER | 3,060 | 2,445 | 275 | 46 | Foundered, 1914. |

The Palmer fleet made good money for years. Then, for a time, the vessels struggled for survival through the sheer brutality of bigness; but it was a hopeless fight being waged against the more reliable, handy and economic, well-organized steam tow barges. The tragic end of these big, unwieldy multi-masted fore-and-afters is conspicuous. Of Palmer's last fourteen big schooners, as shown above, only one survived service to go to the shipbreaker, but the career of all the other thirteen ended disastrously. One was sunk by the Germans during the war, and of the other dozen, seven foundered at sea, two were wrecked, two sank in collision, and one was burned.

The Great "Winslow" and the "Lawrence" Fleets of Big Wood Coastwise Schooners

William F. Palmer was not alone in his frenzied program of building and operating big and still bigger fore-and-afters for the American coasting trade. J. S. Winslow & Company, of Portland, Maine, building its schooners in Bath, ran him a close second for years and, like Palmer, steadily increased the size of its big wood fore-and-afters in an attempt to hold a good part of the coasting freight business. The following is a record of the larger vessels of the great Winslow fleet of schooners:

| Year Built | Name | Tonnage | | Registered Dimensions in Feet | |
|------------|---------------------|---------|-------|-------------------------------|------|
| | | Gross | Net | Length | Beam |
| 1890 | GEORGE E. WALCOTT | 1,553 | 1,476 | 213 | 44 |
| 1895 | MARY E. PALMER | 1,526 | 1,456 | 221 | 42 |
| 1896 | WILLIAM B. PALMER | 1,806 | 1,625 | 257 | 42 |
| 1898 | ALICE E. CLARK | 1,622 | 1,395 | 227 | 43 |
| 1898 | NATHANIEL T. PALMER | 2,441 | 2,245 | 295 | 44 |
| 1900 | WILLIAM C. CARNEGIE | 2,664 | 2,381 | 289 | 46 |
| 1901 | MILES M. MERRY | 1,590 | 1,318 | 215 | 43 |
| 1901 | OAKLEY C. CURTIS | 2,375 | 2,001 | 265 | 46 |

MERCHANT SAIL

The "Winslow" and the "Lawrence" fleets, of Portland, Maine, are apparently mixed up, and many of the later big schooners appear in both categories. The following big six-masted schooners, all built at Bath, Maine, are generally credited, however, as belonging to the "Lawrence" fleet.

| Year Built | Name | Tonnage | | Registered Dimensions in Feet | | |
|------------|--------------------|---------|-------|-------------------------------|------|-------|
| | | Gross | Net | Length | Beam | Depth |
| 1900 | ELEANOR A. PERCY | 3,402 | 3,062 | 323.5 | 50 | 24.8 |
| 1902 | ADDIE M. LAWRENCE | 2,807 | 2,196 | 292.4 | 48.3 | 22.1 |
| 1904 | RUTH E. MERRILL | 3,003 | 2,360 | 301 | 48.2 | 23.7 |
| 1906 | ALICE M. LAWRENCE | 3,132 | 2,231 | 305.1 | 48.2 | 22.6 |
| 1908 | EDWARD J. LAWRENCE | 3,351 | 2,483 | 320.2 | 50 | 23.9 |
| 1908 | EDWARD B. WINSLOW | 3,425 | 2,483 | 318.4 | 50 | 23.7 |
| 1909 | WYOMING | 3,731 | 3,036 | 329.5 | 50.1 | 30.4 |

Also the six-master MERTIE B. CROWLEY, which was wrecked on Nantucket Shoals in 1914.

The *Alice M. Lawrence* was lost in a gale off Nantucket in 1913. The *Edward B. Winslow*, when carrying supplies to the Allies during World War I, was destroyed by fire off the French coast in 1917; the fire was of incendiary origin and attributed to a German member of the crew. In the same year, the *Addie M. Lawrence*, carrying munitions, foundered off the coast of France (she was fifteen years old). The *Ruth E. Merrill* was wrecked on a shoal off Wood's Hole, Mass., and the crew lost; the *Eleanor A. Percy* foundered in the Atlantic in 1918 (when eighteen years old); and the *Wyoming* was lost with all hands, during a severe winter gale, east of Pollock Rip Lightship.

*The Coastwise Transportation Company, of Boston, and Captain
Crowley's Fleet of Large Schooners—Both Steel and Wood*

The Coastwise Transportation Company, of Boston (Capt. John G. Crowley, manager), operated the following large schooners in the coastwise trade:

| Name | Year Built | Material | Tonnage | | Registered Dimensions in Feet | |
|--------------------|------------|----------|---------|-------|-------------------------------|------|
| | | | Gross | Net | Length | Beam |
| GEORGE W. WELLS | 1900 | Wood | 2,970 | 2,743 | 300 | 48 |
| THOMAS W. LAWSON | 1902 | Steel | 5,218 | 4,914 | 360 | 50 |
| WILLIAM L. DOUGLAS | 1903 | Steel | 3,708 | 3,478 | 316 | 48 |
| MARGARET HASKELL | 1904 | Wood | 2,140 | 1,910 | 240 | 48 |
| S. J. GOUCHER | 1904 | Wood | 2,547 | 2,249 | 272 | 48 |

The *George W. Wells*, built by Bean at Camden, Maine, and the *Eleanor A. Percy* (3,402 tons), built by Percy & Small at Bath, Maine, were the first of the six-masted schooners. By a strange coincidence, these two schooners, the only six-masted sailing ships afloat, crashed together in collision off Cape Cod one summer night in 1901. The "Wells" fared worse than the *Eleanor A. Percy*, but apparently neither vessel suffered lasting damage. The *George W. Wells* made some fast runs under unusually favorable sailing conditions. She is

credited with a maiden passage from "the Delaware Breakwater to the Morro" (Havana, Cuba) in 6 days, coal laden, and also with a run north from Brunswick, Ga., loaded with railroad ties, to Sandy Hook in 4 days.

The *Margaret Haskell* (said to have been owned, as were many other Boston schooners, by the firm of Crowell & Thurlow) was a five-masted wood schooner designed by Crowninshield "to carry 3,900 to 4,000 tons of coal on 22-ft. draft." She was described as a good example of a medium-sized five-master and "well adapted for economic coasting service." The vessel had two decks, with a lower tier of widely spaced hold beams. She was equipped with a vertical boiler and compound hoisting engine, with winch heads for handling sails and geared to the windlass with a messenger chain. The schooner was "fairly heavily constructed," with a Virginia white oak frame and Georgia pine plank, ceiling, keelsons, beams, stanchions, and decks. Her masts were single sticks of Oregon pine, the fore and main masts being 29 in. and the others 28 in. diameter. Her owners and builders claimed that 45-ft. booms were as long as could be conveniently handled and that about 75 ft. should be considered the maximum for the spanker boom. The lower sails were made of the heaviest duck that, it was claimed, could be sewn together; i.e., No. 2-0. They were fitted with reefs, but it was only in case of an emergency that a sail was reefed, except occasionally the spanker.

In 1908, The Coastwise Transportation Company operated a fleet of five steamers of from 1,105 to 2,421 tons register, a small schooner of 861 tons, and a large barge of 2,258 tons; but the company was in the public eye primarily because of its management of the two big steel schooners, the seven-masted *Thomas W. Lawson* and the six-masted *William L. Douglas*. It was said that the company's record was made "wild and spectacular" by the operation of the "dramatic and senseless freak," the *Thomas W. Lawson*, "built more for size and advertising than for successful trading and ultimate profit." And again, "The '*Lawson*' was a floating monument created to cater to the vanity of the copper magnate and notorious stock market operator and gambler of Boston bearing that name [and, incidentally, to get him deeply interested financially in the building of the big schooner]."

The Seven-masted Steel Schooner THOMAS W. LAWSON, 1902-1907

This big "7-poster," carrying only fore-and-aft canvas and the only seven-masted sailing vessel ever built, was constructed at the yard of the Fore River Ship and Engine Building Company at Quincy, Mass., in 1902. She had an all steel hull 395 ft. long over-all, measured 368 ft. long on the load water line, which was at a draft of 25 ft. 6 in., and had a beam of 50 ft. and a depth of hold of 35 ft. 2 in. The registered tonnage was 5,218 tons gross and 4,914 tons net. Evidently, this big sailing schooner was designed in conformity with (1) the old British-originated tradition that an iron ship should be narrower than a wood one and (2) the American belief that "50 ft. is the absolute maximum beam for a sailing ship." In regard to the latter, the limitation was sound when applied—as was intended—to wood ships. Conformity to British notions of hull proportions was unfortunate, however, and it made all American-built steel shipentines (which had a 45-ft. beam) and big schooners lacking in initial stability—a fact that was responsible for the loss of the big square-rigger *Arthur Sewall* and the mammoth schooner "*Lawson*" and came very close to causing the loss of the British-designed American-built steel shipentine *Dirigo* on her maiden voyage.

The *Thomas W. Lawson* was a high-sided and narrow, cumbersome craft, with three steel decks throughout her length and six cargo hatches, and it was said by her owners that

the use of steam-operated mechanical labor-saving devices saved them the wages of twenty men. The schooner was fitted with bilge (anti-rolling) keels, had steel lower masts 135 ft. long, with Oregon pine topmasts 58 ft. long, and, it was reported, had 43,000 sq. ft. of canvas. Her cost was stated at \$250,000 and also at \$300,000 when ready for sea, and it was the boast of her owners that she would be operated with a total complement of only sixteen men, which was equivalent to 326 tons gross register per man. The *Thomas W. Lawson* was doomed, from the first, to be a "white elephant." She was too big and had too much draft for coastwise work and, with her schooner rig, was not suitable for service over the world's great trading courses. This leviathan of the American mercantile marine was "a big steel hulled brute." She was logy, unwieldy, sluggish under canvas, and difficult to handle. She operated for some time between Gulf ports and the Delaware, but in 1907 was chartered for a voyage to carry a cargo to Europe.

B. B. Crowninshield, who was credited with making the plans for the colossal *Thomas W. Lawson*, in a technical paper on merchant sail read in New York in 1907, evidently limited his endorsement of the schooner rig to coastwise vessels and was wise in doing so. A few weeks after he had presented his paper, the big and only seven-masted schooner (*Thomas W. Lawson*), when five years old and on her first transatlantic voyage (with case oil) to Europe, was reported to have got into difficulties among the Scilly Islands during the night of December 13, 1907. It was reported that in an endeavor to ride out a storm, she drifted on the rocks and "turned turtle, with the loss of every man on board excepting one single survivor." A detailed and seemingly more accurate report of the catastrophe, published later, is quoted herewith in part. Official records show that two men aboard her were saved and fifteen lost.

In the middle of December, a coast guard of the Scilly Islands saw the *Thomas W. Lawson* in difficulties in Broad Sound. Life-boat crews went to her assistance. She had lost her bearings in the fog, and was loaded with case oil. She was anchored in a dangerous position in a rising gale close to a lee shore, wind blowing hard, but the St. Agnes life-boat was able to get close enough to put the Trinity House pilot, Hicks, on board. The life-boat returned to port. The ship's lights were visible until 2:50 the next morning, December 14, when her lights suddenly disappeared. The *Thomas W. Lawson* had all her anchors down, but they apparently failed to hold against the force of the gale, and dawn showed far out among the reefs, sticking out of the gray and white smother of broken water, a low, dark ship, not unlike the back of a whale. This was all that remained of a great ship. The

masts had gone, and the vast hull lay on its side swashed by the seas. The St. Agnes life-boat crew went out, found the wreck nearly submerged, fast being broken up, and no sign of life there. They located one able seaman, badly injured, on the rocks, suffering from exposure. He died on Sunday, two days after the wreck. The life-boats were out all day on the 14th and, nearing dusk, saw two bodies, one of which turned out to be Capt. George Dow, of the *Thomas W. Lawson*, and the other his engineer, Edward Rowe. The captain had a broken wrist; Rowe was unhurt, but suffering from exposure and weakness. They were both hauled aboard the life-boat and landed at St. Agnes. No other survivors were found, but five bodies were recovered a few days later. In all, fifteen men and the Trinity House pilot were drowned.

Parts of a supposedly "authoritative" article in regard to the *Thomas W. Lawson*, written later, are quoted herewith:

At the time of her launching at Quincy, Mass., the *Lawson* was heralded as a maritime error comparable only to the famous *Great Eastern*. To begin with, the vessel cost \$300,000, which, in 1902, was something of a figure, and still is, for that matter. Christened for the financier, Tom Lawson, the ship was built as a coal carrier to run between New England ports and Norfolk, Va. From the bowsprit tip to the end of her seventh boom she measured 500 feet and was designed to carry over 8,000 tons.

She was fitted with the modern improvements of a steamer, except, of course, a propeller; lighted by electricity and steered by steam.

The *Lawson* was not necessarily a failure from a financial point of view. It was on the physical side that she showed signs of being a bad guess. She was too large and drew too much water to be maneuvered readily in any of the New England harbors outside of Boston, and in light winds, with a heavy cargo, she was unwieldy. In heavy blows she was like a half-tide rock, never clear of the sweeping seas.

Eventually her owners, the Coastwise Transportation Co., were able to get her off their hands on a five-year charter, and they turned her over to the Sun Oil Company.

The *Lawson* should never have been sent to sea without extensive alterations which would have divided her up inside, confining the oil in tanks rather than allowing it to flow about, creating an inner swell which threw her off balance. Loaded, however, she was without the tanks, and the vessel sailed from the Delaware for Germany on November 19, 1907.

Prolonged bad weather delayed her progress across the Atlantic. Being schooner-rigged for coastwise service, rather than square-rigged, didn't help

matters with the oil slopping about inside her. She lost all her life-boats, and Captain Dow finally managed to drop anchor in Broad Sound, off the Scilly Islands, Lands End, even though it was a dangerous position. It was still better than what the *Lawson* had been experiencing when under sail, and as long as the anchors held he felt she was all right. No one ever expected that riding at anchor would cause the oil inside her to shift so violently that the ship would capsize, yet that is what happened shortly after midnight.

This article indicates that the *Thomas W. Lawson*, at the time of her loss, was carrying oil in bulk—which is doubtful. Other reports refer to the big schooner as carrying "case oil" as did the Sewall-built four-masted steel shipentines built for the Sewalls' own account and for the Standard Oil Company. As the *Thomas W. Lawson* was never built as a bulk carrier and was not constructed with subdivisions—transverse, horizontal, and longitudinal—for carrying any liquid cargo, it would seem that her loss can be attributed to grounding broadside to a gale of wind and heavy sea and that her huge target of hull and high center of gravity (with low stability) caused her, with her damaged under-water body and water-logged hull, to turn over when forced onto the rocks by a fierce gale and smashed by heavy seas.

Other American-built Steel Schooners—the Six-masted WILLIAM L. DOUGLAS and the Five-masted KINEO

The *William L. Douglas*, described as "a more moderate 'Lawson'" and built by the same group, at the same yard, a year after the big "7-poster," was a big six-masted schooner of 3,708 tons, whose prime virtue as a coastwise trader and merchant sailing vessel was expressed in the statement: "She is not as bad as the 'Lawson.'" She had a length of 316 ft., a beam of 48 ft., and a depth of 28.9 ft. and, whereas not as extreme as the *Thomas W. Lawson*, was suitable for neither coastwise nor deep-sea work. After some years of indifferent service, the *William L. Douglas* was rebuilt as a sailing bulk oil tanker in 1912 and renamed *Delaware Sun*. Not proving satisfactory when operated as a tanker with her original schooner rig, she was cut down to a towing barge and was sunk in collision at Sabine, Texas, December 18, 1917, when fourteen years old.

There were only three steel (or metal) schooners built for ocean (or coastwise) service in the United States. In addition to the seven-masted "*Lawson*" and the six-masted "*Douglas*," which were built by the Fore River Ship and Engine Building Company at Quincy, Mass., in 1902 and 1903, respectively, the five-masted schooner *Kineo* of 2,128 gross and 1,868 net tons (length 259.5 ft., beam 45.3 ft., depth 22.9 ft.) was built by Arthur Sewall & Company, Bath, Maine, primarily with ocean trading in mind. Whereas a good schooner for coastwise service, this vessel's experiences (described elsewhere) proved her to be a pronounced failure, "beyond controversy," for trading on the Seven Seas, and she was sold and later rebuilt as the motor vessel *Maryland*.

Crowninshield's Views in 1907 on Large Wood Coastwise Schooners

B. B. Crowninshield, generally considered in the United States as an authority on the fore-and-aft rig around the turn of the century, in a paper read before a technical society at New York in late 1907, said that the large wood schooners (of some 2,800 or 3,000 tons) "have been in existence only a few years, but I believe they will be short-lived [which was correct]." Crowninshield thought that many more large schooners would be built, but "probably of no greater size than the largest ones in use today." When he wrote his paper, the largest, the *Alice M. Lawrence* of 3,132 tons, was afloat, and the *Edward J. Lawrence* of 3,350 tons was building; but two years later (in 1909) the *Wyoming* of 3,731 tons was to be launched at Bath, Maine, into the Kennebec River.

Crowninshield said that wood schooners "are still considerably cheaper to build per carrying ton than a steel vessel; they are seldom at sea more than two weeks at a time. The cargo [carried in their coastal trade operations] is practically uninjured by water and owing to their small angle of deadrise and the great weight of timber built into their bottoms, and also, of course, owing to the low center of gravity of their rig, they are able to sail to the coal ports without ballast." Continuing, Crowninshield said:

Any considerable further rise in the price of timber, which seems inevitable, on account of the limited and fast-disappearing supply, must bring the cost so near to that of steel that they will no longer be profitable. The rig, however, is well adapted to coasting vessels and it seems probable that multi-masted schooners will continue for many years yet, until, in fact, a steam-engine is made of much greater economy than at present, or perhaps the gas-producer engine will solve the problem of cheap power and drive the schooners out of business.

The big schooners are largely handled by steam; the halyards, sheets, and topsail clew lines all can be, and in fact usually are, led through the neces-

sary lead blocks to the ever-ready winch-head: when it is largely a question of looking sharply aloft so as not to keep up the pull after the sail is up or the clew sheeted out. Frequently a careless man will part a halyard or pull the head of a staysail clear through the score of the block on the topmast head. The windlass and pumps, although still fitted with hand gear to satisfy the obsolete rules of the classification societies, are inevitably operated by steam. This makes it possible for a three-thousand-ton vessel to be properly handled by a crew of eighteen men all told, whereas if she were full square-rigged she would require almost three times that number.

The Small Crews Placed Aboard Big Fore-and-afters as Compared with the "Economy" Crews Used on Square-riggers in the Last Days of Deep-Sea Sail

The number of men in the crew of multi-masted schooners engaged in the coastwise trade, as shown in official records, was seemingly "ridiculously small." The big six-master *Edward B. Winslow* of 3,425 tons, built in 1908, carried a crew of 11 men, but so did the giant of all wood schooners, the *Wyoming* of 3,730 tons, built the following year (1909). The five-master *Fuller Palmer* of 3,060 tons, built in 1908, carried 10 men; whereas the smaller "five-sticker" *Fannie Palmer* of 2,234 tons, built in 1907, carried 9 men, and the five-master *Carroll A. Deering* of 2,114 tons, built in 1919, carried 8 men. The *Brina P. Pendleton*, a four-master of 1,513 tons, built in 1918, carried 7 men, and the *Phoebe Crosby* (also a four-master) of 1,050 tons, built in 1920, carried 6 men. The big seven-masted steel schooner *Thomas W. Lawson*, when wrecked while engaged in foreign trade, could

have had only 17 men aboard this mammoth 5,218-ton vessel, including the captain, mates, engineers, and wireless operator; for the official records show that 2 men aboard her were saved and 15 lost.

When Donald McKay got his *Great Republic* (then measuring 4,555 tons) ready for sea, he had a crew of "100 men and 30 boys," in addition to officers, to man her, and after being cut down to 3,356 tons and a crew had been signed up by an economy-minded skipper and management, she sailed with 50 able seamen. The clipper *Challenge* of 2,006 tons, on her maiden voyage, sailed with a crew of 60 men, and this square-rigger was 224 ft. long and 43 ft. beam; while McKay's *Sovereign of the Seas* of 2,421 tons (length 258 ft. and beam 44 ft.), on her initial passage, sailed with a complement of 106 men, of whom 80 were rated as "able-bodied seamen." In later years, when economy in the operation of ships was the watchword and speed was a secondary requirement compared to cargo carrying, freight revenue, and low operating costs, the Sewall wood shipentine *Shenandoah* had a complement of 38 men, all told, when "cut to the bone" by Capt. "Jim" Murphy. This large wood square-rigger compared in dimensions with the big schooner *Wyoming* as follows:

| Name of Vessel | Type | Year Built | Registered Tonnage | | Registered Measurements in Feet | | | Number of Complement |
|----------------|---------------------|------------|--------------------|-------|---------------------------------|------|-------|---------------------------|
| | | | Gross | Net | Length | Beam | Depth | |
| SHENANDOAH | 4-masted shipentine | 1890 | 3,406 | 3,258 | 299.7 | 49.1 | 19.9 | 38 |
| WYOMING | 6-masted schooner | 1909 | 3,730½ | 3,036 | 329.5 | 50.1 | 30.4 | 11 (excluding captain) |

*Coastal Sailing Packet Lines Demanded Square-rigged Ships, and Schooners
Were Not Acceptable for This Distinctly Coastal Service*

In early days, small and medium-sized schooners quickly proved efficient and satisfactory as well as profitable in coastwise trade and in the eighties, because they were fast, handy, and economical, were the leading freighters in coastal water traffic. However, it is well to note that during the coastwise sailing packet days, which covered approximately the forty-year period from about 1820 to the Civil War, the square rig, even for the smallest vessels, was considered so far superior to the schooner or topsail schooner rig in speed, comfort, and reliability of service that only full-rigged ships could win patronage. All the real, established and regular first-class sailing packet lines, throughout the entire period of packet sail, employed for coastwise as well as deep-sea and transatlantic service only three-masted square-rigged ships. Packets as small as 200 or 300 tons register were so rigged, and no schooner—which was considered an inferior and cheap rig "thoroughly unsuited to the demands of the packet trade"—ever found a place in any first-class sailing packet line. Even barks were taboo, and, moreover, a strong prejudice developed in the early years for three-masted ships, and the brig rig was not favored even for very small vessels. It is surprising that following the experiences of the Revolutionary War and the War of 1812, when the American topsail schooner-rigged privateer proved effective and the Baltimore schooner rose to prominence and later was in demand as a pirate, slaver, and illegitimate trader, the American coastal sailing packet lines would not use vessels of schooner rig, but demanded and used only square-rigged ships as long as the service lasted and until steam replaced sail.

The Advantages and Disadvantages of the Schooner Rig

It has been said that "the great schooner was the last technical achievement of the builders of wooden sailing ships." This statement needs elaboration, for the achievement was limited to two points: (1) sailing to windward and (2) reduction of crews, which made "the great American schooner the most weatherly and economical sailing vessel in the world" for restricted trade such as coastwise service. In beating to windward, the schooner rig permitted a vessel to point higher into the wind than a square-rigger, the fore-and-aft rig being aerodynamically more efficient as well as simple and highly centralized, and since, in maneuvering, the sails were largely self-controlling, the small and even moderate-sized schooner could usually navigate the narrow waters of the coastal seaways with relative celerity as compared with a square-rigger. The schooner's weakness was in sailing before the wind, and whereas in head winds it was superior to the square-rigger (at least theoretically) and was at no disadvantage in beam winds and many steady trades, the rig was very unsuited for most ocean routes, where unfavorable winds were usually encountered, particularly with high seas or long rolling ocean swells and light airs. Under such conditions, big schooners would thrash themselves to pieces, and the wear and tear on gaff jaws, hoops, canvas, and gear was tremendous.

The square-rigged ship required a big crew to handle her sails, and most of the work could be done only by hand. Much of it had to be done aloft, and it was hard and dangerous work, which fact caused serious labor problems in the days of green crews, "riff-raff and gutter sweepings," and shanghaied sailors. Many lines had to be handled simultaneously and by hand on a square-rigger (to set a main topsail required the handling of eleven different lines at the same time), the number of running ropes was legion, and the amount of gear and mechanism that had to be kept ready for instant handling was tremendous. Moreover, an able seaman had not only to keep all the gear in good condition but also to be so familiar with it that he could put his hand on any of the two hundred or more running ropes on the darkest night. Compared with the work on a square-rigger, the operation of a fore-and-aft was so simple that it was "mere child's play." With the masts placed close together and the sail area effectively divided, the rig of the schooner was so centralized and organized that it was unnecessary to handle many lines simultaneously, and the running gear of the big lower sail on each mast, consisting of three major lines, could be quickly and effectively handled by a steam winch—a condition quite different from that on a square-rigger, where operating labor power had to be both aloft and on deck and where the effective use of steam power to any great degree was impossible. The outstanding virtue of the fore-and-aft rig for sailing vessels was in the reduction of man-power, and the schooner became increasingly popular as the labor shortage increased and as it became more difficult and finally impossible to obtain a crew of able and ordinary seamen.

*The End of the Construction of Schooners for the
U. S. Merchant Marine*

Following the peak year of 1909, the building of large schooners was discontinued because of marine catastrophes and the generally felt futility of fighting steam tows with such unwieldy vessels that depended entirely on canvas and wind for power and "a pitiful

handful of men" to handle them in all kinds of weather. When the *Davis Palmer*, a five-master of 2,965 tons (built in 1905), foundered off Boston Harbor in 1909 and when the last survivor of the fleet, the *Dorothy Palmer*, a five-master of 2,872 tons (built in 1903), was lost off the Massachusetts coast, it became generally known that these "giant fore-and-afters" were being operated and fighting for survival with a crew of only nine men—one man per 325 tons registered tonnage. It was said, "This is surely a world's record for attempted economy in the personnel of sailing vessels engaged in ocean transportation." This fact, added to many other economic statistics and following the tragic loss of the mammoth steel seven-masted *Thomas W. Lawson*, discouraged all further investments in big schooners—wood or steel—for either coastwise or deep-sea trade, and the death knell of schooner construction was tolled in the United States in 1909. A few wood schooners were constructed during the artificial shipbuilding boom years of the first great World War, but prior thereto and afterwards, there was practically no demand for sailing schooners in the United States—large, medium, or small—for merchant service.

The Failure of the Schooner on Deep-Sea Long-Voyage Trade Routes

As early as the first part of the last decade of the nineteenth century, when square-riggers were finding it practically impossible to sign up crews of the number required and with a measure of experience, some operators (such as J. S. Winslow, of Portland, Maine) began to replace ships and barks with three- and four-masted schooners, and it was said that as schooners were particularly efficient in the trade wind belts where strong beam or head winds were encountered, they would do well in many deep-sea runs. In the mid-eighties, a four-masted schooner made a run from a North Atlantic U. S. A. port to China and Australia, and schooners were occasionally found later in the South American coffee and hide trades, in the West Indian sugar trade, and even on the routes to the west coast of Africa. They were used in the Pacific not only in the coastwise trade but also for carrying lumber to Australia and the Orient. In the 1901 Report of the U. S. Commissioner of Navigation, we read that the rig of the schooner was not well adapted for the Cape Horn trades, in which the ability to run in heavy weather was important. On routes in which strong fair winds were encountered, not only was the square-rigged vessel very much faster but also the schooner was likely, in light fair breezes and a heavy sea or swell, to "slat herself to pieces."

In the Farquhar Report of 1890, we are told that the primary field of the employment of schooners was the coastwise trade, and J. S. Winslow, the Portland shipowner, then testified that his company owned fifty sailing ships, of which ten were in foreign trade. Statistics prove that whereas schooners were responsible for a good percentage of the shipbuilding construction and most of the coastwise transportation for many decades, they at no time had any perceptible effect on the foreign trade of American shipping. As merchant sail, they were adapted for and practically limited to coastwise (and Great Lakes) trade.

The schooner *Governor Ames*, built by Leavitt Storer at Waldoboro, Maine, in 1888, was the first five-masted schooner ever constructed and of 1,778 tons gross and 1,689 tons net register. It was said that she had been built especially for foreign trade with five masts and, therefore, relatively shorter booms and gaffs than she would have had if given the usual four masts. On her maiden voyage, the *Governor Ames* was dismasted and was taken into Boston, where she was given five new spars and sent down to South America lumber laden. Subsequently, she was sent around Cape Horn to San Francisco and had a terrible experience, but she was well built and, with an able, courageous, and resourceful command, reached her destination. For a while, dreading the return east, she was employed in the

Pacific trade, but was finally ordered east to enter the coal trade between the southern coal ports and New England, for which service she was well fitted. Much was said of the schooner *Governor Ames's* roundings of the Horn, both westward and eastward, but her commander affirmed that the schooner rig was not fitted for such ocean trade routes, and the marine fraternity unhesitatingly declared: "Schooners have no business to attempt voyages [from North Atlantic ports] to California, China, Australia, or India; such deep-sea voyages via Cape Horn or the Cape of Good Hope should be reserved for square-riggers."

The Sewalls had built in 1903 their only steel five-masted schooner, which had been described in the prospectus sent to investors in 1901 as of "about 2,000 tons register, estimated to carry 3,000 tons of cargo, or over, on sea voyages, and about 3,500 tons in the coasting trade, equipped with all the best labor-saving devices for working ship and handling cargo"—and to operate with a crew of eleven men. This schooner, which was named the *Kineo*, was of 2,128 tons gross and 1,868 tons net (length 259.5 ft., beam 45.3 ft., depth 22.9 ft.) and was fully believed by the Sewalls to be capable of making successful voyages over any deep-sea trade route in the world. The smaller number of crew required to man a schooner (as compared with a square-rigger) intrigued them.

Under the able command of Capt. Frank W. Patten, experienced in both fore-and-afters and square-riggers, the *Kineo* was sent to sea in January 1905 from Norfolk, Va., with 2,907 tons of coal aboard bound for Manila. The log of the *Kineo*, on a painfully long 161-day passage to the Philippines, is a convincing denunciation of the schooner rig. Typical entries were: "Light breeze from westward and a heavy sea. Lowered down everything to save sails from slatting to pieces. More use for yards"; and, "Obliged to lower everything. Don't like this lowering sails while there is wind, but the rig is at a disadvantage." The sails had to be lowered and raised so much that the demands for steam exhausted the fresh water supply. After repairs at Manila, the *Kineo* was ordered to proceed to Newcastle, N.S.W., to load coal for Honolulu; but Captain Patten, when again at sea, got into more trouble with the schooner and, while trying to make Sydney for docking and more needed repairs, put into Brisbane, where he arrived November 21, 1905. Subsequently, he made Newcastle, took coal to Kahului (Hawaiian Islands), loaded 3,081 tons of sugar, and completed the voyage with a heartbreaking 205-day passage from the Sugar Islands to the Delaware. In the report on the awful last leg of the voyage home, which was eastward around the Horn (the easy way), we read: "The wear and tear has been something enormous"; and, "There is not a mast hoop left on the ship. She has shot them to pieces"; "We have lost 14 sails this trip, and for the most time while running our 6000 miles of Easting down. Often times the Schooner has been obliged to sail N.E. when her course was S.E. and my experience in the *Kineo* off the Horn is a repetition of what the *Gov. Ames* went through and what every other big Schooner will go through." But for the grit and resourcefulness of Captain Patten, the *Kineo* would never have completed her first and only long-distance deep-sea voyage, and her experience merely confirmed what competent deep-sea commanders had long known: that the schooner rig was positively unsuited for service on the world's ocean trade routes.

Samuel Watts, of Thomaston, Maine, built a four-masted schooner for Capt. William J. Lermond to command when his full-rigged ship *Joseph B. Thomas* (1,938 tons), built in 1881, was sold in 1889 to the California Shipping Company, of San Francisco. Captain Lermond made such a good record with this schooner (bearing the same name as his old ship) and, being an able deep-sea navigator, did so well with her on selected deep-sea runs that Watts and his friends thought that, after all, there might be a good future for well-built vessels of fore-and-aft rig in deep-sea work. It was decided to build "a large and capacious five-masted schooner" for Captain Lermond to command and operate primarily in foreign trade. Captain Lermond, having taken the schooner *Joseph B. Thomas* successfully on various passages with lumber from New Brunswick to Britain and thence with coal to Mediterranean ports, thought so well of the idea that he invested all his personal fortune in the venture. In 1908 he took the big new wood schooner *Washington B. Thomas* from

the ways, superintended her rigging and fitting-out, then sailed to Virginia in ballast, and loaded 4,000 tons of coal (on a trial work-down passage) for Portland, Maine. On this her first voyage, heavy weather being experienced, the schooner took shelter near Stratton's Island, four miles off Old Orchard, and when the easterly gale was at its height, the unwieldy schooner went ashore and promptly commenced to break up. The crew took to the rigging and was later rescued by the Coast Guard, but the captain was severely injured and his wife battered and drowned. Captain Lermond lost all his savings of a lifetime in the *Washington B. Thomas* and died in 1918 in the Sailor's Snug Harbor, New York. The loss of the *Washington B. Thomas* nullified the good record of the *Joseph B. Thomas* and stopped any further attempts on the part of New England wood (or steel) shipbuilders and owners to compete in the world's foreign trade with fore-and-afters. It was said: "If the schooner cannot take care of herself in the coastwise trade, it is far too risky to put such vessels in deep-sea work to operate on sea routes much less favorable to the fore-and-aft rig." The dramatic loss of the *Washington B. Thomas* and the trouble (and losses) being experienced with other big wood fore-and-afters also put the finishing touch on the building of further unwieldy schooners for the coasting trade, seemingly ended the transition and competitive period, and gave the victory in both foreign and coasting trade to steam and kindred power, either in self-propelled vessels for foreign trade or in self-propelled units, or such as were towed by steam, for the coastwise service.

Large Multiple-masted Schooners with Yards on the Foremast — Attempts to Use Some Square Sails to Improve the Fore-and-aft Rig in Deep-Sea Work

In certain trades, such as the Pacific, putting yards on the foremast of a multiple-masted schooner materially improved its sailing performance, reliability, and the wear and tear, and barkentines proved quite successful and economic in such limited service. Big four- and five-masted schooners, with yards on the foremast, were used for years on the Pacific, particularly in the lumber-carrying trade, and a few freak rigs developed in attempts to get the advantages of some square sail on a big fore-and-aft without the necessity of shipping a big crew. A queerly rigged craft named the *Olympic* (1,469 tons) was built at Bath, Maine, in 1892. She was a true four-masted bark, square-rigged on the fore and main and fore-and-aft-rigged on the mizzen and jigger (described as "a two-masted schooner chasing a brig"). This sailing vessel was admittedly of a "compromise rig" and was designed and built by experienced seafaring businessmen, who sought to obtain most of the sailing qualities of a square-rigger with much of the economy of operation of a schooner. The *Olympic* was built at the close of the era of wood deep-sea sail, but the rig was not copied during the following decade, when steel square-riggers were built on the Kennebec.

The Sewalls, of Bath, notwithstanding their long and broad experience with square-riggers on the Seven Seas, most surprisingly developed the notion that the fore-and-aft rig could be used on the long deep-water trade routes of the world, which meant rounding one or both of the two big capes (Good Hope and the Horn). When the Sewalls were fighting for contracts from the government to carry American coal in American ships to the Philippines, to offset the political charge of a monopoly in their handling of such business, they naively urged big wood schooner owners to bid on this carrying trade and assured them that their fore-and-aft-rigged vessels would give satisfaction in the service. Apparently, to justify their stand, the Sewalls built the five-masted 2,128-ton steel schooner *Kineo* in 1903 and sent her out to Manila with coal in early 1905. The result proved beyond doubt the unsuitability of the schooner rig in such long-voyage deep-sea trades.

In 1903, Crowninshield had advocated to the Sewalls the building of big five-masted barkentines for the Cape Horn and deep-sea trade routes of the world. Evidently, he had impressed the Sewalls so much with the relative economy of operation of a fore-and-after as compared with a square-rigged ship that the Bath firm of builders and managing owners sought to dispose of the entire Sewall fleet of shipentines to Hawaiian sugar interests ("at a figure very much more favorable to you than any you can obtain for new tonnage") and put the proceeds of sale into steel five-masted barkentines. The vessels that the Sewalls were interested in substituting for square-riggers in deep-sea work during the period 1903-1905 were five-masted schooners with yards on the foremast. The yards on the fore helped the idea of the proposed vessels materially, but they were still primarily and essentially fore-and-afters, and although the rig proved quite satisfactory and economical on the Pacific Coast, it was thoroughly unsuited for Cape Horn service and most of the world's deep-sea trade routes. It is of interest to note that the five-masted barkentine designed by Crowninshield for the Sewalls in 1903, for which the Bath firm sought to get money from investors in 1904 and 1905 to build at its yard, was 332 ft. long, 47 ft. beam, and 29 ft. deep. It had tanks for 2,100 tons water ballast, an estimated deadweight capacity of 5,400 tons, and steam appliances for working ship and cargo and pumping ballast; it was to have had a ship's company of "24 all told, including 4 boys or apprentices," or, it was stated, "two-thirds the number required to sail a square-rigged ship." It is also interesting to note that after resisting changes in the British-acquired 45-ft. beam steel model (and even building the relatively small steel schooner *Kineo* of this same beam to save the expense of new moulds, etc.) and after fighting the use of water ballast tanks for some ten years, the Sewalls, in a last futile attempt to stay in business as the builders and managers of ocean-going merchant sail, were willing to change their model (and rig) and turn rightabout-face as regards their earlier strongly expressed views. The gesture, however, was futile, for the days of the profitable operation of deep-sea merchant sail had passed.

The Passing of the Schooner and the End of Merchant Sail

As late as 1936, the five-masted wood schooner *Edna Hoyt* put into Boston, Mass., and was much photographed and described in the public press as "a relic of the old days." With freights "looking up," the *Edna Hoyt*, built in 1921 at Thomaston, Maine, and said to be "the last of a fleet of fifty-eight 5-masted schooners built in the United States during a construction period of about a quarter of a century," was put in service, but not in the coast-wise trade for which she was designed and built. Her owners, considering only possible freights and revenues and not the adaptability of the schooner for the trade in which profitable cargoes were at the moment available, sent the fore-and-after across the Atlantic, and on February 3, 1938, the public press of the United States carried the following cabled story:

An era in shipping ended today as the captain of the *Edna Hoyt*, last American 5-masted schooner remaining in commission, announced that she would end her days as a floating coal storage barge in the harbor of Lisbon, Portugal, following repairs that would fit her for that service, but not for deep-sea work. Capt. George F. Hopkins, of Baltimore, reported that the hull of the schooner had suffered such severe strains during an attempted voyage from Cardiff, Wales, to Venezuela, South America, that

she had been required to put into Lisbon badly damaged and in distress.

Captain Hopkins—after 44 years spent at sea in wind-jammers—will retire. He turned the big wood schooner's chronometer, log-book and papers over to her owner, Capt. Harold G. Foss, and the last of a once-formidable fleet of American fore-and-aft wood sailers has made her last voyage. This marks the end of American deep-sea commercial sail.

The following Associated Press item dated Boston, Mass., February 26, 1938, was printed generally in the newspapers of the country:

DECENT BURIAL FOR 5-MASTER

Bath-built Vessel to be Burned at Sea

A decent burial was planned today for the *Cora F. Cressy*, of Bath, Maine, one of the last five-masted schooners afloat. Instead of rotting in some back-water creek, the once-proud sailing vessel will be towed out to sea and a torch applied. Her funeral will be held within the next two weeks, and as soon as workmen have completed their job of stripping her of all gear and movable material having a cash value.

The *Cora F. Cressy* was built by Percy & Small, Bath, Maine, and was launched in 1902. . . . She has a registered tonnage of 2,499.5 tons gross and 2,089.4 tons net, and is 273 ft. long, 45.4 ft.

beam, and 27.9 ft. deep. The *Cressy* spent many useful and busy years as a coastwise coal and general cargo carrier. In 1929, when freight for sailing vessels became hard to find, she was converted into the *Showboat*, and for a time, as one of the city's most popular night spots, led a bright and gay existence. Depression and the repeal of prohibition ended that phase of her career, and for many years she has languished, tied up at a local wharf. The passing of the *Cora F. Cressy* is one more significant and noteworthy act emphasizing the end of commercial sail for all time—both coastwise and deep-sea.

XXIV.

FULL SHIP-MODELED TOWING BARGES WITH AN AUXILIARY BALD-HEADED SCHOONER RIG—THE SUCCESSORS OF THE BIG MULTIPLE-MASTED SAILING SCHOONERS IN THE AMERICAN COASTWISE TRADE

The Economic Operations of Large Fleets of Towing Barges and Handy Seagoing Steam Tugs

IT WAS NOT—as predicted by Crowninshield—the steam, gas, or oil-propelled vessel that drove the sailing schooner from the coastwise trade of the United States. The tows of barges and the system of towing a string of barges had been so perfected by the early twentieth century that tows were operating regularly and cheaply from the coal ports as far east as Bangor, Maine, and as far south as New Orleans. During the first five years of the twentieth century, schooners in the coastwise coal trade were receiving from \$1.75 to \$2.00 per ton, and as late as 1907, W. F. Palmer, one of the biggest operators, boasted that his fleet of sixteen great schooners was earning 22 per cent per annum on the total cost. By 1910 barge competition had knocked down the coal freight rates to “between 60 cents and \$1.00 per ton, depending on the state of the charter market.” In the coastwise lumber trade from the Carolinas to Philadelphia, schooner rates, which had been between \$4.50 and \$5.25 per 1,000 bd. ft. during the period 1906-1914, were cut by barge operations to as low as \$2.40. The competition of towing barges gave the owners of schooners freight rates on which there was little, if any, profit, the returns became unattractive to investors, and the construction of schooners ceased. The vessels afloat were forced into the offshore or more distant Central and South American trades, which caused an oversupply of tonnage at these markets and greatly depressed freight rates. It was primarily the well-organized use of towing barges that brought an end to the operation of sailing vessels in the coastal trade of the United States and rang the death knell of the schooner.

Groups of towing barges appeared first in the Long Island Sound coal trade in the early seventies, some going as far east as Narragansett Bay. Tows of numerous square-ended scows lashed together were not adapted to service in exposed waters. In the nineties, however, a new type of ship-modeled barge began to appear, and old ships were being cut down to end their days of usefulness behind a tug. The new vessels built for towing barges had full models for carrying big loads at a light draft and ample hatches for facilitating loading and discharging. They were fitted with short pole masts and a bald-headed schooner rig, with no bowsprit or head sails, and carried a very small crew. The barge tows, when they became well organized, had many advantages over the big multiple-masted sailing schooners. The cost of manning, maintenance and repairs was very much less, and only one set of navigating officers was used for an entire tow of some half dozen big barges. The more shallow-draft barges could go to wharves both to load and unload; whereas the larger

schooner frequently had to anchor in deep water both to receive and discharge part of her cargo. The steam tugs, which were the expensive part of the towing business, were kept continuously employed, often arriving with one string of barges and departing with another the same day. The towing business got into the hands of sizable and responsible corporations, which sometimes owned as many as fifteen towboats and over a hundred seaworthy barges. They offered a reliable, regular and scheduled service direct to their patrons' water fronts, which was something that even the largest of the sailing schooner operators could not do.

*Size and Number of Large, Especially Built Seagoing Tow
Barges Constructed at Bath, Maine, 1895-1923*

An idea of the relative quantity and average size of the large, especially built, bald-headed, fore-and-aft-rigged seagoing tow barges can be gleaned from the following statistics of such big barges built at Bath, Maine, during the period 1895-1923 inclusive:

| Tow Barges Over 1,000 Tons | | | Tow Barges Over 1,000 Tons | | |
|-------------------------------|--------|--------------------|-------------------------------|--------|--------------------|
| Years | Number | Average Tonnage | Years | Number | Average Tonnage |
| 1895-1900 | 66 | 1,001.7 | 1911-1917 | 17 | 1,491.63 |
| 1901-1908 | 25 | 1,040.7 | 1918-1923 | 9 | 1,583.49 |

The greatest number (also the largest tonnage) of rigged wood tow barges built at Bath, Maine, in any one year was in 1899, when twenty-five such vessels were built, totaling 24,449 gross tons and averaging 978 tons gross and 869 tons net each. During the years 1905, 1906, 1909, 1910, 1914, and 1922, no sizable schooner-rigged towing barges were built at Bath, and the average size of such barges built in the years 1904, 1907, and 1908 was relatively small, being but 803, 693, and 866 gross tons, respectively, as against 1,324 tons in 1903 and 1,315 tons in 1902. The year 1923 marked the end of wood shipbuilding in Bath, Maine, and in the United States, and during that year two rigged wood tow barges were built of 1,034 gross tons each.

*Big Bald-headed Schooner-rigged Towing Barges of Over
1,500 Tons Built at Bath, Maine, 1896-1901*

In 1896, Kelley, Spear & Company built the well-constructed *Ocean Belle* of 1,594 tons, a "fine, big towing barge, schooner-rigged but carrying no topsails or head gear," and during the next few years the following "big vessels" of this type were built at Bath, Maine:

| Name | Year Built | Gross Tonnage | Builder | Name | Year Built | Gross Tonnage | Builder |
|---------------|------------|---------------|---------------------|----------|------------|---------------|---------------------|
| NEW YORK | 1898 | 1,688 | Wm. Rogers | INDIANA | 1900 | 1,627 | New England Co. |
| KENTUCKY | 1898 | 1,575 | Wm. Rogers | HAVANA | 1900 | 1,618 | Kelley, Spear & Co. |
| WEST VIRGINIA | 1898 | 1,565 | Wm. Rogers | GEORGIA | 1900 | 1,610 | New England Co. |
| VIRGINIA | 1898 | 1,548 | Wm. Rogers | IOWA | 1900 | 1,607 | New England Co. |
| OHIO | 1899 | 1,630 | Kelley, Spear & Co. | SAGUA | 1901 | 1,586 | Kelley, Spear & Co. |
| SUNBURY | 1899 | 1,544 | Kelley, Spear & Co. | MATANZAS | 1901 | 1,579 | Kelley, Spear & Co. |
| DARBY | 1899 | 1,513 | Kelley, Spear & Co. | CARDENAS | 1901 | 1,577 | Kelley, Spear & Co. |

Old Square-rigged Ships and Younger Schooner-rigged Vessels Cut Down to Towing Barges—G. G. Deering & Company, of Bath, Maine, Turns from Schooners to Towing Barge Operations

Prior to the eighties, tow barges were generally small wood hulls, often of the square-ended scow type used for transporting heavy bulk cargoes a short distance in protected waters. Gradually, the distances traveled by such tows increased, and as it was highly desirable to restrict the number of barges behind a single tug, the demand came for bigger barges. The operating field of tow increased with the years, and the larger barges, being more seaworthy, ventured outside the harbors, rivers, sounds, and "protected water" areas into the open ocean behind larger and more powerful tugs. The distance between the units of a string of towing barges was increased, and the barges were made larger with modeled hulls. Gradually, there came a demand for old and sizable square-rigged ship hulls that had passed their usefulness as profit-makers operating under their own canvas on the Seven Seas to be cut down and converted into barges to be towed up and down the coast in company with other sizable ship-shaped hulls behind a powerful steam tug.

A few of the clipper ships built in the fifties ended their days as tow barges. The fine old 1,679-ton Cape Horner *David Crockett* and the first-class clipper *Dashing Wave* of 1,180 tons, both built in 1853, spent their last years in coastwise trade behind a tug, the "*Crockett*" being cut down and converted to a tow barge at Philadelphia in 1890. The clipper ship *Expounder* of 1,176 tons, built in 1856, when twenty-five years old (in 1881), was changed over to a barge, and she saw service for another quarter of a century (until 1906) behind a steam tug. The *Charter Oak* (941 tons), built in 1854, was converted to a barge in 1889, and the *Marianne Nottebohm* (1,116 tons), built in 1857, after forty years of sea service under canvas, operated for five years as the tow barge *Carbon*. The *Mindoro* (971 tons), built in 1864, was cut down for towing in 1896; the *L. B. Gillchrest* (1,158 tons), built in 1866, became a barge in 1886; and the *Helicon* of 1,274 tons, the *Sovereign of the Seas II* of 1,443 tons, and the *Highlander* of 1,352 tons—all built in 1868—were cut down for barges in 1886, 1898, and 1899, respectively. The number of square-riggers built in the sixties, seventies, and eighties that were converted, as they grew old, to barges and ended their days behind towboats is very large. The ship *America* of 2,050 tons, built in 1874, was cut down to a barge in 1907, and the *M. P. Grace* of 1,863 tons, built in 1875, was converted for towing in 1906. The fine Down Easter *A. G. Ropes* of 2,342 tons, built in 1884, was sold to Lewis Luckenbach for a barge in 1906, and the last surviving member of Sewalls' "Big Wood Four," the *Shenandoah* of 3,258 net tons (built in 1890), after a lay-up

at San Francisco due to a lack of profitable business, sailed for New York in February 1910 and, when twenty years old, was bought by the Scully towing line for \$36,000 for conversion into a coal barge. During World War I, because of the need of deep-sea tonnage, several old ships that had been cut down into barges were refitted as barks and again sent to sea under their own canvas.

The demand for sailing schooners for coastwise service gradually passed around the turn of the century as had the use of square-riggers for deep-sea work before them. By 1908 many sizable vessels built as sailing schooners, when in first-class physical condition and by no means too old to continue under their own canvas, followed the example of the numerous old square-riggers and for economic operating reasons had been, or were being, cut down and converted into tow barges.

In the late fall of 1901, when the Sewalls, of Bath, were building the *Atlas*, the last of a trio of four-masted steel shipentines for the Standard Oil Company, of New York, the demand for large towing oil barges had grown to be so much greater than the call for tonnage to transport case oil to the Orient that the owners of the new vessel held up work on her, as she was approaching completion on the stocks, while they seriously debated whether to rebuild her as a bulk oil tank barge before she was launched. The *Atlas* was completed as originally planned, but the Sewalls took material that they had on hand, ordered for the building of the five-masted schooner *Kineo*, and built a tow barge with it for the Standard Oil Company. After the *Kineo* was built, she was acquired by The Texas Company to carry oil in bulk as a sailing schooner, and this proving unsatisfactory, she had power installed and became the motor vessel *Maryland*. The *Erskine M. Phelps*, built in 1898, the fastest sailer of the Sewall-built fleet of steel shipentines, was bought by the Union Oil Company, of California, in early 1913 for the purpose of converting her into an oil tank barge, which apparently was still in active service on the Pacific Coast during World War II. The Texas Company leased Arthur Sewall & Company's closed-down steel shipyard in 1916 and built oil tankers as emergency tonnage during the first World War.

G. G. Deering & Company, of Bath, Maine, was a big coasting schooner and wood vessel builder, but this firm "went to barges" as the size of the barge hulls increased and the steam-towed barges made the operations of sailing vessels along the coast unprofitable. In 1908 this company was operating a fleet of ten barges of various sizes, the cut-down five-masted schooner *Henry O. Barrett* (1,807 tons) being the largest. The only schooners that G. G. Deering & Company was continuing to operate at that time were:

| Name | Year Built | Tonnage | | Dimensions in Feet | | |
|--------------------|------------|---------|-------|--------------------|------|-------|
| | | Gross | Net | Length | Beam | Depth |
| DOROTHY B. BARRETT | 1904 | 2,088 | 1,799 | 259 | 45.4 | 25.1 |
| ELISHA ATKINS | 1906 | 1,260 | 1,049 | 202 | 40.9 | 21.1 |

The Largest Auxiliary-rigged Seagoing Towing Barges Built at Bath, Maine

The following is a list of the largest auxiliary-rigged seagoing towing barges built at Bath, Maine. These vessels were well built, with full but well-shaped models for the purpose intended, and operated to drive the sailing schooner from the United States coastwise trade and, therefore, from the seas.

MERCHANT SAIL

| Name of Barge | Tonnage | | Year Built | Builder | Registered Dimensions in Feet | | |
|-------------------|---------|-------|---------------|-----------------------|----------------------------------|------|-------|
| | Gross | Net | | | Length | Beam | Depth |
| ULAK | 2,324 | 2,211 | 1920 | Percy & Small | 268.3 | 46 | 23.6 |
| FALMOUTH | 2,236 | 2,074 | 1919 | Kelley, Spear & Co. | 274.2 | 46.2 | 21.4 |
| SAMUEL W. FAUCHER | 1,973 | 1,798 | 1917 | Kelley, Spear & Co. | 262.8 | 44.1 | 21 |
| SANTIAGO | 1,918 | 1,752 | 1902 | Kelley, Spear & Co. | 271.4 | 46.3 | 19.3 |
| CIENFUEGOS | 1,915 | 1,757 | 1902 | Kelley, Spear & Co. | 271.4 | 46.2 | 19.3 |
| ATLANTIC | 1,901 | 1,680 | 1915 | Kelley, Spear & Co. | 264.1 | 44.2 | 20.5 |
| PENN | 1,849 | 1,708 | 1913 | Kelley, Spear & Co. | 264.8 | 44.1 | 20.1 |
| MOUNT HOPE | 1,802 | 1,584 | 1912 | Kelley, Spear & Co. | 264.7 | 44.1 | 19.6 |
| FALL RIVER | 1,759 | 1,545 | 1911 | Kelley, Spear & Co. | 262.4 | 44.1 | 19.5 |
| RICHMOND | 1,720 | 1,634 | 1919 | Crosby Navigation Co. | 228.8 | 41.9 | 21.6 |

XXV.

AMERICAN WOOD VERSUS BRITISH IRON SAILING SHIPS, WITH SPECIAL REFERENCE TO THE CALIFORNIAN-EUROPEAN GRAIN TRADE DURING 1881-1885

DURING the first half of the 1880's, some very fine wooden full-rigged ships of the Down Easter type were operated under the United States flag in the booming California grain-exporting trade. European markets wanted grain from the American Pacific Coast (California and Puget Sound), and after United States-built ships had supplied the demands of East Coast ports, they were required (in order to keep gainfully employed) to compete in the San Francisco and European grain trade with the final and perfected product of British Empire wood shipwrights and with a fleet of fast, well-modeled and well-rigged British iron sailers. Competition was keen and speed in demand, but in addition to being fast sailers, the American ships, in order to hold their share of the business, had to have good carrying capacity and the ability to operate economically with relatively small upkeep and maintenance charges. In average speed over a long voyage, the wooden ship with bottom coppered proved her superiority to the iron ship with a bottom that fouled rapidly. Indeed, because of this practical and admitted defect in iron ships, these iron sailing vessels were built for decades with medium clipper lines to overcome their "maintained-sea-speed" handicap in competition with the wood ships of similar model. Even then, their foul bottoms and the tendency to load too deep to get a paying cargo resulted in continuing in the service for decades the American wooden ship with fuller model, large sail spread, big cargo capacity, and "driving skippers" to compete successfully with iron long after common sense suggested that the wood era of shipbuilding had gone forever.

In 1872-1873, 136 American square-riggers were engaged in the California grain trade, some of them old clippers whose days of usefulness in that turbulent trade were about over. Two years later, the number of domestic-built ships was down to 62, while foreign vessels in the service continued to number 203. In 1877-1878, only 50 American-built ships were in the run, after which the number steadily increased to 169 in 1882-1883, in which period 202 foreign ships were engaged in the trade. In 1881-1882, the record high for foreign ships was reached with 405, with American ships (practically all Down Easters) numbering 154—a grand total (and all-time record) of 559 ships in the run. Foreign ships, most of which were of iron, continued in the trade with a conspicuous uniformity of number, averaging about 214 vessels for the decade ending 1892; but during this period the Yankee Down Easters and American bottoms steadily dwindled in number from 116 to 39. In the bumper harvest year of 1882, the 559 vessels (before referred to) carried 1,128,031 tons of wheat and barley and 919,898 barrels of flour.

Capt. William W. Bates's Survey and Analysis of the Performances of Sailing Ships of Different Types and Nationalities Engaged in the Trade

Capt. William W. Bates (at one time U. S. Commissioner of Navigation), in his *AMERICAN MARINE* and later "Comparative Performances of American and Foreign Ships" (written in 1893), refers to the many difficulties that American shipowners and builders had to contend with in their competition with foreign carriers, particularly Great Britain. It has been generally admitted that "the greatest handicap that American wood Down Easters encountered in their competition with British ships in the Californian-European grain trade was in the discrimination which Lloyd's made in favor of British iron-built ships as against United States-built wood ships." Arbitrarily established insurance rates on ships and cargoes carried lessened the revenue from freight and increased the operating costs of American ships. They were handicapped by "wage-and-keep" bills, United States legislation, and general costs of maintenance and operation; but Captain Bates proved that when it came down to a comparison of seaworthiness and safety—the prime qualities in which Lloyd's was supposed to be interested—the American wooden Down East square-rigged ship during the period 1881-1885 was superior to either British wood or British iron sailing craft of the same general type. The British marine fraternity benefited by the prejudiced discrimination of Lloyd's, which was based on imaginings and not on clean-cut recorded facts, and British marine writers did their best to discredit Captain Bates when he made scientific investigations and reported facts. Bates proved by detailed, cold-blooded statistics, compiled for a period of four consecutive years, that the American wood Down Easter had smaller repair bills and fewer accidents, averaged higher speed, and carried relatively more cargo, with a higher operating efficiency, than the British-built and operated iron ship.

Basil Lubbock, the British maritime writer, says: "Captain Bates tries to prove that the [American] wooden Down Easters were superior in speed and efficiency, carried more, were more economical, turned out their cargoes in better order, and, lastly, were more seaworthy than the British iron-built ships. As regards speed, Captain Bates contended that, although the British iron sailing ships had clipper lines, their passages were spoilt because of foul bottoms and overloading, whereas although no wooden Down Easters had been built from clipper models since the North and South [Civil] War, they were able to do better through their superior all-round efficiency." Lubbock, like all other British champions of their merchant marine and maritime kingdom, instead of seeking to find errors in Bates's compilation of operating facts and discredit the American by actual figures, weakly adopts the attitude of saying: "Captain Bates was trying his best to help the wooden Down Easter in her fight in the world's markets against the iron-built foreigner, and I think his object would have been helped better if he had devoted more space to descriptions of the beautiful wooden ships turned out in Down East ports during the early eighties rather than to the compilation of endless statistical tables." Since when was an economic discrimination as represented by statistical insurance tables influenced and an injustice remedied or at least modified (if not corrected) by any encomium of the beauty of a ship or any other product? Insurance statistics were presumed to be based upon facts of risks and losses, not fiction, prejudice, or imaginings. Bates supplied the facts and was equipped to defend all his conclusions, but no British authority even attempted to refute with facts any of the statements that Bates made. There were many emotional vaporings—narrow, selfish, and expressive of prejudiced British interest. However, the infallible British Lloyd's pursued its usual patriotic trend in the interest of the British merchant marine and paid no official attention whatsoever to the facts reported as a result of an intelligent, exhaustive survey and search for truth covering a period of four consecutive operating years.

It was in 1883 that Capt. William W. Bates undertook the compilation of statistics relative to the performance of vessels engaged in the Californian-European grain and wheat

flour trade, seeking to find what type of ship (and nationality) showed the highest efficiency. Commencing with the wheat year 1881-1882, the survey was conducted most thoroughly by a careful study of all authoritative records and available data for a period of four consecutive years. Eight different nations had shipping tonnage engaged in this wheat trade, but only six of them had vessels making a total number of voyages to warrant inclusion in the survey. Of the vessels considered, only 7/10ths of one per cent (numerically) were steamers (all British), and of the sailing vessels (both wood and iron), 63.4 per cent were British, 27.7 per cent American (U.S.A.), 5.3 per cent German, 1.5 per cent French, 1.3 per cent Norwegian, and 0.8 per cent Italian. In preparing tables of performances, Bates considered all the ships of each type and nation as a fleet, and the figures that he presented expressed the results for the average vessel of each group.

*Comparative Records Showing Averages of Each Class of Ships
in the California Trade, 1881-1885*

The following is a scientifically prepared and presented record of the comparative performances of each of the important divisions of fleets carrying grain and flour from San Francisco, Calif., to European ports covering the four-year period from July 1, 1881, to July 1, 1885. It was prepared from detailed, authoritative figures by Capt. William W. Bates and shows that the Yankee wood square-riggers of this period were a better marine risk than either British iron or British wood vessels engaged at the same time in the same trade. In this analysis, the British and American sailing fleets combined, consisting of 1,377 ships, represented 92 per cent of the total tonnage in the trade, which included German (39 wood and 41 iron sail), Norwegian (20 wood sail), French (16 wood and 7 iron sail), Italian (12 wood sail), and a few British steamers, which numbered 11 out of a total of 1,523 vessels; of these, 418 were American wood and 959 British sail (198 wood and 761 iron). None of the various ships appearing in the trade competed in high performance average with the vessels of the United States and Britain.

The following comparative statement shows figures (prepared by Bates) giving the number of each class of vessels covered by the survey, with the average registered tonnage of each group, the cargo carried, rate of freight, length of passage, and efficiency as carriers on the eastbound runs from California to Europe during the four operating wheat years 1881-1882 to 1884-1885 inclusive.

| Nation- ality | Wood or Iron | Number of Ships | Regis- tered Ton- nage | Cargo in Centals | Value in Dollars | Rate of Freight £- s- d | Carriage—Centals per Ton | | Passage in Days | Efficiency Pounds per Ton per Day |
|---------------------|--------------------|-----------------------|---------------------------------|---------------------|---------------------|-------------------------------|-----------------------------|-----------|--------------------|---|
| | | | | | | | Laden | Delivered | | |
| U.S.A. | Wood | 418 | 1,634 | 52,400 | 82,113 | 2- 7- 6 | 32.06 | 32.08 | 125.55 | 25.549 |
| British | Iron | 761 | 1,356 | 44,618 | 75,595 | 2-11- 5 | 32.89 | 32.87 | 130.69 | 25.155 |
| British | Wood | 198 | 1,272 | 42,394 | 68,201 | 2-11- 9 | 33.34 | 33.31 | 131.76 | 25.283 |
| German | Iron | 41 | 1,007 | 31,999 | 56,500 | 2- 8- 4 | 31.79 | 31.79 | 136.73 | 23.247 |
| German | Wood | 39 | 1,196 | 37,697 | 63,675 | 2- 9- 1 | 31.51 | 31.49 | 135.53 | 23.239 |
| Norwegian | Wood | 20 | 929 | 29,346 | 46,900 | 2-14-10 | 31.60 | 31.60 | 127.25 | 24.833 |
| French | Iron | 7 | 806 | 27,541 | 44,987 | 2-10- 8 | 34.16 | 34.16 | 151.43 | 22.557 |
| French* | Wood | 16 | 628 | 20,680 | 36,718 | 2-18- 9** | 32.97 | 32.81 | 139.52 | 23.500 |
| Italian* | Wood | 12 | 881 | 28,527 | 41,203 | 2- 6- 2† | 32.38 | 32.38 | 141.92 | 22.819 |
| British steamers | Iron | 11 | 1,761 | 61,330 | 106,850 | 2-19- 9** | 34.82 | 34.57 | 83.70 | 41.301 |

Total number of vessels, 1,523. *No French wood in 1882-1883; no Italian wood in 1883-1884. **A large proportion sailed in year of highest freights. †A large proportion sailed in year of lowest freights.

The average American wooden ship exceeded all others in size, weight, and value of cargo as well as cheapness of freight, and particularly she carried larger and more valuable cargoes than her somewhat smaller British iron rival, whose average rate of freight was $81\frac{1}{3}$ per cent higher. It is significant that the relatively inferior British wood ships obtained the advantage of freight rates higher than those of the better built and operated American Down Easters; but British Lloyd's worked in devious ways to obtain its nationalistic objective, and discrimination against United States vessels is evident throughout the entire list. Wooden ships constituted about 48 and iron vessels 52 per cent of all the tonnage in the trade, and of the entire tonnage, 32 per cent was U. S. A. wood and $48\frac{1}{3}$ was British iron. All composite ships were considered as wood in this survey, which fact operated to help the showing of British wood sail, and some of the new "much-vaunted steel ships of Britain" were included in the iron category. In the table, British iron steamers show an undue carrying power, for the compilation was based on net registered tonnage, and most of the steamers benefited by too great a reduction for machinery space. A fairer comparison between steam and sail could have been obtained by considering the gross as well as the net registered tonnage. In the column headed "Passage in Days," as most of the runs in the grain trade were to Cork (Queenstown) "for orders," the length of passage to other ports, if made direct, has been adjusted to make the south of Ireland port the terminus of all the passages. American wood ships excelled in speed and beat British iron by 4.1 and British wood by 5 per cent. The German, Italian, and French ships (particularly French iron vessels) made dull passages, and Norwegian ships were favored in sailing performances—as were those of Germany—by relatively light loads due to national regulations; in this respect, French wood benefited in comparison with French iron. Bates felt that his column headed "Efficiency" was an accurate comparative measure of the combined sailing and carrying powers of the average ship of the several fleets. It is expressed in "pounds per ton per day," and the figures were obtained by dividing the pounds per ton as delivered by the length of the passage in days.

Bates shows the comparative efficiency of the American and British fleets of sailing ships in the trade for each of the four wheat years of the survey as follows:

| Fleet | 1881-1882 | 1882-1883 | 1883-1884 | 1884-1885 |
|---------------------|-----------|-----------|-----------|-----------|
| American wood | 25.534 | 25.1659 | 26.1361 | 25.4344 |
| British wood | 24.917 | 26.4197 | 25.4443 | 24.7216 |
| British iron | 25.837 | 24.8210 | 24.4100 | 25.1981 |

Compared with the ships of all the other seven nations that had vessels in the Californian-European wheat trade, Bates shows the superiority in both speed and efficiency of American wood ships as carriers as follows, with the average performances of the entire fleet of each type and nationality of sailing ships being considered:

| Description of Fleet | Superiority of American Ships | | Description of Fleet | Superiority of American Ships | |
|----------------------|-------------------------------|-----------------------|----------------------|-------------------------------|-----------------------|
| | Speed Percentage | Efficiency Percentage | | Speed Percentage | Efficiency Percentage |
| British wood | 4.95 | 1.053 | German wood | 7.94 | 9.941 |
| British iron | 4.09 | 1.568 | Italian wood | 13.03 | 11.966 |
| Norwegian wood | 1.35 | 2.483 | French iron | 20.61 | 13.265 |
| Norwegian iron | 9.12 | 3.079 | Russian wood | 7.53 | 13.354 |
| French wood | 11.13 | 8.703 | Dutch wood | 7.53 | 24.505 |
| German iron | 8.81 | 8.903 | | | |

The Relative Safety, Losses, and True Insurance Risk of American Wood Ships as Compared with the Various Groups of Foreign Ships Engaged in the California Grain Trade

In an analysis of the behavior of the fleets at sea and their comparative seaworthiness and safety, Bates prepared an elaborate set of comparative statistics, of which the following table, dealing with the three leading types of ships (American wood and British iron and wood), is a compact digest:

| Type of Ship | Total Number of Ships | Catastrophes and Accidents during the Four-Year Period | | | | | | Casualty Efficiency Considering a "Loss" as 100, "In Peril" 40, "Accidents" 20 |
|------------------------|-----------------------|--|------|----------|------|-----------|------|--|
| | | Lost | | In Peril | | Accidents | | |
| | | No. | % | No. | % | No. | % | |
| American wood | 418 | 2 | 0.48 | 12 | 2.87 | 26 | 6.22 | 97.13 |
| British wood | 198 | 4 | 2.02 | 19 | 9.60 | 14 | 7.77 | 92.72 |
| British iron | 761 | 6 | 0.79 | 40 | 5.26 | 52 | 6.84 | 95.74 |
| Total | 1,377 | 12 | 0.87 | 71 | 5.16 | 92* | 6.68 | 95.73 |

*Accidents to anchors and cables not included.

Taking the British iron ship as the standard, we find that the American wood square-rigger for this four-year period shows in all the recorded catastrophes and accidents a superiority to both British iron and British wood in the relation of the percentage of casualties of various kinds, as follows:

| | Lost | In Peril | Accidents |
|-------------------------|-------|----------|-----------|
| American wood | 60.7 | 54.5 | 90.9 |
| British wood | 255.7 | 182.5 | 113.6 |
| British iron | 100.0 | 100.0 | 100.0 |

Of the three large fleets, the safest sailing was that of American wood. Its total losses were less than half of one per cent (.4784) of the number in the trade. British iron total losses exceeded three-fourths of one per cent (.7884), or 65 per cent greater than for American wood. But worse than iron was British wood; its total losses were over 2 per cent of the fleet employed, or 30 per cent over the iron and 322 per cent over American wood, whose insurance rates were not less but more, primarily, it would seem, on account of the American flag, British prejudice and self-interest. The difference in seaworthiness and safety of the American and British ships may be exhibited as follows:

| Nationality | Total Losses of Ships | Total Ships in Peril but Not Lost |
|--|-----------------------|-----------------------------------|
| United States | 1 out of 212 | 1 out of 30.2 |
| British | 1 out of 88 | 1 out of 16.44 |
| Safety of British ships in relation to American. | 41.5 per cent | 54.4 per cent |

It is also well to note that half of the total losses of British iron "went missing," which means that all aboard were lost. The loss of life during the four wheat years of the survey was all in foreign ships and seven-eighths British.

A four-year table of property losses of fleets of certain nationalities engaged in the Californian-European grain trade (1881-1885) as prepared by Bates, giving the amounts for vessel, cargo, and freight, is stated herewith; also a table showing the comparative peril per ton.

| Nationality | Type | No. of Ships | Property Losses in Dollars | | | | Peril Rate per Ton in Dollars | | | | Lives Lost |
|------------------|------|--------------|----------------------------|---------|---------|-----------|-------------------------------|-------|---------|--------|------------|
| | | | Vessel | Cargo | Freight | Total | Vessel | Cargo | Freight | Total | |
| U.S.A. | Wood | 418 | 157,250 | 237,566 | 47,300 | 442,116 | 0.23 | 0.347 | 0.07 | 0.647 | — |
| British | Iron | 761 | 414,350 | 513,890 | 129,792 | 1,058,032 | 0.401 | 0.497 | 0.126 | 1.025 | 68 |
| British | Wood | 198 | 249,267 | 312,445 | 89,748 | 651,460 | 0.99 | 1.24 | 0.357 | 2.587 | 18 |
| French | Wood | 16 | 41,280 | 65,624 | 21,988 | 128,892 | 4.107 | 6.53 | 2.19 | 12.827 | 15 |
| Italian | Wood | 12 | 20,000 | 35,000 | 12,000 | 67,000 | 1.891 | 3.31 | 1.135 | 6.336 | — |
| British steamers | Iron | 11 | 245,000 | 95,726 | 34,586 | 375,312 | 12.646 | 4.491 | 1.785 | 19.372 | 25 |

The above comparative figures for waste of property at sea, considering ship, cargo, and freight (also lives), exhibit the fortune of the different fleets. Bates wrote:

There is nothing like a test of dollars and cents to cut down conceit, and correct impressions of the values of vessels. A ship is a machine. What she costs to build may be of minor consequence to what it costs to keep her in condition for safe and efficient work through a long life. To judge rightly of type and build, the performance at sea and all the expense from wear and tear must be considered. In the foregoing table, the value of ships

lost and damages to hull or cargo, where not accurately reported, are expertly estimated. Partial losses, so far as published, are taken from underwriters' statements. The values of cargoes and freightages are known with certainty. Wood and iron sail have been taken at fifty dollars per ton. If seaworthiness confers value, American ships appear to be worth the most.

The Relative "Turn-out" of Cargoes, Showing Condition of Grain on Delivery and Losses in Transit of Representative American Wood and British Iron Ships

Lest it be thought that discriminative rates had some justification from the relative "turn-out" of cargoes on discharging, Bates obtained reports from British merchants through U. S. consuls in England on the "turn-out" of cargoes of 100 ships. The following statement shows the reports received on 40 American wood ships, with average cargoes of 53,219 centals, and of 60 British iron ships, with average cargoes of 46,154 centals. The ships used in this comparison were not selected for quality, but were in every sense of the word average ships, concerning which reliable data could be obtained.

| Condition of Cargo | 40 American Wood Ships | | 60 British Iron Ships | |
|------------------------|------------------------|------------|-----------------------|------------|
| | Centals | Percentage | Centals | Percentage |
| Quantity carried | 2,128,760 | 43.46 | 2,769,240 | 56.54 |
| In good condition..... | 2,121,700 | 99.67 | 2,707,486 | 97.98 |
| Damaged | 7,050 | 0.33 | 15,600 | 0.34 |
| Total loss | — | — | 46,154 | 1.66 |

The Result of a Comprehensive Scientific Analysis of the Performances of Carriers in the Atlantic Grain Trade, 1881-1885, and Capt. William W. Bates's Comment Thereon

Capt. William W. Bates, at the conclusion of his exhaustive technical investigation completely covering the operations of all types or classes of ships engaged in the Californian-European grain trade during the four consecutive wheat years 1881-1882 to 1884-1885 inclusive, said that American wood ships of that period (popularly termed "Down Easters"), "when compared in fleets with the best of the foremost nations, are found to excel in size, capacity, value of cargo, cheapness of freight, safe delivery, speed in sailing, efficiency in work, escape from disasters, preservation from loss of both life and property and in reducing to a minimum the perils of the sea." He well asked, "What could we have more—what could we have better?" Nevertheless, British underwriters were slowly but surely driving American wood ships from deep-sea trade because of their arbitrary and unscientific discriminations. During the period of the survey, British iron bottoms did some of the lowest grade and slowest work in the trade; but, on the other hand, British iron clippers made the shortest time and showed the highest efficiency. The British iron fleet contained many vessels of clipper models and spread much canvas, and yet they did not seem to sail in proportion to their sharpness and theoretical possibilities. First, they lacked in initial stability; second, they were loaded too deeply; third, their bottoms were quite often foul. Bates declared that his investigations showed that "all that is gained to carriage in lightness of hull, by building with iron or steel in place of wood, is lost to efficiency by roughness of bottom, even with clipper models. In other words, the modern metal ship [as she was built and sailed in the early eighties] must have a sharper form than the old-fashioned [wood-hull] coppered type."

In the Late Eighties and Early Nineties, Britain Drives the United States, with Its Better Ships Such as the HENRY B. HYDE, from the Californian-European Grain Trade

At the end of the eighties, American wood ships clearly showed their superiority as reliable and fast carriers in the Californian-European grain trade. In the calendar year of 1889, 31 American ships carried grain and flour from San Francisco around the Horn to Europe in 112.86 days (Cork standard for destination), beating the foreign fleet in speed by 18.9 days in average length of passage, or 16.84 per cent in time, and showing an efficiency greater by 9.5 per cent. Freight rates were low and were still falling, and British iron full-rigged three-masted ships and the new and larger iron and steel four-masted shipentines enjoyed the greater part of the Californian-European grain business. The following figures for the wheat year 1889-1890 are of interest:

| Nationality | Sailing Vessels | | Average Rate of Freight Paid the Sailing Vessels | Nationality | Sailing Vessels | | Average Rate of Freight Paid the Sailing Vessels |
|-------------------|-----------------|---------|--|-------------------|-----------------|---------|--|
| | Number | Tonnage | | | Number | Tonnage | |
| British | 167 | 278,885 | £1-15-3 | Italian | 3 | 3,277 | £1-16-8 |
| United States .. | 30 | 58,601 | 1-10-6 | Scandinavian .. | 2 | 2,891 | 1-18-3 |
| German | 11 | 14,551 | 1-14-6 | | | | |

A total of 213 ships, totaling 358,205 tons (as stated), sailed to Europe, but during 1889, 234 ships all told, aggregating 387,091 tons, sailed from San Francisco, grain laden.

During the four wheat shipment years of Bates's survey, American wood ships averaged 125.5 days for their eastward Cape Horn passages from San Francisco to Queenstown "for orders" and British iron ships 130.7 days, with the fastest single American passage 106 days; the best run of the British ships was a fast passage of an iron clipper ship to the southwest coast of Ireland port in 95 days. By 1889 the average length of the passages of American wood ships over this same course was down to 112.8 days, and the spread between the average speed of American and British ships had materially increased in favor of the American vessels.

In 1885 such top-flight Down Easters as the *Henry B. Hyde* and *A. G. Ropes* made their first runs in the Californian-European service, and the designers and builders of Bath, Maine, were prepared to turn out even still better wood ships (and they could have been iron, steel, or composite) as the years rolled by if trade conditions, freight rates, insurance costs, availability of square-rigged able seamen, and possible profits had warranted it. The *Henry B. Hyde*, "the Queen of the Down Easters," was the superior of any wind-propelled ship in the Californian-European grain trade. Of 2,583 tons register, she carried well and sailed fast, making four consecutive westward "uphill" passages from New York to San Francisco in 108 days. Her average for all seven passages eastward from San Francisco to ports in the United Kingdom was 107 days; her best run from San Francisco to Liverpool was made in 96 days, port to port; and her slowest run between the same ports was 114 days. These passages of the *Henry B. Hyde* were not to Cork (Queenstown), the port on the Irish southwest coast, but to the farther port of Liverpool, which meant sailing up St. George's Channel, the Irish Sea (often against head winds), and to pilot and tow up the Mersey. On her fastest passage, the ship was only 95 days 6 hours from San Francisco to pilot off Point Lynas, and this was a materially shorter passage than a 95-day run to Queenstown (or Cork) "for orders." On the return passage of her maiden voyage, the "*Hyde*" carried 82,234 centals of wheat from San Francisco to Liverpool, but the freight rate was only 27 shillings (£1-7-0) per ton, and on her third voyage (1887-1888) the ship found it more profitable to return to New York rather than carry grain to Europe. The same situation developed in 1891-1892, and the following year the owners of the ship preferred to send her in ballast to Chile to load with nitrate for a North Atlantic port. Three voyages later, she returned from San Francisco east via Honolulu, where she loaded sugar for New York. The days of profitable transport and reliable, steady charters for the carrying of California grain to Europe in American wood ships were past.

*The Selfish Discrimination of Foreigners and American Indifference
to the Protection of the U. S. Merchant Marine Drive
the American Flag from the Seas*

The United States excelled all the world in the building of wood ships as long as such vessels were built; moreover, Americans always designed the best sailing ships—both mercantile and naval—and could have constructed them equally well of any available materials if given the encouragement of a definite and sustained demand. (When the Sewalls, of Bath, Maine, decided in 1893 to build steel ships to obtain the benefit of better insurance rates, they, unfortunately, discarded all American experience and tradition and used British designs of ships decidedly inferior in model and class to American Down Easters.) Britain did not have any natural monopoly in the building of iron sail or steam, but it did have a farsighted,

trade-minded government that looked to the ocean for the nation's greatness. With the coming of steam, the United States had become disunited, with the southern and western states in political opposition to the northeastern maritime states, and this deplorable condition led not only to the Civil War but also to the virtual repudiation of the country's merchant marine. Capt. William W. Bates wrote in 1893:

The problem of the American ship is one of *protection* or abandonment of the sea. Our shipbuilders and our navigators have done their duty as mechanics and seamen. They have well pressed the button and our government must do the rest. The only thing lacking is *protection to employment*. Wisdom, justice and patriotism in Congress would restore our fleets to the ocean and fill our shipyards with work, rush our counting-houses with business, crowd our ports with our own ships, and open new careers to our naval architects and engineers in the interest of our people, their prosperity and independence. The question is consistent with our subject; when shall we have the representation and the measures which will prove the wisdom of our government? Will we ever again have the love of country which appreciates a merchant marine of our own; the skill in Washington which can secure its rehabilitation; and the courage which would protect it thereafter from the opposition of its rivals, and the attacks of its enemies? The world will see.

The Spanish-American War found the United States a second-rate maritime power as far as commerce on the Seven Seas and a modern navy were concerned, and it is fortunate that the war was with a decadent power. World War I caught the United States with a small and much better navy but absolutely dependent on foreign powers for the handling of its foreign trade. Even this lesson did not teach the people and politicians of the United States the vital importance of an adequate foreign trade merchant marine for national health—well-being, independence, and security. World War II surely should change the mental attitude of the majority of the voting citizens of the United States in regard to its deep-sea merchant marine—but will it? The record of the United States Congress in regard to American deep-sea shipping since the middle of the nineteenth century is a disgraceful and humiliating one, void not only of vision but also of plain common sense. Will we, as a nation, profit by our distressing and horribly expensive experiences of two World Wars, or will we again become indifferent to our possession of an adequate deep-sea merchant marine (which is essential for national security), drift once more into somnolence, listen to foreign propaganda, and let history repeat itself to our eternal shame?

XXVI.

SHIPS OF THE EAST AND OF EUROPEAN POWERS—THE STIMULATION TO EUROPEAN SHIPPING DUE TO SAIL AND THE COMPASS AND THE RAPID CONSTRUCTION OF VESSELS IN THE OLD AND NEW WORLDS

Ships of the Old World—the Use of Sail and the Compass by Europeans in the Late Fifteenth Century Leads to World Exploration and Exploitation

VENICE became a prominent trading republic in the twelfth century and fought Genoa in the thirteenth and fourteenth centuries for water supremacy in the Levant and the Black Sea, emerging in 1380 as the undisputed mistress of the Mediterranean and Levant trade. In the September 1298 battle in the Adriatic with Genoa, the fighting ships of Venice, we are told, were oar-propelled galleys carrying 250 men each.

China built seagoing ships propelled by sail in very early days, and sizable junks traded with India, which also built and operated sailing craft. These vessels became common on the Indian Ocean and Arabian Sea and were known in the Red Sea and Persian Gulf. When Marco Polo, the Venetian traveler, started his famous journey to the Far East, he first planned to go by sea and actually proceeded to the mouth of the Persian Gulf in 1272 to seek a sailing ship to take him to China. This indicates that the Venetians were aware of the trading done by sizable Chinese-Indian sailing junks at this time and that these junks were not unknown to the Arabs of the Arabian Sea and Persian Gulf. Returning from China, Marco Polo sailed from Amoy in a Chinese vessel and reached Persia via the East Indies, Sumatra, Ceylon, and India. In the Christian world at this time, the ships were galleys propelled by oars, which generally followed the coast line and were steered by the stars on relatively short Mediterranean runs between well-known coasts; but in the East ships propelled by wind, or sails, traded in all kinds of weather on the deep seas over long ocean routes by the aid of the Chinese compass. Seagoing ships were built in China as early as the second century, B.C., and "south-pointing chariots" were used by Emperor Hian-tsung in the first years of the ninth century, A.D. There are traditions of the Chinese use of the compass needle from days preceding the Christian Era and records of the Chinese marine compass in the thirteenth century, but an ancient Arabic manuscript refers to the trading of Chinese sailing ships to the Persian Gulf and Red Sea in the ninth century. It is evident that from very early days the Chinese were acquainted with the property of the magnet to point southward. The Chinese name for the compass is "ting-nan-ching" (or "needle pointing to the south"), and the mariner's compass reached Europe from the Chinese through the Arabs as did many other "inventions" of the early Renaissance.

Whereas some auxiliary sail was used on European vessels during the first thirteen centuries of the Christian Era, oars were the prime means of propulsion, and it has been said by old historians that "ships as large as two thousand tons propelled by as many as eighty oars" were in service in the fourteenth century. European ships built for sailing only,

like Chinese and Indian deep-sea junks, began to appear on the turbulent Atlantic in the fifteenth century about the time that the principle of the mariner's compass (used for ages by oriental navigators) commenced to be known and used, and ships began to put to sea with a measure of confidence and sail out of sight of land. With the substitution of sail for oars, the size of vessels surprisingly, quickly, and greatly reduced, but this was because of the necessity of building stouter, stronger vessels to combat Atlantic seas and weather and the elimination of the great amount of space needed in galleys for rowing benches and oarsmen.

The Venetian oar-propelled galleys fitted with some auxiliary sail represented the highest type of marine construction in Europe as long as trading between the leading countries in Christendom was handled on the Mediterranean, and Venice, favorably located "midway between Europe and Asia," was the center of the carrying trade of the known Christian world. The Arabian Mohammed (570-632) founded the religion and domain of Islam and checked the spread and influence of Christianity to the east and to the south. The Mohammedans took Jerusalem in 637, and the Crusades of the European Christian nations between 1096 and 1270 to recover the "Holy Land" from the Mohammedan "unbelievers" brought Christian Western Europeans in direct physical contact with the Arabs (or Saracens) and their culture. The Mohammedans, as Ottoman Turks, took possession of Constantinople in 1453, and after the Venetian-Turkish War of 1464-1479, the power of Venice commenced to decline. Trading with the East was through hostile lands. When the Portuguese explorer, Bartholomew Diaz, rounded the Cape of Good Hope in 1487, the future of Venice was threatened; but when another adventurous Portuguese navigator, Vasco da Gama, discovered the deep-sea route to India in 1497-1498, Venice was doomed as a great trading power. It is significant, however, that Vasco da Gama, as did Bartholomew Diaz before him, had merely followed the African coast on the rounding of the South African Cape, and when Da Gama reached a settlement on the southeast coast of Africa, he obtained the services of an Indian navigator and pilot to take him across the Indian Ocean to a port on the west coast of the Indian peninsula. The only deep-sea part of Vasco da Gama's historic voyage out of contact with land was directed by an Indian pilot equipped with an Eastern compass—superior to anything the Portuguese possessed—and a knowledge of ocean navigation that first surprised and then amazed the Christian adventurers. They had been brought up to have contempt for the ignorance and backwardness of "infidels," all of whom were branded as barbarians. It was the Mohammedan Arabs that sought to stop the trading of the Christian Portuguese by deep-sea ships direct between Europe and the Indian coast, and the peaceful, more cultured Hindu merchants were humiliated and subjugated while Christian maritime nations fought each other through the centuries for exclusive trading rights and domination in India.

David Hume (1711-1776), the British historian, says that King Henry VII, who died in 1509, spent £14,000 building the *Great Harry*, considered an immense sailing vessel in her day (and said to be the first ship really built for the English Navy); but Hume also says that out of 1,232 vessels belonging to the Kingdom in 1582, only 217 were of 80 or more tons burthen. Naval vessels were much larger than merchantmen in the sixteenth century, for official records show that when King Henry VIII died in 1547, the fleet belonging to the British Crown totaled 12,455 tons and consisted primarily of sailing vessels of from 150 to 700 tons, but was headed by the *Henri Grace à Dieu* (the *Great Harry*), with several galleys or "pynnasses" measuring less than 100 tons. Lindsay says that at Henry VIII's death "the average size of the vessels then belonging to the Navy, including the *Great Harry*, was under two hundred and forty tons each." He also says that in 1572 "the largest merchantman that sailed from the port of London was only 240 tons register." (Edgar S. Maclay, in *A HISTORY OF THE UNITED STATES NAVY*, published in 1901, records the building of the *Great Harry* in 1488 and of the *Henry Grace de Dieu*, a ship of 1,000 tons, in 1512; other old records say that she was launched about 1514.)

The vessels that made famous exploratory cruises in unknown seas in the fifteenth, sixteenth, and seventeenth centuries were very small craft. Christopher Columbus crossed the Atlantic and discovered America in 1492 with a fleet of three Spanish ships, only one of which, the flagship *Santa Maria* of 100 tons, carrying a crew of 52 men, was a decked vessel, and she had high superstructures on each end known as "castles." The other two vessels, *Pinta* of 50 tons and *Niña* of 40 tons, were caravels, carried 18 men each, and had no covered deck. The first ship built in America, the *Virginia*, which made a few passages across the Atlantic in the early seventeenth century, was of only 30 tons, and the *Mayflower*, which landed the Pilgrims at Plymouth in 1620, was a sizable ship for the period and measured 180 tons.

Recorded Speedy Construction of Wood Vessels in the Old World

It is a much disputed question as to whether European shipyards ever built as good wood hulls as those constructed in India and the Far East, and when the life of a wood hull is considered, an Indian teak vessel was superior to any European-built oak ship. But claims are rightly made that Eastern construction methods were of a quality superior to those used in the best of European dockyards, as the Indian and oriental builders, with an abundant quantity of cheap labor, were less conscious of time and the amount of man-power hours used in construction and, therefore, produced a higher quality of practical construction while using superior building materials. Nothing is definitely known of the time taken to build Indian and Far Eastern vessels, but it is said that parts of India excelled "in constructing big vessels at a low cost in relatively quick time" and that these sailing ships "carried and sailed well and had a long life." The Arabs came in contact with Indian west coast shipyards and probably carried much practical information of ships to the Mediterranean ports; for as early as the thirteenth century, it would seem, Europeans credited the Venetians with being "the greatest shipbuilders in the world," which means, of course, in Christendom and the contiguous known lands of the Moslem Turks, Arabs, and Moors in the Mediterranean.

The Venetians were the leading and most progressive shipbuilding power of Europe for centuries prior to the rise to prominence of the adventurous Portuguese and Spanish as deep-sea explorers and traders in the late fifteenth century. In 1268 shipbuilders of Venice contracted with Louis IX, king of France, to construct fifteen vessels for him, and M. Jal has left us a record giving a description of the ships built on this order. The *Roccaforte* was the largest, and she, with a length of keel stated as 70 ft., was 110 ft. long over-all and had a beam of 40 ft. With this great width, she had the amazing recorded depth of 39½ ft., which must have been not the depth amidships as universally measured in more recent centuries but the extreme depth at one of her high ends. This ship had a high bow and stern generally similar, containing living quarters, but she had "two poops, one above the other, constituting a castle or fighting deck." She carried a crew of 110 seamen, and the contract price of 1,400 marks, Lindsay, in *HISTORY OF MERCHANT SHIPPING AND ANCIENT COMMERCE*, places at 933⅓ English pounds. The smallest of the ships built on this French contract cost half as much as the big *Roccaforte* and carried a crew of 50 men. Data as to the rig of these vessels are meager; they were galleys, propelled by tiers of oars, and the contract states that the larger vessels were to have two masts and two square sails; but contemporary commentators tell us that the foremast reaching over the bow answered the purpose of both mast and bowsprit.

A traveler who visited a Venetian yard in 1456 wrote:

As one enters the gate, there is a great street on either hand, with the sea in the middle, and on one side are windows, opening out of the houses of the Arsenalotti, and the same on the other side. And out came a galley, towed by a boat, and from the windows they handed out to them, from one the cordage, from another the bread, from another the arms and from another the ballistae and mortars,

and so, from all sides, everything that was required. When the galley had reached the end of the street, all the men required were on board, together with the complement of oars, and she was equipped from end to end. In this manner, there came out ten galleys, fully armed, between the hours of three and nine.

This refers to the equipping, arming, and manning of Venetian galleys for sea duty and not to the building of the hulls or the actual making of spars, sails, oars, armament, etc.

In 1570, Venice became engaged in a war with the Porte (Ottoman Empire), which lasted about three years, and when peace was made in 1573, Cyprus was yielded to the Turks by Venice. It is recorded that during the urge for building seagoing armed galleys in quantity and rapidly, the Venetians (in 1570) used the assembly line method of ship construction and that "Venetian Arsenalotti built a hundred vessels in a hundred days." We are told that in the early seventies King Henry III of France (the favorite son of Catherine de Medici and a debauched weakling, who, with his mother, organized the dreadful massacre of St. Bartholomew in 1572) visited the city of Venice and "watched a galley's keel and ribs grow into a vessel completely outfitted, armed and launched" while he was enjoying an elaborate banquet of a few hours' duration that was given in his honor. Venice, in its palmy days, is said to have had a population of some 200,000 and was such a strong maritime power that it supported 17,000 seamen and an equal number of men in various shipbuilding trades.

In a recent work, Thomas B. Costain has said:

Authentic records show that the urgent needs of the war with Turkey [1570] drove the Venetians to the construction of ships in a single day and that, moreover, they had conceived the idea of the as-

sembly line, although they did not call it that. They were splendid ships that they built, great wooden biremes with towering superstructures and an imposing spread of sail.

It would seem, therefore, that the Venetians, many centuries ago, not only felt the war-time urge for merchant shipping but also enjoyed the notoriety of building ships in a remarkably short time and made impossible and ridiculous claims of their achievements; for no wood hull could have been assembled, fastened, planked, and launched "in a single day" or between "a sunrise and sunset of a single day"—as has been claimed—to say nothing of putting elaborate bow and stern superstructures in position and securely fastening them and of stepping the masts, rigging the vessel, and bending sails ready for sea service. A bireme was primarily a galley with two banks of oars, one above the other; but in addition to this propelling power, the Venetian vessel in question, said to have been built in a day, carried high projecting superstructures, masts, and some canvas.

From old records, it would seem that at the time of Edward I of England (1272-1307), when Britain had no navy and was virtually unknown as a maritime power, Venice, probably because of its proximity to the East, was the leading Christian shipbuilding center and that the Arsenal at Venice, during a period of stress caused by war, devised and successfully executed rapid ways and means of building wood ships that were superior to anything accomplished elsewhere in Christendom before, during, or since that time. Britain, France, and the Baltic shipbuilding countries apparently never built wood hulls in what was considered as record time; but in the United States, during the urge for tonnage incidental to the California Gold Rush in the mid-nineteenth century, some good wood vessels were constructed rapidly.

Relatively Rapid Shipbuilding in the United States during the Nineteenth Century

Under the stress of military need and during an urge for economic gain, Yankee wood shipbuilders produced some good hulls in apparently record short time, but the total time required by the world's most competent shipwrights to produce a sizable wood hull occupied several weeks rather than a few days. During the California Gold Rush in the early 1850's, the call was for "90-day ships," and claims were made that Donald McKay built the 1,534-ton clipper ship *Stag Hound* "inside of nine weeks." This vessel, when launched on December 7, 1850, was said to be America's "largest and longest" merchantman. It is also said by historians that a Boston firm of shipping merchants ordered two ships that were each "launched 60 days from the signing of the contract" and that within 30 days thereafter they were "laden and bound for San Francisco." Another record of the construction of the *Stag Hound* says that the ship was built rapidly by McKay and "was launched in about 100 days from the laying of the keel"; while still another old report says, "She was ready for launching in less than four months after the contract was signed." (These reports are quite different from the stated building time of "inside of nine weeks" [63 days], not to mention the launching "60 days from the signing of the contract.")

Some extraordinary statements have been made of the rapid construction of American wood vessels, but the following extract from an address delivered by A. R. Baker at Medford, Mass., in 1846 is significant of several great and seemingly incredible claims made: "The shortest space in which a vessel was ever built in the town [Medford] was twenty-six days. Her name was the *Avon*, a ship of four hundred tons [other records say 388 tons; built 1815], which, with two others built here about the same period, served as privateers in the last war with the mother country." The Medford Historical Society owns a model of the privateer brig *Avon*, "built in 1813 by Calvin Turner in 26 days." This vessel, according to her (reputed) lines, measured about 105 ft. long molded at the water line and about 112 ft. over-all, about 27½ ft. beam, and about 19 ft. deep from top of keel to sheer line amidships. She had big deadrise, a slack bilge, sharp body lines, low bow, and but little sheer, or overhang; she was said to have been "built entirely for speed." The inspiration for the beamy, sharp-ended model of the *Avon* was said to have been a French lugger that came to America at the time of the Revolution.

The clipper ship *John Bertram* of 1,080 tons, built by Elwell & Jackson at East Boston for the Glidden & Williams line of Boston-San Francisco packets, was launched December 9, 1850, "61 days after the keel was laid" (which is very different from "60 days from the signing of the contract"). This clipper loaded for San Francisco and sailed from Boston 33 days after the date of her launching, but this was by no means record time. The 1,441-ton extreme clipper *Golden West*, built by Paul Curtis, East Boston, for the same owner, was launched November 16, 1852, and sailed from Boston for California, deep laden, December 12, or 26 days after launching. Another ship built by Paul Curtis at Medford, the medium clipper *Beverly* (676 tons), sailed fully loaded on her maiden voyage from Boston for the Golden Gate on May 10, 1852, only 21 days after her launching. It would seem that none of these Boston Gold Rush rapid loadings and departures after launching comes anywhere near the record of the clipper ship *Sea Witch* of 908 tons, built at New York, which was launched December 8, 1846, and sailed fully loaded for China December 23, or only 15 days later. That this ship really "sailed" and was not merely "cleared" at the customhouse on December 23 is evident from log extracts and contemporary writings.

Many claims for the rapid building of wooden hulls, which were all individual creations and not units of standardized mass production, are believed to be exaggerated, and this refers to constructing clippers in 60 days (or even 90 days from contract to sailing) and

building small wood hulls in an emergency "in 30 days." However, Yankee wood shipbuilders, in their prime, produced ships that led the world in both quality and rapidity of construction; some of these achievements in building sharp-lined individual and nonstandardized ships bordered on the incredible, but no builder in any part of the world at any time could possibly perform that which is fundamentally, technically, and practically impossible.

Wood shipbuilding does not, like iron (or steel) construction, lend itself to "assembly line" methods of production, and at no time in the United States have standardized or mass production methods been used in the construction of either sail- or steam-propelled wood vessels. In the 1850's, the wood vessels built were modeled with but little, if any, parallel middle body; they were shaped throughout, and the "out-and-out" clippers had no two frames alike. These frames were shaped in the yard from molds, or templates, before erection on the stocks, and fairing of the framing into true "sweet curves" was necessary before the outside planking could be secured. It was an exacting and laborious job, and every fine, distinctly individual ship required a lot of expert shipwright handwork on the stocks before she was planked and her hull made ready for launching. Iron shipbuilding, with the frames of the hull consisting of shaped bars heated and bent to the required shape on a prepared floor, facilitated rapid construction, the prime time-consuming element in metal shipbuilding being the riveting of the parts together. Until welding was used in the 1930's as a substitute for riveting, there could have been no very rapid assembly line shipbuilding; for whereas erection might occupy several weeks, the riveting of the parts together would take months. Nevertheless, iron, because of the nature of the material and the methods that had to be applied in its use, tended to facilitate relatively rapid ship construction from early days, and records show that in 1858, when iron shipbuilding was in its infancy in New York, the East River improvised Bell yard launched the iron steamer *Suchil* (140 ft. long and 35 ft. beam) only 43 days after the keel had been laid. This vessel, a side-wheeler, was being built for use at the Isthmus of Tehuantepec, Mexico, on this short water route from New Orleans to California.

The "Assembly Line" of United States Steel Shipbuilders during World War II

During World War II (1939-1945), much publicity was associated with the building of "Liberty ships" in the record time of a number of days, which finally reached a claimed achievement of about a week from the laying of the keel to completion with steam up. Of course, this sensational performance was artificial, for such a vessel could not have been built in a week or a month, but actually required several months from the start to the finish. The stated record time was not for construction but for the mere assembly of the many parts of the vessel built in various sections of the yard and shops and taken by powerful overhead cranes to the building ways and finishing docks, where the several parts—which were substantial units—were placed in position and secured to form the whole. Such stunt performances of building vessels in a number of days were made possible by standardized construction, with steel as the building material and the substitution of welding for riveting in fastening the plates and the sections of the hull together. If the older system of hand or pneumatic power riveting had been used, the record time established for assembling and floating a hull would have been impossible, for riveting is a laborious and time-consuming process; moreover, on the part of labor, it demands skill that is acquired only by years of hard work, whereas modern welding is soon taught to unskilled labor. Although a welded

ship can be a good ship comparable in quality to a riveted ship, the system encouraged "short cuts" during World War II and caused inferiority in design, the shifting of butts, or the staggering of the connections of longitudinal strength members. This basic fault, coupled with inferior workmanship in welding (inevitably associated with the speed urge affecting both training of workers and their output), resulted in the breaking of some completed vessels, even at their docks in port as well as at sea. The pressure put behind building merchant vessels during World War II resulted in amazing records for the time taken for construction, even when the all-permeating artificiality and technical dishonesty of the performance are given due consideration. However, steel lends itself to "universal" and "standardized" construction and permits of the building of a vessel in sections for later assembly, and this is a procedure that, outside of the framing of a parallel middle body, a wood hull, with its numerous strakes of longitudinal planking (which require individual hand fitting, fastening, and caulking), does not sanction.

XXVII.

NAMES OF AMERICAN-BUILT SAILING VESSELS

*Commonly Used Names of Ships Registered at Salem and
Newburyport Dating Back to 1789*

IN THE EARLY days of registering ships of the young republic, commencing in 1789, it was soon apparent that American vessels were very simply named, that the Christian names of women and girls predominated, and that several vessels owned in the same district and registered at the same customhouse, at the same time, were likely to bear the same name. The simple Christian names of males were also common, but much less so and of far less variety than feminine names. Surnames were seldom used, but compound names, using the Christian names of two members of a family or two relatives or friends of the owners, were often used; also such designations as two, three, or four brothers or sisters, with no specific Christian name mentioned. The names of early American vessels were simple, generally short, and were likely to be personal, carrying to sea the baptized name or generally used "pet name" of a member of the owner's family. But little imagination was used in the naming of American fishing or trading vessels in the old days, and when generally popular and not intimate personal names were used, they were likely to be simple and somewhat prosaic or narrow.

An examination of the Salem and Newburyport ship registers from 1789 to the late years of the nineteenth century shows the most generally used names given the ships of these old New England ports and building centers to be as follows:

Women's Christian Names

| Name of Vessel | Salem | | Newburyport | | Name of Vessel | Salem | | Newburyport | |
|-----------------|---------------|--------------------|---------------|--------------------|----------------------|---------------|--------------------|---------------|--------------------|
| | Complete Name | First Part of Name | Complete Name | First Part of Name | | Complete Name | First Part of Name | Complete Name | First Part of Name |
| MARY (MARIA) | 15 | 20 | 56 | 13 | HARRIET (HARRIOT) | 6 | — | 15 | 1 |
| BETSEY | 45 | — | 20 | 1 | ELIZABETH | 7 | 3 | 9 | 6 |
| SALLY | 32 | 5 | 35 | 2 | LYDIA | 8 | 2 | 9 | — |
| POLLY | 26 | 4 | 23 | 5 | FANNY | 7 | — | 8 | — |
| HANNAH | 11 | 1 | 30 | 4 | LUCY | 4 | 4 | 6 | — |
| ELIZA | 20 | 6 | 18 | 1 | SUSAN | 4 | 6 | 5 | 4 |
| NANCY | 15 | 2 | 23 | 1 | CATHERINE | 7 | — | 2 | — |
| ANN (ANNE) | 9 | 5 | 12 | 7 | SARAH | 1 | 3 | 6 | 8 |

Men's Christian Names

| | | | | | | | | | |
|---------|----|----|----|----|-------------------|---|---|----|---|
| JOHN | 15 | 6 | 15 | 15 | GEORGE | 7 | 6 | 7 | 6 |
| WILLIAM | 15 | 16 | 11 | 17 | EDWARD (EDWIN) | 7 | 2 | 11 | 5 |
| HENRY | 8 | 4 | 8 | 2 | JOSEPH | 2 | 2 | 8 | — |

MERCHANT SAIL

Generally Popular Names

| Name | Number | | Name | Number | |
|------------|--------|--------------|------------|--------|--------------|
| | Salem | Newbury-port | | Salem | Newbury-port |
| HOPE | 18 | 19 | FAME | 7 | 7 |
| UNION | 12 | 11 | SUCCESS | 10 | 3 |
| FRIENDSHIP | 12 | 10 | PACKET | 5 | 7 |
| WASHINGTON | 12 | 9 | MERRIMACK | 1 | 10 |
| INDUSTRY | 6 | 16 | NEPTUNE | 10 | 1 |
| ESSEX | 9 | 13 | ENTERPRISE | 7 | 3 |
| DOLPHIN | 11 | 8 | DOVE | 3 | 7 |
| MINERVA | 9 | 9 | HERO | 2 | 8 |

A seafaring man in the early nineteenth century said: "You can't visit a Massachusetts or Down East port without seeing a lot of vessels named *Betsey*, *Sally*, *Polly*, *Nancy*, or *Mary*. Why such a duplication of names that must lead to confusion [as regards the identity of any particular vessel]?" This situation was relieved somewhat by differences in size and rig, a ship *Mary*, a brigantine *Mary*, and a sloop *Mary* being easy of identification; a little fishing sloop or schooner *Sally* or *Nancy* could also be readily distinguished from a much larger and more able general deep-sea trader of the same name, even if the rig was the same. Of the before-mentioned commonly used names of vessels that appeared on the Salem and Newburyport ship registers, 162 were forms of the Christian name *Mary*, 136 of the name *Elizabeth*, 120 of the name *Anne*, and 92 of the name *Sarah*. In some cases, diminutive forms of the name were more freely used than the formal designation; for instance, there were many more *Betseys* and *Elizas* than *Elizabeths*, more *Sallys* than *Sarahs*, and more *Nancys* than *Anns*. Of the masculine names, *William* (59) and *John* (51) were the most freely used in these two Massachusetts shipping centers; whereas there was little to choose in popularity between *George* (26), *Edward* or *Edwin* (25), and *Henry* (22).

Of the general names given vessels registered at Salem and Newburyport, *Hope* was popular, but at times *Hope* happened to be the Christian name of a member of the ship-owner's family. *Essex* and *Merrimack* were named after geographical locations, *Washington* after "the father of our country," and the name *Packet* was used to announce the intended function of the vessel in running regularly between certain ports.

The Early Boston Jewel Line Packet Ships

The first American company to name its ships on a definite plan was the Boston and Liverpool Packet Company, organized in 1821 to operate a sailing packet service between Boston and Liverpool. The four square-rigged ships of this line were: *Amethyst*, *Topaz*, *Sapphire*, and *Emerald*. The service became popularly known as the "Jewel Line," but the enterprise soon failed. The company did not succeed in obtaining a charter from the Massachusetts Legislature, even though it ran the vessels in the transatlantic trade for some time. The *Emerald* was a speedy record-making packet, but the history of the *Topaz* was a tragic one. On her way from Calcutta to Boston in 1830, in charge of Captain Brewster, she was destroyed by pirates in the vicinity of St. Helena and everyone on board murdered.

The Naming of American Clipper Ships in Mid-nineteenth Century

An examination of the names of 447 fast sailing ships and clippers famous in the fifties suggests that they may be broadly divided under the following headings:

| | Number of Ships | Percentage of Total | | Number of Ships | Percentage of Total |
|---------------------------------------|-----------------|---------------------|---|-----------------|---------------------|
| Euphonious or pleasing names.... | 83 | 18.6 | Worthy qualities or characteristics | 26 | 5.8 |
| Personal names | 57 | 12.8 | Astronomical | 22 | 5.0 |
| Fishes, birds, animals, and insects.. | 45 | 10.1 | Historical celebrities | 20 | 4.5 |
| Mythical, classical, and imaginative | 40 | 8.9 | Sports | 19 | 4.2 |
| Connected with the sea or ocean... | 36 | 8.1 | Races of men, including oriental | 18 | 4.0 |
| Geographical | 30 | 6.7 | Golden | 12 | 2.7 |
| Connected with the sky and wind.. | 29 | 6.5 | Soldiers and sailors..... | 10 | 2.3 |

The discovery of gold in California and later in Australia undoubtedly influenced the use of the designation "Golden." Ships were named *Golden Age*, *Golden City*, *Golden Dream*, *Golden Eagle*, *Golden Fleece*, *Golden Gate*, *Golden Horn*, *Golden Light*, *Golden Racer*, *Golden Rocket*, *Golden Rule*, *Golden State*, and *Golden West*. Speed was represented by the use of the word "Flying" in several clippers of the period: *Flying Arrow* (originally *Flying Yankee*), *Flying Childers*, *Flying Cloud*, *Flying Dragon*, *Flying Dutchman*, *Flying Eagle*, *Flying Fish*, *Flying Mist*, and *Flying Scud* (also a *Flyaway* and a *High-flyer*). The words "Wing," "Wings," and "Winged" were popular and appeared in the names of some fast sailers: *Eagle Wing*, *White Wing*, *Wings of the Morning*, *Wings of the Wind*, *Winged Arrow*, and *Winged Racer* (also the *Fleetwing*).

Many clippers carried the name of "Eagle," America's national bird: *Eagle*, *Eagle Wing*, *Bald Eagle*, *Flying Eagle*, *Golden Eagle*, *Grey Eagle*, *National Eagle*, and *Northern Eagle*.

The word "Star" appears in several names: *Guiding Star*, *Morning Star*, *North Star*, *Shooting Star*, *Silver Star*, *White Star*, *Star of Empire*, *Star of Hope*, *Star of Peace*, *Star of the Union*, *Western Star*, *Starling*, and *Star*. There was also a *Starr King*, but this name had no connection with astronomy, this clipper being named after the Rev. Thomas Starr King, a popular preacher, writer, and lecturer of Boston and later of San Francisco. Names associated with the heavenly bodies were *Comet*, *Constellation*, *Fiery Cross*, *Jupiter*, *Mercury*, *Meteor*, *Sirius*, and *Southern Cross*. There was a *Celestial*; also an *Eclipse* and a *Rising Sun*, *Dawn*, *Daylight*, *Noonday*, *Twilight*, and *Midnight*. The list of names includes *Atmosphere*, *Rainbow*, and *Lightning*.

It is rather surprising that many clippers were named after fierce windstorms, which were dreaded at sea; therefore, among the best-known fast ships following the mid-century were *Cyclone*, *Hurricane*, *Monsoon*, *Pampero*, *Simoon*, *Sirocco*, *Tornado*, *Typhoon*, and *Whirlwind*. There were also *Line Gale*, *Storm*, *Storm King*, and *Nor'wester* and less violent names such as *Leading Wind*, *Fair Wind*, *Trade Wind*, *North Wind*, *West Wind*, *Whistling Wind*, and *Windward*; also a *Zephyr*.

Impressive names of the clipper ship period were: *Belle of the Sea*, *Champion of the Seas*, *Empress of the Seas*, *Maid of the Sea*, *Monarch of the Seas*, *Pride of the Sea*, *Queen of the Seas*, *Romance of the Seas*, and *Sovereign of the Seas*; *Gem of the Ocean*, *Pride of the Ocean*, and *Spark of the Ocean*. There were also *Ocean Belle*, *Ocean Chief*, *Ocean Express*, *Ocean Herald*, *Ocean Pearl*, *Ocean Rover*, *Ocean Spray*, *Ocean Telegraph*, the bark *Ocean Wave*, and ships named *Ocean Home*, *Ocean King*, and *Ocean Monarch*. In addition to the *Sea Witch*, *Sea Serpent*, *Sea Queen*, *Sea Lark*, *Sea Wave*, and *Seaman*, there were two *Sea Nymphs* (one of Baltimore and one of New Bedford), the *Seaman's Bride*, the *Sparkling*

Sea, and a ship named *Sea*. We find ships, carrying on the thought of the deep, their native element, appropriately named *Crest of the Wave*, *Sparkling Wave*, *Wild Wave*, and *Bounding Billow*.

Some ships carried the designation "Black" such as: *Black Hawk*, *Black Prince*, *Black Sea*, *Black Squall*, and *Black Warrior*; also some had "White" in their names such as: *White Falcon*, *White Squall*, *White Swallow*, *White Star*, and *White Wing*. There were the *Flying Arrow* and *Winged Arrow*; *Neptune's Car* and *Neptune's Favorite*; *Grey Eagle*, *Grey Feather*, and *Grey Hound*; *Electric*, *Electric Spark*, and *Telegraph*. The word "Witch" appeared in the famous *Sea Witch* and also in *Water Witch*, *Witch of the Wave*, and *Witchcraft*. There was the *Carrier Dove*; also the *Carrier Pigeon* and *Wild Pigeon*. The word "Morning" appeared in the names of the clippers *Morning Star*, *Morning Glory*, and the two *Morning Lights* (one hailing from Boston and one from Philadelphia). There were the *Dashing Wave*, *Mountain Wave*, and *Crest of the Wave*.

Names commencing with "Wild" were: *Wild Duck*, *Wildfire*, *Wild Gazelle*, *Wild Hunter*, *Wild Pigeon*, *Wild Ranger*, *Wild Rover*, and *Wild Wave*. There was the *Racer*; also the *Race Horse*, *Race Hound*, and *Sweepstakes*. In addition to the *Queen of the Seas*, there were *Queen of the East*, *Queen of the Pacific*, *Queen of Clippers*, *Sea Queen*, and *Forest Queen*; while the American clippers *Morning Light* and *Wizard* were renamed *Queen of the South* and *Queen of the Colonies*, respectively, when they went under the British flag. "North" and "Northern" were used in the names of the clippers *Northfleet*, *North Wind*, *North Star*, *North Point*, *North America*, *Northern Light*, *Northern Eagle*, *Northern Empire*, *Northern Crown*, and *Nor'wester*. There were also the *West Wind*, *Western Star*, *Western Empire*, *Western Continent*, and the fast clipper *Westward Ho* (also a ship "Forward Ho!"). The word "Red" appeared in the names of the *Red Jacket*, *Red Gauntlet*, *Red Rover*, and *Redman*; "Pride" contributed to the naming of the *Pride of the Sea*, *Pride of the Ocean*, and *Pride of America*.

Names of Transatlantic Sailing Packets

The names of 196 transatlantic square-rigged sailing packets in the New York service during the years 1818-1858 may be designated under the following headings:

| | Number of Ships | Percentage of Total | | Number of Ships | Percentage of Total |
|-----------------------------|--------------------|------------------------|--------------------------------|--------------------|------------------------|
| Geographical | 75 | 38.3 | National | 11 | 5.6 |
| Personal names | 32 | 16.3 | Classical | 7 | 3.6 |
| Names of celebrities..... | 30 | 15.3 | Celestial and astronomical.... | 5 | 2.6 |
| Euphonious or pleasing..... | 16 | 8.2 | Biblical | 4 | 2.0 |
| Historical | 12 | 6.1 | Moral qualities | 4 | 2.0 |

Donald McKay built two packet ships at Newburyport that were named after owners. The first vessel constructed by him in Boston in 1845 was a Western Ocean packet, which was named *Washington Irving* by the owner, Enoch Train. McKay built a trading ship in 1850 named after the owner and the same year constructed a transatlantic packet for the Swallow-tail Line, the *Cornelius Grinnell*, named for a member of the firm of Grinnell, Minturn & Company, the New York owner.

The Names of Ships Built by Donald McKay, East Boston

The nomenclature of the Donald McKay-built ships, which covers the period of the building of transatlantic packets, China tea clippers, Cape Horners, and Australian clippers, is naturally of interest. In 1854, McKay built the clipper *James Baines*, named after the owner and for a brief period a good patron of McKay, and the same year constructed another clipper, the *Blanche Moore*, named after a member of the family of her owner, Charles Moore & Company, of Liverpool, England. In 1855, McKay named after himself a clipper of 2,594 tons, built to the order of James Baines & Company for the Britain-Australia trade, with his friend Baines's approval—and as a complimentary good-by gesture. Generally, however, Donald McKay had very appealing names for his ships, and the good taste used in naming some of them is attributed to his wife. Some of the names of the McKay vessels were:

| | | |
|------------------------------|------------------------|----------------------|
| <i>Sovereign of the Seas</i> | <i>Star of Empire</i> | <i>Flying Fish</i> |
| <i>Empress of the Seas</i> | <i>Chariot of Fame</i> | <i>Stag Hound</i> |
| <i>Romance of the Seas</i> | <i>Lightning</i> | <i>Reindeer</i> |
| <i>Champion of the Seas</i> | <i>Westward Ho</i> | <i>Ocean Monarch</i> |
| <i>Glory of the Seas</i> | <i>Flying Cloud</i> | <i>Sultana</i> |

One splendid clipper of 1,817 tons, built in 1851, was named *Staffordshire*. This was geographic, but was really in honor of good customers of the Enoch Train Company who ran the Stafford English potteries. McKay also built several vessels with patriotic names, such as *North America*, built in 1851, and *Great Republic*, built in 1853, and to this category can be added *New World*, *Plymouth Rock*, and *Bald Eagle*. Carrying through the idea of Anglo-American harmony, one of these vessels was named *Anglo-American* and another *Anglo-Saxon*. (Ships built by other American builders also named in the patriotic vein in the 1850's were *Young America*, *National Eagle*, *Live Yankee*, *Union*, *Western Continent*, and *Spirit of the Times*.)

When the *Flying Cloud* of 1,782 tons, built at Donald McKay's East Boston yard for his good friend and financial backer Enoch Train, was sold to Grinnell, Minturn & Company, New York, in April 1851 by the Boston shipowner at a good profit to himself before she sailed on her maiden passage, thoughts entered McKay's head that led him to decide to build ships "on spec." McKay figured that (1) the boom in shipbuilding was really just starting, that big fast ships were needed and would be for many long years, that freights would remain high and business would keep increasing to California and Australia, China, India, etc.; (2) he would gain all the profits on ships that he built and sold to shipowners; and (3) building for himself, he would design and construct ships to suit himself and would not be restricted in any way or bossed by any owner. McKay, therefore, laid down a big 2,420-ton extreme clipper to be bigger and supposedly faster than any ship afloat. He advertised her well, but his statements, made with pride, about his big new ship operated to discourage shipowners from showing any interest in her. Being somewhat discouraged at the lack of interest in his big ship "by the New York crowd" and sensing "the timidity of Boston shipowners in owning and operating such a large ship," the canny McKay baited his trap to influence Enoch Train to buy the ship before she was launched in June 1852. It was announced in the Boston press that McKay's wonderful new big clipper, which would soon prove herself to be "the fastest ship in the world" and "a great money-maker," was to be named *Enoch Train* after the prominent Boston shipowner, who had ordered the *Flying Cloud* to be built and, therefore, had been the original owner of "the Cape Horn Greyhound." Enoch Train did not like the publicity nor the motive behind it. It was necessary for him to tell McKay that the new ship did not appeal to him as an investment, for she was too big for the trade and before long would probably prove unprofitable as well as difficult to handle. Train was willing to assist McKay as far as credit was concerned, but he would

neither buy nor become financially interested in the new big ship. The result was that the vessel was never known as the *Enoch Train*, but was christened, when launched, the *Sovereign of the Seas*, this name being selected by McKay as an impressive general one, suggestive of quality, superiority, and dominance, and one that would prove appealing, appear descriptive, and assist in the sale of the ship. The *Sovereign of the Seas* was undoubtedly a well-built and splendid, fast ship, but all American shipowners "went thumbs down on her." Even when she was sent to England to sell and made a fine round voyage under charter from Liverpool to Australia and return, the British (who were later to have McKay build for them ships fully as big as or bigger than the "*Sovereign*") refused to betray any interest in the purchase of the vessel, and McKay, who was in need of ready cash more than a ship, sold her to the Germans at a material cut in price.

In 1853, Donald McKay built three medium clippers, all named after men, and the five vessels that he built during the years 1858 to 1860 inclusive (except the *Alhambra*) carried names of men, as did also his two wooden screw steamboats built in 1866. However, his last real work as a builder of sailing vessels was the construction of the second *Sovereign of the Seas* and the building of the *Glory of the Seas*, whose names were reminders of his palmy, romantic, and more successful days. Indeed, in the naming of the McKay ships, one can note an index of the builder's prosperity and state of mind. Commercialism was evident at the start and through a long period prior to the end. McKay went through many misfortunes, suffered heavy losses, and became insolvent. The Civil War put a stop to his building activities, and from this enforced cessation from his favorite work—for which he had a peculiar genius—he never recovered. McKay and his wife, who assisted him in the naming of most of his vessels, did much to establish appealing and romantic beauty in the nomenclature of Yankee ships sailing the Seven Seas.

George Francis Train, formerly associated with Enoch Train and Donald McKay, was engaged in business as a shipping and commission merchant at Melbourne in the autumn of 1854. As previously mentioned, Train wrote to HUNT'S MERCHANTS MAGAZINE on October 28 following the arrival of the full-modeled "clipper" ship *Wings of the Morning* at Melbourne, 102 days out from New York: "The *Wings of the Morning* came in day before yesterday from New York, but the Utter-Most-Parts-of-the-Sea has not been heard from. Snail, Tortoise or Drone I would suggest for the next clipper, just for a change. I am tired of these always-a-little-faster names." The *Wings of the Morning* of 915 tons, built at Waldoboro, Maine, was not constructed as a fast clipper, but she did some good sailing when she got a chance, making a run from San Francisco to the Pacific equator in 15 days in early 1856, and later that year beat the fast clipper ship *Red Rover* of 1,021 tons by nineteen days on a run from Callao to Havre. George F. Train probably thought his remarks about the names of ships most humorous. He had urged that McKay's *Sovereign of the Seas* be named *Enoch Train* and, in the mid-fifties, was suffering from a queer combination of egoism and peeve. The maritime world lost a measure of beauty, however, when ships began to carry unimaginative and prosaic names, such as, *John Smith*, *Henry Jones*, or *George Train* rather than *Herald of the Morning*, *Witch of the Wave*, and *Sovereign of the Seas*.

The Naming of Down Easters and American Post-Clipper Ships

In the naming of the Down Easters, the romantic outlook of the gold-seeking Argonauts (the forty-niners), with their fine-lined and speedy yacht-like clippers, gave way more and more—as the years advanced, as competition grew keener, and as net earnings dropped—to

the more individualistic outlook of the shrewd New England businessman. The American ship is popularly designated as "she," but during a commercial era the names of men were freely given to ships that in general parlance are deemed feminine. In the list of 242 Down East square-riggers built for around-the-Horn and foreign trade between the fifties and the early twentieth century, the nomenclature can be put generally in the following categories:

| | Number of Ships | Percentage of Total | | Number of Ships | Percentage of Total |
|---|--------------------|------------------------|------------------------|--------------------|------------------------|
| Names of men..... | 96 | 39.7 | Geographic names | 27 | 11.1 |
| Romantic names (many geographic, Indian, patriotic, and classical, but apparently selected for eu- phonic or emotional appeal).... | 89 | 36.8 | Names of women..... | 17 | 7.0 |
| | | | Names of saints..... | 13 | 5.4 |

Although the Down East ships were generally managed by brokers in New York or Boston or by firms such as those of the Sewalls and Houghtons, the shares (or fractional parts) were spread mostly among their builders, captains, sailmakers, ship chandlers, and those who contributed in part to the building and equipment of the vessels. Old retired skippers who had money "salted away" were often looking for "a good thing"; the families and estates of ship people sought investment for their funds, and gradually financial interests in the big coast cities invested in ship shares. During a period dating from colonial days to the last quarter of the nineteenth century, many a fine ship was built in New England as a result of discussions, following complimentary remarks about a certain captain, at some ship chandlery or builder's loft (where men interested in shipping, in old village-store fashion, were accustomed to collect and yarn). A casual proposition, such as, "Let's get together and build a ship for him," would set the ball in motion from which all the prime features were decided upon and the ship was pictured and dimensioned, then financed, launched, and sent forth with the favored captain to battle for wealth on the Seven Seas. At these gatherings of men interested in ships, the lines, dimensions, spars, sail and rigging plan were not only discussed in detail from every practical point of view but also debated with vehemence by "old sea dogs" before the plans could be finally decided upon. The owners of record of a Down East sailing vessel were seldom owners of more than a very moderate fraction of the money invested in the vessel; but, being responsible for the sale of sufficient fractions to their investing associates and friends, the owners of record held control and had charge of operating the ship, which quite often was one of a fleet. As the days of the sailing ship grew nearer to the end, non-adventurous owners, like the Sewalls, sold larger and larger parts of a new ship to their "friends" and associates. They wanted the job and the profits of builders and the work, with recompense, of managing the vessel when afloat; but they did not care to risk much of their own money in any one vessel or by big borrowings affect detrimentally their credit.

As the era of building and operating advanced, parts (or fractions) of American sailing vessels—both square-riggers and fore-and-afters—were freely offered, bought, sold, and quoted, and this at times through brokers very much like capital stocks on the curb or "over the counter." A businessman or estate would subscribe to, or otherwise acquire, an eighth, sixteenth, thirty-second, or sixty-fourth of a vessel to be built, building, or in service. These fractions were traded in, and the market price fluctuated and was determined by earnings just like the capital stock of an industrial corporation. Gradually, through the years, the promise of a builder to name a vessel after a large share (or fraction) owner was used as bait to influence men, families, and estates to invest their money in sailing ships. As a result, the names of builders, operators, brokers, prominent ship men, and also of persons (or members of families of means) but little known beyond the confines of some small home-town were advertised all over the world, and this through the name boards and stern lettering, shipping records, and marine news of an interest-arresting square-rigger

or of a businesslike coasting schooner. The practice of naming American sailing ships after men connected with the financing, construction, and operations of the vessels or their families became more and more popular, or rather general, as the nineteenth century advanced and the twentieth century dawned. The plan, which robbed American ships of their pleasing romantic names, has brought forth one slight compensating advantage inasmuch as the personal type of ship nomenclature has given to posterity a historical list of most of the men connected with American shipping during a period of some quarter-century, whether builders or brokers, captains, or substantial shareholders.

The Sewalls, of Bath, Maine, made two attempts to name their vessels appealingly and in harmony with some general plan. From 1873 to 1876, they built four ships of about 1,500 tons for the California grain trade and gave them names suggestive of their cargoes and agriculture. These four fine topgallant-yard ships were named *Granger*, *Harvester*, *Reaper*, and *Thrasher*; but other builders at the same time built the *Sower* and *Gatherer*, which caused some confusion in the identity of the Sewall grain ships. Unfortunately, one of these ships, "the Bloody *Gatherer*," built by Albert Hathorn, of Bath, became a notorious "Hell ship" or "blood boat." The second attempt of the Sewalls to bring beauty to their ship nomenclature was their selection of appealing old Indian names of rivers for their wooden "Big Four": *Rappahannock*, *Shenandoah*, *Susquehanna*, and *Roanoke*. Also in 1874, the Sewalls built the *Occidental* and *Oriental*, followed in 1875 by the *Continental*. The first Sewall steel square-rigger was appropriately named *Dirigo*, meaning "I lead," which is the motto on the coat of arms of the state of Maine.

The naming of ships after men—or subscribers to shares—was followed by the Sewalls exclusively from 1882 to 1885 with the *W. F. Babcock* (2,130 tons), *Henry Villard* (1,553 tons), and *Willie Rosenfeld* (2,455 tons). The Rosenfelds were owners of record of five Down East square-riggers built between 1872 and 1881. The *Willie Rosenfeld*, named after the young son of John Rosenfeld, the San Francisco shipping merchant, and built by the Sewalls in 1885, was controlled and operated by the builders, but the Rosenfelds had a big financial interest in her. The last steel square-riggers built by the Sewalls for their own account as far as operating was concerned, but to which their "friends" and associates subscribed an overwhelming percentage of the capital, were named *Erskine M. Phelps* and *William P. Frye* after a substantial shareholder and a political economic ally, respectively; while the *Arthur Sewall* and *Edward Sewall*, it would seem, were named to perpetuate these names in marine records and follow the practice established by other builders and owners. (For one period, the company was known as E. & A. Sewall before it became Arthur Sewall & Company.) The steel ships built by the Sewalls for the Standard Oil Company (1900-1902) were pleasingly named with words commencing with "A": *Astral*, *Acme*, and *Atlas*. Later, when these vessels were acquired by the Alaska salmon packers, they were renamed *Star of Zealand*, *Star of Poland*, and *Star of Lapland*, respectively.

The ships built at Bath, Maine, by the Houghtons were consistently and without exception during the entire period from 1869 to 1891 named for some country or state ending in "ia," just as the British Cunard Line gave its transatlantic liners names ending in "ia" and the White Star Line gave its vessels names ending in "ic." Some of the Houghton-built vessels were: *Arcadia*, *Prussia*, *Austria*, *Scotia*, *Persia*, *Virginia*, *Samaria*, *Columbia*, *Bohemia*, *Armenia*, *Arabia*, *Parthia*, and *Servia*.

The Chapman & Flint ships named "Saint," contrary to general belief, did not necessarily refer to a calendar saint. The term was often used in honor of a relative or friend of the owner; for instance, the *St. Lucie* was so called after the wife of J. W. Elwell, whose firm acted as New York agent for Chapman & Flint for many years. There was a host of ships sailing the Seven Seas that were "Saints," and at one time the designation was believed by superstitious sailors to bring good luck. Among such ships were the *St. Andrew*, *St. Andresse*, *St. Aubin*, *St. Charles*, *St. George*, *St. Helena*, *St. John Smith*, *St. Joseph*, *St. Mark*, *St. Mary*, *St. Patrick*, etc., and the number of vessels that had *Saint*, *San*, *Santa* (or the abbreviation

"St.") for the first part of their names was legion, particularly for ships owned by Latin and Catholic countries. Chapman & Flint built a number of "Saints": *St. Lucie*, *St. Nicholas*, *St. John*, *St. Paul*, *Santa Clara*, *St. Stephen*, *St. David*, *St. Francis*, *St. James*, *St. Katherine*, etc. More and more as the years advanced, Chapman and Flint named their ships after men—themselves and their associates. There were the *I. F. Chapman* and *Wallace B. Flint*; the *John McDonald*, named after the firm's designer and builder; the *S. P. Hitchcock*, named after Chapman's brother-in-law, who, after the partnership was dissolved, became his builder; and the *A. G. Ropes*, named after a partner of Chapman after Chapman and Flint pulled apart and each ran a company of shipowners and operators of his own. (When I. F. Chapman died in 1894, each of these companies owned eleven ships.)

The firm members of Goss, Sawyer & Packard, the Bath shipbuilders, all named ships after themselves when they subscribed to an interest in the vessels built by them. The *Guy C. Goss* (1,572 tons) was built in 1879 and the *Benjamin F. Packard* (2,130 tons) and *E. F. Sawyer* (1,993 tons) in 1883. As early as 1867, the Minotts, of Phippsburg (Bath), named a 1,093-ton ship the *Alice M. Minott*; but their last ship—the last wooden square-rigged vessel built in the United States—was named the *Aryan*, with some measure of appropriateness, and she was "the last of her race."

Of eighteen square-riggers built by the Sewalls, of Bath, during 1868-1877, nearly all had pleasing, non-personal names; but from 1878 to 1892, six were so named out of the thirteen vessels built—all this construction being of wood. Of other Bath wood builders, Goss, Sawyer & Packard, with predecessors and successors, built fifty-four square-riggers during 1868-1892, and thirty were named after people. Chapman & Flint, with associates, built twenty-four square-riggers during 1868-1891, and eleven bore the names of individuals. William Rogers, during the years 1868-1889, built twenty-one square-rigged deep-sea vessels, and nine of them were named for people. The Minotts (Phippsburg), during 1867-1893, had two of their nine ships and barks named after individuals, and of a group of miscellaneous important square-riggers built at Bath, Maine, at various other yards during the years 1871-1884, fourteen out of twenty-nine square-riggers carried the names of individuals.

The Influence of Superstition in Naming and Operating Ships

From the earliest days, a great deal of superstition was connected with the building, naming, and operation of ships, and seafaring men generally believed in signs and luck and were a very irrational and superstitious folk. Many of the leading shipowners "had the stars read" when seeking a name that would bring a ship good luck, and some of the leading skippers would not commence a voyage except on days deemed favorable by horoscopy. No ship would be launched, christened, or sailed on a Friday, and "Friday the thirteenth" is generally considered an unlucky day even in these modern times. We read from an old discussion on the nomenclature of sailing ships: "Some seafolk believe that names beginning with 'A' are unlucky. It's all right for a man to be called Aaron or Alexander, but if you're a sailor and your wife was christened Annie, call her Nancy and take off the bad luck; the same with ships' names—nothing beginning with 'A' should be used."

For many years, seamen shunned ships named after men; for ships were considered feminine, and masculine names were deemed improper and, therefore, unlucky. It was only after ships were named after successful admirals, explorers, kings, and famous historical characters of world-wide or national renown that sailors in general could be influenced to ship

voluntarily on vessels named after prominent men, and for years seamen differentiated between ships named in memory of dead celebrities and living men such as statesmen, politicians, and shipowners.

For centuries it had been considered unlucky to change the name of a ship unless there was a change of ownership, when it might be deemed permissible, or unless, coupled with a change of flag and foreign registry, a change of name might become obligatory. Until the Alaska Packers Association, of San Francisco, adopted the general practice of buying old ships and making "Stars" of them, there were very few cases on record where an American vessel's name was changed after launching if she continued to operate under the American flag. It is well known that at times a great many owners would have liked to rename their vessels. There was one ship, however, the name of which Down Easters were simply determined to change. This was the *Abner I. Benyon*, built by Sam Watts in 1874 and named after a New England financier and investor who overreached himself as a money magnate and got into difficulties. It is said that he left many members of the Thomaston, Maine, shipping fraternity "with their pockets lightened as he decamped across the Canadian border in order to escape the clutches of the law." After this scandal, the builder, Watts, who seemingly had "the say" in the matter, affirmed that they could no longer keep the name of a dishonest man on an honest ship's stern, so he renamed her the *Alfred Watts* after a member of his own family. Old salts shook their heads and freely expressed their belief in a superstition of antiquity; later they were all warranted in saying, "I told you so." The newly named *Alfred Watts* was loaded with case oil, and a new master (Captain Johnson) was given the command. She sailed on her first voyage from the Delaware after being rechristened, only to be capsized by a southern hurricane off the Bahamas, in which catastrophe the captain and his wife and the entire crew, excepting the second mate and eight men, were lost.

The Alaskan Salmon Packers' "STAR" Fleet of Metal Square-riggers

The Alaska Packers Association was the last American company to operate square-riggers and ranked with Laeisz, of Hamburg (Chilean nitrate trade), and Erikson, of Finland (Australian wheat trade), in keeping square-rigged sail in service for long years after it had been driven by steam from the trade routes of the Seven Seas. At the end of the nineteenth century, the Alaska Packers' fleet consisted entirely of old wood Down Easters such as the *George Skolfield* (1,313 tons; built in 1870), the pioneer ship of the fleet, *Bohemia*, *Centennial*, *Indiana*, *Llewellyn J. Morse*, *Santa Clara*, *Sterling*, and *Tacoma*, augmented by many smaller vessels. The first British-built iron vessels to be acquired by the Alaska Packers were the *Coalinga* (1,001 tons), *Euterpe* (1,318 tons), *Himalaya* (1,027 tons), and *Star of Russia* (1,892 tons), and following the purchase of the latter sizable iron square-rigger (which had been built in 1874), the Alaska Packers Association decided to name every metal ship of its rapidly growing fleet a "Star." The names of the wood ships of the fleet would remain unchanged, but no more wood vessels would be acquired, as "good strong old British iron ships can be bought so cheap, and they are well adapted for our service and carry lower insurance rates." From the time (toward the end of the first decade of the twentieth century) that the salmon packers reached this decision to the abandonment of sail for steam in 1929, the ships of the Alaska Packers Association (a combination of several salmon packing companies of San Francisco and Puget Sound) were quickly identified by the designation "Star," as no other American ships were so named.

By 1928 the Alaska Packers' fleet of square-riggers numbered fourteen, but only five of these ships were sent north that year, the balance of the company's business being handled by steam, as it was becoming impossible to find competent men (both officers and sailors) to operate square-rigged sail. The packers' sailing fleet that went to Alaska in 1928 consisted of the *Star of Holland* of 2,131 tons, built in 1885; *Star of Alaska* of 1,716 tons, built in 1886; *Star of Falkland* of 2,121 tons, built in 1892; *Star of England* of 1,943 tons, built in 1893 (all of these ships had been constructed in Britain and were from thirty-five to forty-three years old); and the *Star of Zealand* of 3,262 tons, built for the Standard Oil Company by the Sewalls, of Bath, Maine, in 1900. In the latter part of the thirties, the following "Stars" were still on the register: *Star of Finland* (ex-*Kaiulani*) and *Star of India* (ex-*Euterpe*). The *Star of Alaska* (ex-*Balclutha*) had been renamed *Pacific Queen* in 1932, the *Star of Greenland* (ex-*Hawaiian Isles*) had become the *Abraham Rydberg*, and when the Japanese bought the three big Sewall-built steel shipentines from the Alaska Packers Association in 1935-1936 and sailed them across the Pacific, they became *Star of Lapland Maru* (ex-*Atlas*), *Star of Shetland Maru* (ex-*Edward Sewall*), and *Star of Zealand Maru* (ex-*Astral*).

The following is a list of vessels that became part of the Alaska Packers Association's large fleet of iron (or steel) square-riggers. All these sailing ships built prior to 1898 (fourteen of them) were of British construction and had first sailed under the British flag. The last five vessels of this fleet, built during the years 1899-1902, were all constructed at Bath, Maine, and had been operated under the Stars and Stripes.

| Name or Names of Vessel | | | | |
|---------------------------------------|---------------------------------|------------|---------|--|
| Under Alaska Packers Association Flag | Under British or U.S.A. Flag | Year Built | Tonnage | Remarks |
| STAR OF INDIA | EUTERPE | 1863 | 1,318 | Sold to Zoological Society of San Diego, Calif. |
| STAR OF PERU | HIMALAYA | 1863 | 1,027 | Sold to Noumea as coal hulk. |
| STAR OF CHILE | LA ESCOCESA (COALINGA) | 1868 | 1,001 | Converted to barge in 1928. |
| STAR OF BENGAL | STAR OF BENGAL | 1874 | 1,877 | Wrecked, Sept. 1908. |
| STAR OF RUSSIA | STAR OF RUSSIA | 1874 | 1,892 | The name ship of the Alaska Packers' fleet; sold to Noumea. |
| STAR OF FRANCE | STAR OF FRANCE | 1877 | 1,644 | Bought by the Alaska Packers in 1907. |
| STAR OF ITALY | STAR OF ITALY | 1877 | 1,497 | Bought by the Alaska Packers in 1907. |
| STAR OF HOLLAND | ZEMINDAR (HOMEWARD BOUND) | 1885 | 2,131 | Sold to the Alaska Packers in 1909. Once named OTTO GILDEMEISTER. |
| STAR OF ALASKA | BALCLUTHA | 1886 | 1,716 | Sold to the Alaska Packers in 1904. One of the last in fishing service at end of twenties. |
| STAR OF SCOTLAND | KENILWORTH | 1887 | 2,293 | The Sewall "fire-cursed ship." Sold to the Alaska Packers in 1909. |
| STAR OF GREENLAND | HAWAIIAN ISLES | 1892 | 2,097 | Sold to the Alaska Packers in 1910. |
| STAR OF FALKLAND | DURBRIDGE | 1892 | 2,121 | Was ARAPAHOE of Seattle. Wrecked, May 1928. |
| STAR OF ENGLAND | BLAIRMORE (ABBY PALMER) | 1893 | 1,943 | Capsized in San Francisco Bay in spring of 1896. Sold to the Alaska Packers in 1905. |
| STAR OF ICELAND | WILLSCOTT | 1896 | 1,981 | Sold to the Alaska Packers in 1909. |
| STAR OF SHETLAND | EDWARD SEWALL (Built U.S.A.) | 1899 | 3,206 | Sold to the Alaska Packers in 1922. Sold to Japanese, 1935-1936. |
| STAR OF FINLAND | KAIULANI (Built U.S.A.) | 1899 | 1,571 | Afloat and in service, World War II, under fore-and-aft rig. |
| STAR OF ZEALAND | ASTRAL (Built U.S.A.) | 1900 | 3,262 | Sold to Japanese, 1935-1936. |
| STAR OF POLAND | ACME (Built U.S.A.) | 1901 | 3,288 | Wrecked in Japan Sea in 1918 while doing U. S. Government work. |
| STAR OF LAPLAND | ATLAS (Built U.S.A.) | 1902 | 3,381 | Flagship of the Alaska Packers' fleet. Sold to the Japanese, 1936. |

The Nomenclature of European Sailing Vessels

Europeans, generally, have maintained the long-established practice of naming their ships, pleasingly or characteristically, to give them identity and usually with an appealing name. Groups of men organized companies to own and operate ships, and the line in which a ship operated or a company to which it belonged was deemed of more importance in naming a ship than the perpetuation of the name of any individual stockholder or manager. In the days when British iron sail was gaining supremacy on the seas because of economic factors and an aggressive national policy that was determined to make Britain the Mistress of the Seas (both naval and mercantile, sail and steam) and, later, toward the end of the era of merchant sail, British ships were named not after individuals, as were so many American-built ships (with the person so honored being of but little importance in the history of marine commerce), but in harmony with some defined and strictly non-personal policy of company and line identity. A British ship might be one of a "county" or "city" line or of a "drum," "bank," "clan," or "falls" line, and with the name was associated knowledge of the owners as a body and not the identity of some relatively insignificant minority fraction holder in one vessel. Among the host of British companies or lines which owned and operated iron sailing ships can be briefly mentioned the following:

| Owner and Line | Period Ships Built | Approx. No. of Ships | Representative Names of Ships | Owner and Line | Period Ships Built | Approx. No. of Ships | Representative Names of Ships |
|--|--------------------|----------------------|---------------------------------------|------------------------------------|--------------------|----------------------|----------------------------------|
| Shire Line fleet | 1869-1895 | About 40 | PERTSHIRE FIFESHIRE | J. P. Corry & Co.'s Irish "Stars" | 1862-1886 | 12 | STAR OF ALBION STAR OF SCOTIA |
| Fleet of the British Ship-owners Co., Ltd., of Liverpool | 1864-1884 | About 30 | BRITISH SOVEREIGN BRITISH MERCHANT | Shankland's "Burn" Line | 1868-1887 | 11 | BANNOCKBURN CRAIGBURN |
| Craig's "County" Line | 1863-1887 | 22 | COUNTY OF BUTE COUNTY OF SELKIRK | Newton's "Dale" Line | 1867-1885 | 11 | WASDALE BORROWDALE |
| Milne's "Inver" fleet | 1889-1904 | 19 | INVERCOE INVERKIP | Lyle's "Cape" Line | 1868-1877 | 10 | CAPE HORN CAPE VERDE |
| Smith's "City" fleet | 1866-1882 | 17 | CITY OF ATHENS CITY OF MADRAS | Wright, Graham's "Fall" Line | 1878-1894 | 9 | FALLS OF CLYDE FALLS OF GARRY |
| Fernie's "Omene" fleet | 1869-1891 | 17 | MELPOMENE EULOMENE | Dunlop's "Clan" Line | 1874-1887 | 9 | CLAN CAMPBELL CLAN MACKENZIE |
| The Sierra Shipping Co. | 1875-1889 | 14 | SIERRA BLANCA SIERRA MIRANDA | Gillison & Chadwick's "Drum" fleet | 1876-1891 | 9 | DRUMMUIR DRUMROCK |

There was an Andrew Weir's "Bank Line," which grew in the 1890's to become a big fleet, but names ending with "bank" were used for the ships built, and a few of the many ships bought had their names changed. Such names as *Springbank*, *Olivebank*, *Thistlebank*, *Laurelbank*, etc., are pleasing and well known. Carmichael's fleet of the "Golden Fleece" consisted of thirteen ships (built in 1868-1886) that were appropriately named, and British shipowners who had no uniform custom in naming their ships almost universally caused to be selected pleasing names that were non-personal unless the name was that of a celebrity (usually a titled individual or a national hero). A Britisher named his ship much as he would his horse, and there is a similarity in the proper naming of fine ships and fine horses. All British sailing ships of every type carried pleasing names, and even old convict ships, slavers, and coolie ships had names that were attractive and classy. Of fifty-eight square-rigged coolie ships built in Britain during the years 1828-1894, only one bore an individual's

name, and that was the *George Rainy* of 519 tons, built at Liverpool in 1861, which became one of Sandbach, Tinne & Company's fleet. From the earliest days, British East Indiamen, China and Australia clippers, and later iron sailing vessels as well as steamships gloried consistently in good, pleasing names that suggested quality and dignity and a broad designation outside of personal limitations.

The Standard Oil Company was a big corporation, and like the Anglo-American Oil Company, of Britain, it selected pleasing non-personal names for its ships. The ships built in Britain by the Anglo-American Oil Company in 1901-1902 were named *Comet*, *Nonpareil*, *Brilliant*, *Daylight*, *Arrow*, and *Eclipse*; while the three of generally similar type built by the Standard Oil Company at the Sewall yard, Bath, Maine, at the same time were named *Astral*, *Acme*, and *Atlas*. All were pleasing, dignified, and meaningful euphonious names and were different from those used by the Sewalls when they christened the three sisters of the Standard Oil trio, whose names were *Arthur Sewall*, *Edward Sewall*, and *William P. Frye*.

When the first of the two mammoth super-liners was launched by the British transatlantic Cunard Line, the marine fraternity of Britain was shocked when the company departed from its ancient custom, discarded tradition, and named the first of the big pair *Queen Mary*. Although the British have great respect (and adoration) for their royal family, the change in policy not only caused general criticism but also "upset the country." The reason for the change, which leaked out later, is amusing. It appears that after the company had decided to name the first of its "big pair" *Victoria*, which was suitable, as it ended with the traditional Cunard "ia" and was an appealing and significant name associated with victory and triumph over opponents, the managing director of the line, in conversation with King George V, remarked that the directors of the line had decided to name their big new vessel "after England's greatest queen." He referred, of course, to Victoria, the king's grandmother and Queen of England for sixty-four years, 1837-1901, during the period of Britain's greatest prosperity. (Incidentally, the second ship would most probably have carried the name of King George's mother, the wife of Edward VII, *Alexandria*—fundamentally a heroic name dating back to a world conqueror.) King George V, in response to the statement made by the managing director of the line, misunderstood the remark and replied that he was sure that *Queen Mary* would be pleased to have the big ship named after her. The embarrassed shipping man lacked the courage to correct the king's error; therefore, to the mortification of the Cunard Line and to the great chagrin of shipping men in general, the line felt compelled to give its splendid new liner the relatively weak and meaningless name of *Queen Mary*. As the tradition was broken, it was felt that each big liner should be a "Queen," so the second vessel was named *Queen Elizabeth* after the queen who reigned during the years 1558-1603, during which period Britain became a great marine power. This is also the name of the present queen.

Reederei F. Laeisz, of Hamburg, who founded the great "P" Line of nitrate sailing ships that ran between Chilean and German ports, named all his ships starting with the letter "P"—a custom which he inaugurated when he initiated the service in the early seventies. The most famous vessels of this fleet were the big "5-posters" *Potosi* and *Preussen*; the *Padua* was the last sailing vessel built for the line (in 1926). In 1937 the following windjammers of the old "Flying P Line" were still in service: *Pamir*, *Passat*, *Penang*, *Pestalozzi*, *Pommern*, *Priwall*, and *Padua*, most of them in the Australian grain fleet of Capt. Gustav Erikson, of Finland.

The Naming of Large American Schooners and Tow Barges

The big fleet of large multi-masted American wood schooners built by William F. Palmer were all named after members of the Palmer family, both male and female. Palmer owned

only a small part of the investment, but he managed and controlled the fleet, and his justification for the family egoism, expressed by the nomenclature adopted, was that it identified the vessels in the interest of the fleet and its owners. The big schooners of the Winslow and Lawrence fleets, with the exception of the last one (the mammoth *Wyoming* of 3,731 tons, built at Percy & Small's yard at Bath, Maine, in 1909), were all named after persons as well as all the schooners owned or operated by The Coastwise Transportation Company, of Boston, and managed by Capt. John G. Crowley. It has been said that the Lawrences, Winslows, Deerings, and Percys "were not as self-advertising as the Palmers," but these fleets were evidently not as highly organized and clearly defined as the Palmer-managed schooners. In the nineties and the first years of the twentieth century (1891-1908), the largest schooner built each year during this eighteen-year period was named after an individual—12 of them (or two-thirds) after men and 6 (or one-third) after women; moreover, 6 of these schooners were named after Palmers, 2 after Lawrences, and 1 after a Percy.

Of the leading 105 wood multi-masted sailing schooners (all over 1,000 tons) built at Bath, Maine, during the years 1890-1920, only 7 were not named after a living individual, and 98 bore a person's name. In the nomenclature of large bald-headed schooner-rigged towing barges, only 1 of the 51 largest and most important of such vessels (all over 1,000 tons) built at Bath, Maine, during the period 1896-1923 inclusive was named after a person, and that was launched in 1917. Evidently, people were anxious to have sailing vessels of any size or type named after them but not big, fine-looking rigged tow barges.

XXVIII.

THE OFFICERS AND CREWS OF AMERICAN DEEP-SEA SQUARE-RIGGERS

Number of Men in Sailing Ship Crews

THE TRANSITION period from sail to steam well illustrates the practical effect of extreme competition—and a losing economic fight—on the work demanded of men. The *Great Republic* was designed and built by Donald McKay at East Boston during the height of the clipper shipbuilding boom following the California Gold Rush. This was broadened in scope by the discovery of gold in Australia and the impetus given not only to the settling of the West Coast of North America but also to the colonization of an entire continent in the Southern Hemisphere, which, with its adjacent islands (Tasmania and New Zealand), is known as British Australasia. The *Great Republic*, when launched on October 4, 1853, and lying at the Front Street wharf at New York on December 26, 1853, pretty well loaded and about ready to sail on her maiden voyage, was the largest sailing ship in the world. The official measurements gave her a tonnage of 4,555 tons, and the owner-builder, Donald McKay, had decided that a crew of "100 able-bodied seamen and 30 apprentice boys" would be necessary to sail properly the big four-masted shipentine, with her lofty masts, long yards, and wealth of canvas. Capt. Lauchlan McKay had about completed getting the required big crew together when a fire started about midnight, December 26, at the Novelty Baking Company, 242 Front Street. A strong wind carried blazing cinders to the wharf where the *Great Republic* lay and caused the ship to catch fire. She was scuttled, burned to the water's edge, turned over to the insurance companies, and rebuilt with the upper (weather) deck eliminated and all the spars and sails reduced in size.

When the *Great Republic* made her maiden voyage and sailed from New York on February 24, 1855, across the Atlantic to England, she was still the largest ship in the world; but her registered tonnage had been cut down during the process of reconstruction to 3,356 tons, and her more practical, experienced, and economy-minded new owners, A. A. Low & Bro. (and adviser, Capt. N. B. Palmer), with their skipper, Captain Limeburner, had reduced the number of the crew to 50 men and a few boys, or about one-half the number that the McKays had felt would be necessary to operate the big sailing vessel. Naturally, her length and beam had not been changed in rebuilding, and her rig remained the same, with the length of spars and sail area reduced in the interest of economy of man-power, maintenance, and operating expense. In the winter of 1854-1855, when the *Great Republic* was finally conditioned and sent to sea, freight conditions were far different from those of 1852-1853. The slogan "Speed is king" was approaching an upset, and a period was coming when "economy" and revenue-earning power would displace "speed" on the throne of the kingdom that ruled the Cape Horn California trade.

Another big McKay extreme clipper, the three-masted full-rigged ship *Sovereign of the Seas* of 2,421 tons register, had also been built by Donald McKay "on spec" in 1852, and when he sent her out of New York on August 4, 1852, on her maiden passage bound for

San Francisco, under the nominal command of his brother Lauchlan, she had a complement on board of 106 men and boys all told. This consisted of the captain, an executive officer and 3 mates, 2 boatswains, 2 carpenters, 2 sailmakers, 5 stewards and cooks, 80 A.B. seamen, and 10 boys. These men were divided into and operated in only two watches—"four hours on and four off," which was customary.

The *Stag Hound* of 1,534 tons (owned by George B. Upton and Sampson & Tappan, of Boston), which was McKay's first real clipper (launched December 7, 1850), "carried a crew of 46 men before the mast, including 6 ordinary seamen [differentiated from able seamen] and 4 boys." The *Surprise* of 1,261 tons (the first clipper ship to be built in Boston) was launched October 5, 1850, by Samuel Hall, East Boston, for the well-known and experienced New York shipowners, A. A. Low & Bro., and built from the design of Samuel H. Pook, of Boston. When the Lows sent the *Surprise* on her maiden passage, she sailed from New York December 13, 1850, bound for San Francisco (making a record run of 97 days) and carried a complement of 52 men, "of whom 30 were able-bodied seamen, 6 ordinaries, and 4 boys."

The *Challenge* of 2,006 tons, built by William H. Webb, New York, for N. L. & G. Griswold, of New York, and launched May 24, 1851, sailed for San Francisco July 13, 1851, under the command of Capt. Robert H. ("Bully") Waterman. She carried a crew reported as "56 men and 8 boys forward" and, after an eventful passage, reached her destination 108 days out. Captain Waterman, of *Sea Witch* fame, was an excellent navigator and a hard driver, but he was negligent in checking up on the quality of his crew before leaving New York. When he got to sea, he found that he was saddled with a group of mutinous men of the lowest social order, who wanted merely to go to California and were inexperienced on board ship and defied orders and discipline. A report from an officer on the *Challenge* said that "the crew numbering sixty were all foreigners except two and only six were able to take their trick at the wheel." Captain Waterman himself wrote:

When in the neighborhood of Rio, about fifty of the crew fell on the mate with the intention of killing him and afterwards me, by their own confession. . . . They stabbed him and had beaten him shockingly before I could get to him. I struck down

three of them, rescued the mate and quelled the mutiny. I flogged eight of them. Off Cape Horn, three men fell from the mizzen topsail yard and were killed and after a few weeks more four more died of dysentery.

The California *Courier* of November 1, 1851, printed an opprobrious article in regard to Captain Waterman and his mate, which was absolutely false; but in an emotional atmosphere, impregnated with ignorance and prejudice, it caused the forming of a large lawless mob. Six hundred armed members of the vigilance committee were required to check, intimidate, and scatter it. Captain Waterman narrowly escaped lynching, but at a court trial, he was completely exonerated as to conduct throughout the entire passage by the testimony of passengers and some seamen from his own crew. The episode, however, gave the fine new clipper a bad name, and Captain Waterman, in disgust, left the sea. Capt. John Land took over the command of the *Challenge* and could get a crew only by advancing \$200 to every man who would sign on her for the transpacific run to Shanghai. Even with this "cash bait," only 40 men (instead of the 55 to 60 desired) could be secured, and they proved to be such "a tough and mutinous lot" that Captain Land sailed for Hong Kong, where a file of marines was sent aboard the *Challenge* to "bring the men to reason."

The clipper ship *Young America* of 1,961 tons, launched by William H. Webb, New York, on April 30, 1853, which was a successful Cape Horner for thirty years under her original rig, with single topsails and swinging a 104-ft. main yard, had a complement of 75 men, of whom 60 were seamen. During later years, the ship was operated with a complement of "47 to 50 hands all told."

After the War of 1812, American ships, commanders, officers, and crews conspicuously and convincingly operated to show the maritime world how to (1) run ships efficiently, (2) transport goods safely and expeditiously and deliver them in first-class condition, (3) eliminate

waste time and all senseless time-honored procedure, and (4) make money. Although American officers and seamen received higher wages than the British and other foreigners, their skill, interest, and energy enabled American ships not only to be sailed better but also to be operated with much smaller crews than any foreign ships. Moreover, American ships sailed faster, were driven harder, and turned around faster; they made five round voyages to the foreigners' three or four, and this speed of service commanded better freight rates. In those days, before British underwriters organized to boost British iron and kill American wood merchant sail, American ships, being demonstrated as safer risks, enjoyed lower insurance rates. During the several last decades of American wood sail, it would have been unbelievable to the owner of an American Down Easter to hear of fair treatment to American wood ships on the part of British underwriters and the internationally all-powerful British Lloyd's and of their establishing rates justly and scientifically, based on merit and actual experience, instead of emotionally and built upon national interest and prejudice. However, in the good old days of free competition on the seas, insurers even went so far as to offer a rebate of 10 per cent of premiums on all voyages made without the use of spirits, and this rebate was a regular and fixed earning of American vessels. Foreigners grogged their crews, whereas American sailors were served hot tea and coffee—but no rum.

It has been said that the superior record of Yankees over the Britishers on the high seas during the first half of the nineteenth century was due to superior American-designed and built ships; but such a statement is incorrect, for, whereas partly true, it ignores the most essential factor that contributed at that time to relative success—the efficient operation of ships. The shipyards of the United States during this period were launching fleets of fine vessels, the speed and superior construction of which excelled everything else on the seas; but if the British, Dutch, French, or men of any other nation had manned these American ships, they could not have approached the performance of Yankee ships sailed with a Yankee crew. It is a well-demonstrated and admitted historical fact that the commanders, officers, and crews of the American merchant service were not only unequaled but also unapproached; they were in a class by themselves, and "the rest nowhere."

American merchant ships showed speed in port as well as at sea, and such speed of discharging, loading, and turning about was fully as important as—and sometimes more so than—speed under canvas. Here American persuasion, tact, and enterprise, with trading and executive ability, supplemented energy and industry and resulted in effective practical execution of well-laid plans. Many an American ship was turned around in port and off to sea again while a foreign ship was unloading.

Expressed as a percentage of registered tonnage, the American merchant marine increased $8\frac{1}{2}$ times as much as that of the British between the years 1830 and 1836. A thoroughly alarmed British Parliament established these figures as a result of an extensive investigation, and the committee reported that the commanders and officers of American ships were "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 "the seamen more carefully selected and efficient."

In the 1840's, British ships were required to carry 4 men and 1 boy per 100 registered tons, or 40 men and 10 boys on a 1,000-ton sailing vessel; whereas before Americans stopped going to sea, only 2 to 3 men per 100 tons were carried on a square-rigger. However, in those days, the quality of the crew as well as the command on an American ship was very much superior, the wages much higher, and the food better. Gradually, native born seamen disappeared from the forecabin of American ships. Their places were taken first by competent seamen of foreign nationality, of whom the Scandinavians were generally the best and most reliable, but later by riffraff and the product of exploitation by the masters of seamen's board-inghouses, which existed at all ports of call and grew in vicious inhumanity and incredible depravity as the years rolled by.

During the Revolution, the early days of the republic, and the War of 1812 and for several decades thereafter, the officers and crews of American sailing ships were outstanding in spirit, initiative, courage, resourcefulness, and all-around ability. Boys who felt attracted to ships responded to the call of the deep, went to sea early, and by the time of attaining their majority had been well schooled and were generally capable officers and competent to command. Young men going to sea made the handling of ships their life's work; they started in as boys at the bottom, went "through the mill," omitted no part of the grind, and served as cabin boys, or sort of apprentice sailors; they shipped "before the mast" as forecastle hands, became able seamen, and, when qualified, advanced to become mates and later masters. They studied business, freights, trading, buying and selling, languages, customs, established procedure, government restrictions, foreign peculiarities and prejudices, geography, charts, winds, currents, harbors, channels, etc., and worked hard and with enthusiasm to be masters of both ships and all things pertaining to the handling, maintenance, repairing, and operation of ships. When intelligent and ambitious American boys stopped going to sea, the bell commenced to toll a warning of the approaching end of deep-sea sail and the day of the square-rigger. The clipper ship era, with its tremendous demand for forecastle hands to handle the canvas of almost innumerable loftily sparred and heavily canvased ships, lowered the quality of men before the mast and substituted "hands" for able seamen. The officers were affected also; the system of training, responsibility, and rewards underwent a gradual change; and by the sixties forecastle hands were likely to be disreputable "port sweepings," jail birds, and the lowest strata of human jetsam mixed in with a few old salts of earlier days.

During a few decades prior to the fifties, the majority of the sailors on American long-voyage deep-sea vessels had gradually become Scandinavians; they were strong, clean, capable, willing, and obedient and were in every sense of the word able seamen; they could do any kind of rigging and sailwork, and they took pride in doing their work well. American boys came and went, learned sailing, and climbed higher; but the Scandinavian sailors stayed on their jobs, were proficient and knew it, and they taught American youngsters much. The transatlantic sailing packet service was the first trade to be deserted by American seamen, who preferred deep-sea sailing and seeing the world to monotonous "ferrying." The short "ferry" runs, hard driving, and bad weather of this service did not appeal to the old salts, whose waters were the Seven Seas and who preferred long voyages. The result was that an entirely different class of sailors came into being on the packet ships, and they were usually wild and tough. For years the transatlantic sailing packets ran with forecastle hands that were a conglomeration of foreigners of varying experience and quality, but later the Liverpool Irish "got in strong" and with them came the era of the "packet rats," "gutter sweepings," etc.

As previously referred to, a passenger who made a westward crossing in the *Hottinguer* (993 tons) of the New York-Liverpool New Line in 1845 wrote: "We had a crew of ten nations—Englishmen, Americans, Spaniards, Italians, one Frenchman, one Dane, one Prussian, one Portuguese, two Dutchmen and a Scotchman; and I discovered the circumstance by hearing the Captain call out, during the gale, 'Stand alongside all you that don't understand English.'" There was a steady and progressive deterioration in the quality, character, and behavior of American ships as the Americans quit signing up on them, and the Atlantic packets were the first to notice the difference. When the Dramatic liner *Garrick* of 895 tons was first put in the New York-Liverpool run in 1837, she carried a "ship's company of 36 men," which represented 4 men per 100 tons register, and she was reported as "a well-manned ship" as far as number and caliber of the crew were concerned. Evidently, the crews on many of the packets grew deficient in both quantity and quality with the years, for Capt. R. W. Foster, commanding the old *Garrick* on a passage from Liverpool to New York in 1854, wrote in his log: "Such a crew of lubbers is enough to make the heart sick, 18 in number, 10 of whom cannot discriminate between the stem and the stern, and only 4 out of

the remaining 8 can steer." It is a question, however, as to whether tough "packet rats" who were experienced in the North Atlantic "ferry" or "greenhorns" who did not know the ropes made the better of the two types of crews, for there did not seem to be any alternative in the fifties. Captain Samuels of the clipper packet *Dreadnought*, who made sailing history on the Atlantic in the fifties, preferred the tough Liverpool Irish "packet rats," and the gang of the "Bloody Forty" had no terrors for him. He wrote:

The Liverpool packet sailors were not easily demoralized. They were the toughest class of men in all respects. They could stand the worst weather, food, and usage, and put up with less sleep, more rum, and harder knocks than any other sailors. They would not sail in any other trade. They had

not the slightest idea of morality or honesty, and gratitude was not in them. The dread of the belaying-pin or heaver kept them in subjection. I tried to humanize these brutal natures as much as possible, but the better they were treated the more trouble my officers had with them.

The famous mutiny on board the *Dreadnought* (August 1859), during which only the iron will, bravery, and resourcefulness of Captain Samuels saved the ship as well as the lives of his officers, himself, and probably of passengers, furnishes one of the most exciting episodes in the history of transatlantic packet ships. It happened that the entire crew had been shipped in Liverpool from a class of the most lawless and bloodthirsty rascals that ever made a port notorious. They were a fraternity of criminals, whose name was a terror to shipmasters and two or three of whom would disorganize any well-meaning crew. Shipping on one sailing packet in strength (some twenty-five of them) to carry out a predetermined plan, they were formidable.

When the transatlantic Black Ball liner *Columbia II* (1,050 tons) in 1847 was struck during a winter gale by a mountainous sea that washed Captain Rathbone, two of the mates, and others to their death, the tough crew of that packet, free from the restraint of discipline, created a reign of terror on the ship, broke into the cabins, rifled the ship, and robbed and abused the passengers. Had it not been for another vessel that later came upon the stricken *Columbia* in the hands of a mutinous crew and put an officer aboard, with a supporting force, to re-establish order and take the ship into port, the result would have been most tragic. It was generally the mate of a packet, such as the one put aboard the *Columbia* in mid-ocean in 1847, who had the responsibility of keeping the crew in line and under effective control. The position of mate of a transatlantic packet ship was not one for a weak or easy-going man; courage, physical strength, and endurance were the important factors. To face the elements and contend with the bellicose crews required nerves of steel, and it used to be said that "no one was wanted as an officer of a packet who could not lick his weight in wild-cats."

Capt. Arthur H. Clark describes the forecabin hands of the American transatlantic sailing packets of the late forties, fifties, and sixties as "Liverpool Irish" and says that they were "a species of wild men, strong, coarse-built, thick-set; . . . men wallowing in the slush of depravity, who could be ruled only with a hand of iron. . . . With all their moral rottenness, these rascals were splendid fellows to make or shorten sail in heavy weather on the Western Ocean, and to go aloft in a coat or monkey jacket in any kind of weather was regarded by them with derision and contempt." But making and taking in sail were about all this packet ship class of sailors could do, and they were useless for the doing of rigging work, sailmaking and repairing, and the host of things necessary to keep a vessel clean and shipshape, which is an important part of a deep-sea seaman's job. All rigging and conditioning work on a packet had to be done in port; on a long-voyage ship, most of it was done at sea, and such a vessel returning to port was at her best. The able seamen on long-voyage American square-riggers favored long ocean routes, but of the "packet rats" who manned the ships of the Atlantic "shuttle" Captain Clark says: "These ruffians did not much care for India and China voyages, but preferred to navigate between the dance-halls of Cherry Street and the grog-shops of Waterloo Road and Ratcliffe Highway. . . . They worked like horses at sea and spent their money like asses ashore." It was on the transatlantic packets that the bucko mates became notorious and that "belaying-pin soup" and "hand-spike hash" were first introduced by

bully mates to keep the mutinous and belligerent of the fore-castle hands under subjection and stimulate the slothful to exert themselves.

In the fifties, the transatlantic packet *Henry Clay* (1,207 tons), running in the Dramatic Line between New York and Liverpool, was reported as carrying a complement of 40 men, of whom 30 were able seamen. The crew on these packets was later cut down quite sharply in the fight of sail versus steam. In the seventies, the *Plymouth Rock* (973 tons) of the New York-London Red Swallowtail Line, we are told, "sailed with only twenty foremast-hands." This complement, it was said, "proved inadequate and disastrous economy" for a North Atlantic sailing liner even as small as the McKay-built ship, which, nevertheless, was quite sizable for the trade, being 174 ft. long, 34 $\frac{2}{3}$ ft. beam, and 22 $\frac{1}{2}$ ft. deep and practically the size of the *Yorkshire* (996 tons)—the undisputed queen of all transatlantic sailing packets.

The Canadian-built fast ship *Marco Polo* (1,625 tons), in the early fifties, ran from Liverpool to Australia in the British Black Ball Line as a colonial clipper with 30 able seamen signed up, but with another 30 able-bodied men selected from the emigrant passengers "to work their passage." The British China tea clippers built in the fifties and sixties were of small size and virtually racing machines that carried a small amount of paying deadweight cargo and required ballast. They were ticklish to handle because of their models, narrow beam, fineness of lines, big deadrise, lofty spars, long yards, and big sail spread. The *Flying Spur* of 735 tons, built at Aberdeen in 1860, had a crew of 36, and the *Lord Macaulay* of 846 tons, built at Sunderland the same year, carried 40 men; but the beautiful *Ariel* of 852 tons, built by Steele on the Clyde in 1865 (and one of the two winners in the historic Foochow-London tea race of 1866, when the *Ariel* and *Taeping* out of sixteen tea clippers sailed a dead heat in 99 days—to the Downs), was reported to carry a crew of 32 men, 24 of whom were A.B.'s (or able-bodied seamen), presumably the other 8 being ordinaries. The *Cutty Sark* (892 tons), built in 1868 and generally considered as Britain's fastest clipper, carried a crew of 35 men in her prime when running in the China tea and the Australian wool trades. The British Blackwall frigates, generally trading to India in the fifties and sixties and following the tradition of the old British East India Company, were unusually heavily manned, and it is said by British historians that a little 1,000-ton Blackwall frigate of this period was "manned by 60 hands, and these all A.B.'s and well trained, competent seamen." Such complements as those on the little British clippers or the Blackwall frigates of the fifties to seventies can be compared with the 26 men carried on the big *Herzogin Cecilie* of 3,242 tons when operated by Capt. Gustav Erikson in the Australian-British grain trade during the last of her days in the thirties of the twentieth century.

In stating the size of the crew upon any sailing vessel, it is extremely difficult in the available records to differentiate between the total complement on board and the number of fore-castle hands, or men "before the mast."

It was usually said in the seventies that an American Down Easter carried a crew of about 25 to 35 men according to the size of the ship and that the average quality of the seamen had been deteriorating since the Civil War. The U. S. Commissioner of Navigation, in his 1904 report, gave figures for the crews carried on American square-rigged ships and shipentines of various sizes, which are herewith set forth comparatively:

| Name of Vessel and Rig | Year Built | Registered Tonnage | | No. of Crew | Name of Vessel and Rig | Year Built | Registered Tonnage | | No. of Crew |
|---|---------------|-----------------------|-------|----------------|---------------------------------|---------------|-----------------------|-------|----------------|
| | | Gross | Net | | | | Gross | Net | |
| SHENANDOAH (4-masted shipentine) | 1890 | 3,406 | 3,258 | 33 | A. J. FULLER (3-masted ship) | 1881 | 1,848 | 1,782 | 21 |
| SUSQUEHANNA (4-masted shipentine) | 1891 | 2,744 | 2,628 | 27 | BERLIN (3-masted ship) | 1882 | 1,634 | 1,553 | 17 |
| A. G. ROPES (3-masted ship) | 1884 | 2,460 | 2,342 | 27 | AGENOR (3-masted ship) | 1870 | 1,487 | 1,414 | 17 |

The bark *Palmyra* of 1,359 gross tons had a crew of 14 men and the bark *C. Winslow* of 943 tons a crew of 12 men. The complement of the *Shenandoah*, above stated as 33, was later reported as 30 men, which was the number of crew placed by the Sewalls aboard the mammoth *Roanoke* of 3,539 tons—the largest wood square-rigger ever built in the world. The first of the Sewall "Big Wood Four," the mammoth three-master *Rappahannock* (3,185 tons gross and 3,053 tons net), was sent from Philadelphia to sea and given by her economy-minded owners a crew of 28 all told, of whom only 20 were seamen or foremast hands. When these men saw the size of the vessel, the length of the yards, and the number and area of the sails, a mutiny developed on board. There was a rough and tumble scrimmage, in the course of which one man's arm was broken and another's head smashed, and some of the men were locked up and kept on short rations for two weeks, which disciplinary measures were made possible by the pilot's putting the ship ashore. When she finally got off, the *Rappahannock* proceeded to sea with 20 sore, half-starved, and exasperated men in her fore-castle, and one of these was drowned and another killed by a fall from the mizzen crosstrees on the passage to Japan. This ship was about twice the size of the Down Easter Cape Horners of the sixties and seventies and had been given a smaller crew to handle the tremendous sails. It is not surprising that the fore-castle hands kicked and refused to go to sea voluntarily and undertake such a back-breaking, heartless, and poorly paid job on a passage to the Far East of nearly six months' length. During the remainder of her brief career, the *Rappahannock* was shunned by knowing seamen, and the Sewalls had to admit what the marine fraternity had known from the start: that the ship was too big for a three-master.

The other three of the Sewall "Big Wood Four," including the much smaller *Susquehanna*, were given four masts as were the Sewall steel ships, the first two of which were of less tonnage than the three-masted *Rappahannock*. The report of the U. S. Commissioner of Navigation in 1904 gives the number of the crew of the *Shenandoah* as 33, but when Capt. James F. ("Jim") Murphy took her out from New York on January 19, 1891, on her maiden voyage bound for San Francisco, there were 38 men all told aboard, and this was the regular number of hands that "Shotgun" Murphy sought to keep in the ship during the many years that he was in command of her. This complement, if we ignore the 4 apprentices that Murphy tried to carry, was no more than that of the *Henry B. Hyde*, "the Queen of the Down Easters" (a three-masted ship of some 825 tons less register), when she sailed over the same Cape Horn course on her maiden voyage and left New York February 24, 1885, for San Francisco. A comparison of the complement of the *Shenandoah* (1891) and *Henry B. Hyde* (1885) with that of the clipper ships *Sovereign of the Seas* (1852) and *Young America* (1853) is set forth herewith:

| Complement | Number of Men on Maiden Voyage | | | |
|---------------------------------|--------------------------------|-------------------------------|--|----------------------------------|
| | SHENANDOAH (3,406 tons) | HENRY B. HYDE (2,583 tons) | SOVEREIGN OF THE SEAS (2,421 tons) | YOUNG AMERICA (1,961 tons) |
| Captain and mates..... | 4 | 4 | 5 | 5 |
| Boatswains | 1 | 1 | 2 | 2 |
| Carpenters | 1 | 1 | 2 | 2 |
| Sailmakers | — | 1 | 2 | 1 |
| Donkeyman | 1 | — | — | — |
| Cooks, stewards, and cabin boys | 3 | 3 | 5 | 5 |
| Seamen—before the mast..... | 24 | 24 | 80 | 60 |
| Apprentices | 4 | — | 10 boys | — |
| Total | 38 | 34 | 106 | 75 |
| Tonnage per man..... | 90 | 76 | 23 | 26 |

Owing to the increasing competition of steam, the steady fall of freights, and the insurance differentials in favor of British iron ships and their cargoes, together with American legislative indifference to the well-being or even the existence of the United States merchant

marine and the shortage of available men who would sign up as seamen (good, bad, or indifferent), a sizable Down Easter in the nineties seldom went to sea with more than 18 men in the crew. The last of the Down Easters and the last wood square-rigged ship built in America, the *Aryan* of 2,124 tons, launched into the Kennebec River in 1893, on her maiden voyage had a crew of 22 men—equivalent to approximately 100 tons per man.

It is unfortunate that the quality of the crews lowered greatly as competitive conditions and the economic demands to permit of survival forced the owners of sailing vessels to reduce operating expenses and lessen the number of the crews. A greater amount of money paid as wages and expenses to a smaller number of men—and these of much inferior capability and productivity—coupled with an ever-increasing shortage of available seamen, even of a very low caliber, was bound to spell the end of sail, even if other economic factors had remained more favorable. Toward the end of sail, experienced and competent masters of square-riggers were growing old and kept at sea long years after they should have retired. Many died at sea because of the strenuous, wearing life, and many others came ashore to die. At times, a captain was the only real seaman as well as the only navigator on a big three- or four-masted square-rigger engaged in merchant service on the Seven Seas. The *Henry B. Hyde*, with a good skipper and a fair crew, was unbeatable as an economic, good-carrying Down Easter, making remarkably fast passages in approximately clipper ship time in the latter part of the eighties and throughout much of the nineties; but no ship can be sailed without men, and the mere number of a signed-up crew is meaningless as far as accomplishment in handling a square-rigger is concerned. When the *Henry B. Hyde* arrived at San Francisco in December 1897, completing what for an ordinary ship could have been considered a pretty fair Cape Horn passage from New York, her skipper, Captain Scribner, indignantly declared that in his entire crew there was not a single sailor; all were Bowery toughs of the fighting gangster type or their lawless and brutish equivalent. The men were mutinous from the start to the end of the passage, and the captain and officers—without having any recourse—were at the mercy of the belligerent mob of a lazy greenhorn crew that defied all discipline and the customs of the sea; the officers were allowed merely to navigate the ship, while the crew did exactly what it pleased.

Capt. David H. Rivers, in a sort of letter-log written on a slow 132-day passage of the *A. G. Ropes* from San Francisco to Liverpool during January-June 1890, wrote in part:

The first two weeks at sea is generally the hardest on the captain, as I have a new set of Dagoes to get under discipline and whether I am a good fellow or not, I have to act the part of a tyrant. If a captain undertakes to use this foreign element, which we have in our sailors, half way decent, they will have full charge of the ship in no time. We are 34 souls aboard—that is, providing all the sailors possess souls. My family, the mate and the sailmaker are the only Americans; the second mate is a Swede; the third mate, Scotch; boatswain, Irish; carpenter, Danish; steward, German; cook, Irish; the balance of the crew are of all sorts, even to a

Maltese. . . . Out of my seventeen able-bodied seamen, there are only four that can do a decent job of rigging, and I have disrated several of those claiming to be able-bodied to the rank of ordinary seamen, which reduces their pay from \$20 to \$15 per month. The crew I had on my outward passage, just before leaving the ship in port, cut my sails and rigging, knocked holes in the water casks and did other damage that would not be found until after they had been paid off. These men had been well treated and well fed. So you see we have anarchists away out on the ocean.

In 1901, on a passage from New York to Yokohama, thence to San Francisco, the *A. G. Ropes* had neither a first nor a second mate. No certificated men were obtainable for square-rigged deep-sea work when it was time for the ship to sail, so Captain Rivers took chances in putting to sea with only 8 white men of various nationalities aboard, the remainder being of the yellow race. A young Scot, with no qualifications other than that he was the most intelligent and ambitious of the crew, was made acting mate. Captain Rivers got but little rest below and on one occasion was 3½ days on deck without a chance to turn in at all. The *A. G. Ropes*, built at Bath, Maine, in 1884, was a splendid Down Easter and was the only ship that ever challenged the supremacy of the *Henry B. Hyde*. In 1885-1886, the

"*Ropes*" made the triangular round voyage from San Francisco to Cork (104 days), Liverpool to New York (19 days), and New York to San Francisco (104 days) in a total of 227 sailing days.

The last square-riggers to be built in America, which were the Sewall steel fleet of four-masted shipentines of some 3,000 to 3,400 registered tons each (launched 1894-1902), carried crews of from 26 in the *Edward Sewall* to a reported 31 men on the *William P. Frye* (both of these vessels were managed by Arthur Sewall & Company). Three sister ships (*Astral*, *Acme*, and *Atlas*), which were sisters to the Sewall ships and built from the same plans at the same yard (1901-1903) for the Standard Oil Company, carried crews of 32 to 34 men. The big 3,765-ton four-masted shipentines *Brilliant* and *Daylight* (also, like the American trio, intended for case oil carriers to the Far East), built in 1901 on the Clyde for the Anglo-American Oil Company, had 28 A.B. seamen (2 of each watch being quartermasters) and 6 apprentices; in addition, however, they carried, besides the captain, 3 mates and the forecandle hands, a boatswain, carpenter, sailmaker, donkeyman, 2 cooks, and 2 stewards—a total complement of 46 all told, including the skipper.

American schooners, or fore-and-afters, were popular with owners because of the small crews with which they could get along. In the eighties, good-sized schooners of 1,000 tons carried a crew of 8 or 9 men. Around the turn of the century, big schooners of over 2,000 tons were being built, with a crew to man them of only 10 or 11 men. During the first decade of the twentieth century, a tremendous vessel, such as the *Davis Palmer* of 2,965 tons register, was being operated by only 9 men, and the colossal "white elephant" *Thomas W. Lawson* of 5,218 tons and seven masts had a complement of only 16 men all told.

The last and largest of the big wood schooners was the *Wyoming* of 3,731 tons, built at Bath, Maine, in 1909. This tremendous vessel had a crew of only 11 men, or only 2 or 3 more than manned a schooner of less than one-third her size thirty years earlier. The reason for this big reduction in man-power required for operation, which had jumped from 115 to 340 tons per man (or threefold) in some three decades, was the more general and effective use of steam power in working the vessel at sea as well as in port.

As ships and sailing craft in general were cut down to barges and towed by tugs in the coastwise trade, the crews naturally were greatly reduced. Around the turn of the century, large vessels of 2,000 tons and over, with their stubby masts and emergency, steadying, and "helping-out" lower sails (a so-called bald-headed schooner rig), were operated with a crew of only 3 or 4 men.

It is extremely difficult to compare scientifically the numbers stated as the crews of different vessels. Sometimes the total complement of officers and men is stated, and on other occasions only the number of forecandle hands (or men "before the mast") or the number of A.B.'s and O.S.'s (able-bodied seamen and ordinary seamen) is stated. When long-distance deep-sea towing with large vessels was inaugurated in "horse-and-cart" fashion across the Atlantic in the first decade of the twentieth century, the Anglo-American Oil Company built at the yard of Harland & Wolff, Belfast, a big six-masted bald-headed schooner-rigged barge of 7,718 tons, named the *Navahoe*, to carry oil in bulk across the North Atlantic throughout the year, winter and summer, in tow of the steam oil tanker *Iroquois* of about 10,000 tons; the *Iroquois* formed the "horse" and the *Navahoe* the "cart" of a combination that, it was hoped, would prove to be a very economical form of ocean transport. The owners announced that the barge *Navahoe*, in this heavy work, would carry a crew of 8 seamen; but as the barge was equipped with a rather large steam-generating plant, a steam towing machine in the bow, together with several steam handling appliances, wireless, etc., it was evident that 8 men could not possibly be the total complement of the barge. Investigation showed it to consist of 22 men, all told, in definite service (the number being determined by experience). The list of the total officers and men carried aboard showed 8 seamen, 4 quartermasters, and 1 boatswain (or 13 men in the Deck Department); 2 engineers and 4 firemen (or 6 men in the

Engineering Department); a wireless operator and 2 watch officers. Many a square-rigged wood Down Easter was being compelled to operate with this number of men during the last highly competitive and discouraging years that marked the close of the era of merchant sail.

Training of American Boys for the Sea—Youthful Sea Captains

In the early days of the republic, Salem, Mass., was a leading shipping community, and Salem boys were trained for merchant marine service somewhat similar to the way in which Nantucket boys were schooled from childhood in whaling, the training being both practical and theoretical and commencing at a tender age. Academic schooling was not general in those days, but Benjamin W. Crowninshield (who became a U. S. Congressman and was Secretary of the Navy under Jefferson) tells us that he and his five brothers, "when little boys, were all sent to a common school" in Salem "and about their eleventh year began their first particular study which should develop them as sailors and ship captains." Boys of twelve were taught navigation, and they were supposed "to master the subject thoroughly" before going to sea as young forecandle hands or as junior ship's clerks. In the latter capacity, much was to be learned of the business management of a ship, while observing during a voyage the practical working of a vessel and the navigation of her. The Crowninshield brothers (except one who died of fever at Guadeloupe, when fourteen years old, while serving on a Salem ship as captain's clerk) earned unusual distinction in the shipping world and as men of affairs, and all five surviving brothers commanded ships before they were old enough to vote. Paine tells us: "At one time the five were absent from Salem, each in his own vessel, and three of them in the East India trade."

Salem schools were not for the exclusive use of the rich, and they must have been very good in the early days of the republic and even during the Revolution. Nathaniel Bowditch, of a family in very straitened circumstances, in the year 1780, when seven years of age, was sent to a Salem "seminary of learning," which he attended for five years, following which, being too frail and physically weak to go to sea, he was apprenticed to a ship chandler. Bowditch was a mathematical prodigy and a sort of thinking machine. The practical working of ships or trading overseas did not appeal to him, but he loved the mathematics of navigation. As he had to earn a living when his apprenticeship was over, he went to sea in 1795 as a captain's clerk and during the next nine years made five voyages in order that he could make money to live and continue his work on navigation. Bowditch did not go to sea until he was twenty-two years old, and as he was a sickly young man who, because of his physical condition, seemed out of place on a ship, he felt that he was "extremely fortunate to get a chance to go to sea."

Most Salem boys completed their academic learning at about fourteen, some younger and some a little older; but when they reached their majority, no matter how poor or rich they were, it was expected that their education ashore plus their training and experience at sea would have made them worthy of some responsible position at sea. A poor boy going to sea at fourteen as a sort of apprentice sailor and one of the forecandle hands usually felt that if he had the right stuff in him and worked hard, studied and took advantage of every opportunity for advancement, as he reached his full growth and strength so he should gain a position of responsibility, move aft, and be a first mate (or even a master) when twenty-one years old. He fully expected to have his own command by the time he was twenty-five. Moreover, these young men were thrifty, and most of the Yankee boys were as shrewd and as keen traders as they were industrious and enterprising. They earned but little money while

they learned the ways of ships and the sea, but they had opportunities for trading and generally made the most of them. They could accumulate but little capital by saving from their pay, but they were youths of character and had no difficulty in borrowing money and organizing legitimate ventures in which they and their friends benefited. It seemed to be every Yankee boy's ambition when going to sea not only to work up to a command but also, later, to own a share in his ship and to be able to leave the sea when in his prime (and before he grew too old). He wanted to manage ships and trade ashore, to obtain cargoes for and sell those brought by the ships in which he would have a financial interest, and to use his intimate knowledge of foreign trade routes and markets. Owners liked the idea of a captain's having a financial interest in the ship that he commanded, and they quite often hired a captain for a small salary plus a percentage of the profits of a voyage, asserting that a ship did better when the command was financially interested in the outcome of a voyage.

A marine historian has said that, in the early days, American commanders and officers engaged in foreign commerce "were recruited from the flower of the country's youth and manhood." This is correct if it does not refer to breeding in relation to wealth and social standing, or so-called "class." The United States was a democracy very different from that boasted of, but not in effect, in Britain, where an aristocracy was the ruling power and hard and fast rules were drawn between classes. The most truly democratic institution on earth was to be found on American ships, for here firm discipline was maintained with co-operative friendliness, position was honored, a superior was respected, and orders of officers promptly and cheerfully obeyed; a man's or a boy's work was acknowledged without any prejudice, and in the competition of life on board a ship there was for all "a fair field and no favor." Every promotion gained had to be earned by industry, intelligence, unselfish devotion to the cause, and the practical utilization of ambition, with generally "much sweat" and often the "burning of midnight oil." Boys did not travel on any Royal Road to become masters of American ships at an early age because they were well born or had relatives or friends with influence. Having entered a forecabin as a boy or apprentice sailor or the cabin as a junior clerk, the boy himself was responsible for his future, and whether he started his career by boarding a ship "through a hawse pipe or a cabin window," his advancement at sea was up to him. Many an owner's "cousin" was injured more than helped by having a relative as part owner of the ship on which he was serving.

Young "Nat" Silsbee, of Salem, Mass., went to sea "on his own" as a boy of fourteen, getting a job on a ship as junior clerk (or writer), but "Nat" was ambitious, industrious, and observing. He did all the work assigned to him rapidly and well, spent all his spare time on deck, with the sailors in the forecabin or with the officers in the cabin, and learned the ways of a ship and the sea, practical navigation, etc. In 1792, when somewhat less than nineteen years old, young "Nat" was master of a sloop in the West Indian trade, and the following year, when about twenty years of age, Capt. Nathaniel Silsbee was given command of the new ship *Benjamin* of 161 tons, bound from Salem for "the Cape of Good Hope, Isle of France and India." When he sailed, it was remarked at the customhouse that "the captain and chief mate of the ship *Benjamin* bound for the East Indies are both minors." It could also have been said of the *Benjamin*, a little later on this same voyage, that of the three highest officers on board, none was over twenty, for that was the age of Captain Silsbee; while First Mate Charles Derby was nineteen, and Second Mate Richard Cleveland was eighteen years old. Writing later of his career and his family, Capt. "Nat" Silsbee said:

Connected with the seafaring life of myself and my brothers, . . . each of us commenced that occupation in the capacity of clerk, myself at the age of fourteen years; my brother William at about fifteen, and my brother Zachariah at about sixteen and a half years of age. Each and all of us obtained the command of vessels and the consignment of their cargoes before attaining the age of twenty years,

viz., myself at the age of eighteen and a half, my brother William at nineteen and a half, and my brother Zachariah before he was twenty years old. Each and all of us left off going to sea before reaching the age of twenty-nine years, viz., myself at twenty-eight and a half, William at twenty-eight, and Zachariah at twenty-eight and a half years.

Three brothers of Salem, Mass., starting out without capital as young boys to follow the sea, made their fortunes before they were thirty years old. They were then ready, well equipped, and experienced in foreign trading to settle down ashore as merchants and ship-owners, backed by their own capital, and live with their families in comfort while they worked hard and became increasingly prosperous in shipping and merchandising.

Capt. Richard Cleveland was a poor but ambitious Salem lad, largely self-educated. He got a job when fourteen years old in the countinghouse of the famous shipowner, Elias Hasket Derby; but "sea water was in his blood," and he was determined to be a mariner like his father before him, so he went to sea and at eighteen was second mate under Captain Silsbee on the *Benjamin*. In 1797, when some twenty-three years old, Cleveland was in command of the bark *Enterprise* of Salem and soon thereafter began a series of voyages and adventures in various craft on the Seven Seas. When he returned to Salem after an absence of seven and a half years, he had made several extraordinary passages, had been twice around the world, and during that period had increased his personal capital from two thousand to seventy thousand dollars "by the cleanest and most admirable transactions." As fortunes were rated in the first decade of the nineteenth century, Capt. Richard Cleveland was a rich man.

Capt. Robert Bennet Forbes, of Boston, shipped before the mast in 1817 as a boy of thirteen on the ship *Canton Packet* with a capital consisting of a Bowditch "Navigator," a quadrant, a blank logbook, a Bible, a seamen's chest with simple sea clothes, "and a mother's blessing." Forbes was a poor boy and had no short-cut to fortune, but at sixteen he was a third mate, at eighteen a second mate, and when but little over nineteen years of age he was appointed captain of the ship *Levant*. After ten years of China trading, during which he passed only six months ashore, "Ben" Forbes was master of his own ship at twenty-six. At twenty-eight, he entered the important firm of Russell & Company, Canton, rose to become its head in eight years' time, and in 1840, when thirty-six years old, became a prominent merchant-shipowner in Boston. In conjunction with the most original brain, he had "the most attractive personality of any Boston merchant of his generation." "Ben" Forbes, in later life, wrote:

At this time of my life [1834], at the age of thirty, I had become gray and imagined myself approaching old age. I had attained the summit of my ambition. I was what was then thought to be comfortably off in worldly goods; I had retired from the sea professionally and had become a merchant; I had contributed something toward the

comfort of my mother; I had paid off large debts contracted in building my ship. . . . Looking back to 1824 when I was content in the command of a little ship of 264 tons, on a salary of six hundred dollars per annum, I conceded that I had arrived at the acme of my hopes. I had been blessed with success far beyond my most ardent expectations.

In *THE STORY OF THE AMERICAN MERCHANT MARINE*, John R. Spears wrote in 1910 of conditions during the last years of the eighteenth and the early years of the nineteenth century:

Although all ships of the day were, by modern standards, dangerous in size and rig; though scurvy was the plague of crews in long voyages; though vast breadths of the sea had never been explored, and the wild coasts visited had never been charted; although the first voyages were made when the American people were financially prostrate and the symbol of the American government was utterly powerless, not only in home affairs but in the face of the open and covert enmity of the leading com-

mercial nations of the world,—in spite of all this, the American ship-owners reached out for the commerce of all the earth, and *young men having ambition and ability worked their way to the command of ships before they were old enough to vote.*

The picture of one of those boyish sea-captains flinging the Stars and Stripes to the breeze on the far side of the earth portrays, better than anything ever said, written, or done, the spirit of America.

Ralph D. Paine, in *THE SHIPS AND SAILORS OF OLD SALEM*, wrote in 1908:

In these latter times a nineteen-year-old lad of good family is probably a college freshman without a shadow of responsibility, and whose only business

care has to do with the allowance provided by a doting parent. He is a boy, and is ranked as such. When our forefathers were creating a merchant

marine whose achievements form one of the finest pages of American history, seafaring lads were men at twenty, ruling their quarter-decks and taming the rude company of their forecastles by weight of their own merits in brains and pluck and resourcefulness.

The forecastles of American ships in those days, however, did not contain the tough characters seen in later years and positively no sign of the ruffraff and gutter sweepings imported from abroad that crept in during the latter part of the transatlantic sailing packet ship days and steadily throughout the clipper ship era of the fifties, with California (and Australia) gold as the bait to attract the worst foreign human element into the forecastles of American ships.

When the United States was building up a foreign merchant marine and rising to pre-dominance on the Seven Seas by sheer merit, Americans designed, built, owned, managed, and sailed the ships, and Americans were in the forecastle as well as on the quarter-deck. Moreover, there was no sociological line of demarcation between the forecastle and the cabin in the American merchant service; for a boy or youth "before the mast today would probably be aft tomorrow," and the forecastle for young would-be sailors was merely a school for the making of an officer and a steppingstone to fortune. A young forecastle hand was considered an apprentice sailor, and he was taught by the older, experienced, and less ambitious or poorly educated men the practical work of seamanship and by the officers the rudiments of navigation. Every American ship was a training vessel on which a few boys went to school to learn to become seamen and whether or not they had the necessary stuff in them to become officers and masters. Poverty was no handicap; it was health, character, ambition, and industry that told in a fair and competitive field for recognition and advancement—not money or so-called "breeding." On an American merchant ship, a line that was not to be crossed was never drawn between the forecastle and the quarter-deck, such as developed in the armed forces—both naval and military—between officers and enlisted men following the traditional British system of class. Fortunately, the United States merchant service never had—and was too fundamentally democratic ever to tolerate the thought of—an Annapolis or West Point, with their un-American exclusiveness, which brought the senseless aristocratic creed of Royalist Britain into the institutions of a republic that was supposed to be essentially democratic. As long as American boys would go to sea and older American seamen would man the ships, life on an American vessel was pleasant and democratic, the work was hard but interesting, the pay in relation to that of other nations was good, the quarters and environment (physical and mental) clean, the food wholesome, and the chance for advancement for youth was entirely up to the individual. There were no blind alleys, no barricades—psychological or otherwise—between the forecastle and the quarter-deck, and the road was open ahead to every ambitious boy and young man who cared enough to win recognition and promotion by hard work, study, and the demonstration of fitness.

It is evident that since American ships became sizable and the United States a leading marine power, there has been no American merchant sailor as a class; i.e., American ships of sizable tonnage have not been manned by native born Americans, and Americans have not been willing to follow the sea all their lives before the mast as have the men of other marine powers, such as the British, Dutch, French, Spanish, and the various Baltic and Scandinavian countries. The early Salem and other Massachusetts ships carried entirely American crews, but generally the men did not remain long in the forecastle. As an illustration of promotion in the old days of merchant sail, Thomas M. Saunders, as a boy or a sort of apprentice forecastle hand, joined Joseph Peabody's ship *George* of 328 tons when she sailed from Salem for India on her first voyage in 1815. It was said of this ship when she left port that everyone aboard was native born, with hardly a man from quarter-deck to forecastle more than twenty-one years of age; that all could read and write and most had studied navigation. The *George* made twenty-one round voyages in the East India trade, with astonishing regularity, and during her career paid more than six hundred thousand dollars into the United States Treasury as import duties. Young Saunders stayed by the ship, which he liked, and served

on her in succession as boy, ordinary seaman, able seaman, third, second, and first mate. After making twelve round voyages on her, he took command as captain. The *George* has a wonderful record as a training ship, for of the boys, youths, and men who sailed in her before the mast during her entire career, forty-five became ship captains, twenty chief mates, and six second mates.

When the Salem ship *Astrea* (owned by Elias H. Derby) went to Manila in 1796-1797 under the command of Captain Prince (she was the first vessel to fly the American flag in that harbor), Nathaniel Bowditch was supercargo aboard and taught all the sailors navigation while at sea. Upon arrival at the Philippine Island port, a British shipmaster asked Captain Prince how he contrived to find his way in the face of the northeast monsoon by dead reckoning, and Prince replied: "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, if he were alive." Later, the Britisher remarked: "There was more knowledge of navigation aboard that Yankee ship than ever there was in all the vessels that have ever floated in Manila Bay."

Capt. George Crowninshield, of Salem, after the War of 1812 and upon his retirement from the sea and business, built for himself a brigantine deep-sea sailing yacht, which he named *Cleopatra's Barge*, and set out to enjoy life and see the world pleurably. At Genoa, the Italian astronomer, Baron von Zack, visited the yacht and in the course of conversation asked the yacht's young sailing master: "In making Gibraltar what was the error in your longitude?" The reply was: "Six miles and our position determined by Lunar observations and chronometers." Von Zack was amazed at the smallness of the error and surprised to know that the navigators of the American yacht knew anything about lunar observations. He asked: "How does it happen that the Commanders of French vessels, with thirty-four schools of Hydrography established in the Kingdom, either know not, or do not wish to know, how to calculate the longitude of their vessels by Lunar distances. . .?" The sailing master of the *Cleopatra's Barge* replied that all Salem seafaring officers and many of the seamen knew how to calculate lunar distances and added: "Why even our Negro cook can do that." The baron thought that this statement was merely an amusing Yankee joke, so Black John, the cook, was sent for and was asked by the baron, "By what method do you calculate Lunar distances?" The Negro promptly answered, "It is immaterial—I use some time the method of Maskelyne, Lyons, or Bowditch," and upon request he went and fetched his books (Bowditch's PRACTICAL NAVIGATOR, Maskelyne's REQUISITE TABLES, Hutton's LOGARITHMS, and the NAUTICAL ALMANACK abridged from the Greenwich Edition). Baron von Zack, in a volume written in French and published in Genoa in 1820, writes of this "amazing experience" of his and tells of his great surprise at hearing a Negro cook, "with a bloody fowl and carving knife in his hands," talk learnedly of navigation and of ascertaining longitude by lunar observations. Continuing, he says: "I saw all the calculations this Negro had made on his passage, of Latitude, Longitude, Apparent Time, etc. He replied to all my questions with admirable precision, not in the phrases of a cook, but in correct nautical language." Captain Crowninshield was evidently surprised at the interest shown by learned men in the knowledge of navigation that they found aboard the brigantine *Cleopatra's Barge* and, while in European waters, was frequently required to inform his visitors that "the greatest part of the seamen aboard this vessel can use the sextant and make nautical calculations." The Europeans found a real democracy aboard the Salem brigantine, such as the French had never attained notwithstanding their bloody revolution and claims; for on *Cleopatra's Barge*, they tell us, they saw splendid discipline with unequaled order and correctness, coupled with intelligence and interest on the part of all aboard the craft down to the humblest sailor and youngest boy. This was a bit of America afloat in 1817, and the men on the Salem brigantine knew not only navigation but also how to sail a ship; for they had beaten the crack frigate *United States* in a run from Cartagena to Port Mahon and on the passage to Genoa had logged 13 knots per hour for over twelve consecutive hours.

From the early days of the republic and during the first part of the nineteenth century when the United States rose to greatness on the seas, there was one outstanding difference in the attitude of Britain and America in regard to their boys. In Britain, a boy was supposed to stay in the class and maintain the social status to which he was born. In the United States, a boy was free to become whatever he was capable of and was willing to make of himself by work. Britain discouraged the education of the poor, or lower, classes; America championed and practiced the policy of universal education for all willing to benefit by it. On a British ship, there was a hard and fast social line drawn between the forecabin and the cabin, but on an American ship the command had the underlying feeling not of an aristocrat but of a man promoted from the ranks because of demonstrated ability; a youngster on an American ship was believed by the command to be attending a practical school, and it was the officers' job to make a good seaman and, if the right stuff was in him, a good officer out of the boy. If there were a few youths on an American merchant ship, classes in seamanship and navigation were common, and during part of the nineteenth century, with the rapid expansion of the American merchant marine, such a large percentage of the boys going to sea became fitted for officers' berths (and ships were afloat which needed them) that, more and more, the forecabin was filled with foreign sailors, as few American boys were willing to go to sea as A.B.'s all their lives.

Very young men gained the command of a ship by sheer merit even as late as Down Easter days. Capt. "Jim" Walls was in only his twentieth year when he took the *John T. Berry* (1,420 tons) around the Horn, and Capt. John Wallace, at the same age, was given the command of the *J. B. Walker* (2,106 tons) in 1894. Capt. Herbert ("Bert") Williams had just reached his majority when he was made master of the *St. Paul* of 1,824 tons, and Capt. James F. ("Jim") Murphy, one of the last of the famous Maine skippers, took command of the *David Brown* in 1872, when he was twenty-two years of age. In 1887 the chief officer of the *Cyrus Wakefield* (2,013 tons), Isaac N. Hibberd, barely twenty-five years of age, being appointed at San Francisco to command the ship, drove her to Liverpool and back in the record time of 8 months and 2 days and made the return passage in only 101 days—which was remarkable sailing.

Toward the end of the nineteenth century, a Canadian-born young man named Richard Quick was given command of the Sewall three-masted schooner *Carrie A. Lane* when in his twenty-fifth year, which was considered remarkable but not as much so as the young man's earlier and later history. Quick joined the schooner *Carrie A. Lane* when a young boy as "an insignificant foremast hand," and he stayed on her, becoming in turn able seaman, second mate, mate, and in 1893 captain of the craft. In 1898 Arthur Sewall "plucked" Richard Quick (when thirty years old) from the deck of the coasting schooner and set him down on the West Coast aboard the 1,475-ton full-rigged ship *Henry Villard* as master, with orders to take her from Puget Sound around Cape Horn to Falmouth, England. Three years later, Captain Quick, when only thirty-three years old, was in command of the big four-masted steel shipentine *Edward Sewall* and to the end of American merchant sail was considered one of the most brilliant, courageous, and resourceful square-rigged skippers under the Stars and Stripes.

However, young captains in Down Easter days and the latter days of square-rigged merchant sail were an exception, and the coveted promotion to a command was usually obtained only after a long, hard service in every grade of a sailor's calling. Moreover, in the last several decades of the era of sail, likely boys stopped going to sea, the demand for skippers decreased, experienced commanders did not retire so early, and the average age of masters materially increased, with but little chance for the promotion of capable mates to a command at a time, however, when a good mate had become far more difficult to find than a good captain.

The Glory of the Yankee Seaman and His Later Withdrawal from the Sea

It is said that there were forty thousand native American merchant seamen at the outbreak of the War of 1812, which war ruined the United States merchant marine for a long term of years and threw the sailors out of jobs. It was said by contemporaries that these "seamen thrown out of work could join the United States Navy or the land forces"; but these men were sailors, and they were at home only on the water. Many of them joined the navy, but the entire naval force of the United States could not take more than an eighth of them. Merchant seamen, who were accustomed to do things and serve under the command of the best shipmasters in the world, quickly got tired of the navy, its dilatory procedure and its officious commanders, its red tape, injustices, and inefficiency. Notwithstanding a very real patriotic urge, it was not long before the navy was shunned by the Yankee salts of the merchant marine, who, however, flocked in numbers to man privateers. These were armed American merchantmen, commanded by merchant skippers, and it was these ships, as in the War of the Revolution, that contributed so largely to the final successful outcome of the War of 1812.

It has been said that Yankee merchant seamen had too independent a temperament to make good men for naval ships, but this accounts for much of their greatness in both peace and war. The Yankee sailor of the period was a self-reliant man. His sea life had been lived in a world of merciless enemies, and he had been taught as a boy that if he was to be free, he had to keep out of the clutches of British press gangs and the buccaneers of many nations; he had to depend upon himself, for his government and its puny Jefferson-suppressed navy could not save him and, for some years back, had shown no disposition to protect him, even if it could have done so. Whereas "the British tar had a man-of-war ever ready to protect him," the Yankee seaman had learned by experience that "his own stout heart and steel nerves and muscles were his only shield and buckler in his rough knocking about the world." Winthrop L. Marvin, in *THE AMERICAN MERCHANT MARINE*, says that it was but natural for the Yankee sailor during the wars with Britain to turn to the much freer, more gainful, but much more perilous life of privateering rather than seek to sign up on a national ship, and he says that "the thoroughgoing Yankee sailor was . . . the *beau idéal* of the ocean rover" and a splendid fighting man, at times maybe a little too forceful and aggressive for matter-of-fact naval discipline, but a perfect privateersman, nevertheless, and at all times and under all conditions a great seaman.

He was a consummate master of his calling, a keen lookout, a clever helmsman, bold and active aloft, of iron-like physique, famed the world around for his vigor and endurance. He had his full share of the Yankee characteristic of thriftiness. He could appreciate the profit-sharing plan which made every

man and boy of a privateer crew an interested partner in the enterprise. He had a native aptitude for firearms, large and small, and a wicked predilection for those ugly tools, the boarding pike and cutlass.

The navy may have thought the Yankee merchant seaman "too damned independent and self-opinionated," but he was free by nature and determined to remain so, and his opinions had been formed by experience in a hard world. He conformed readily to discipline on any merchant ship in which he served in either commerce or privateering; for he could respect his officers, he knew that they knew their business thoroughly, and he had confidence in them and in their plans and orders. It was with men of this caliber that New England boys went to sea in the early years of the republic and during the first part of the nineteenth century, and men of their equal were not to be found in the forecastles of any other ships in the world. Gradually, through the years, Yankee sailors stopped going to sea, deserting first the transatlantic packets and then the ships making longer voyages; they would not mix with "Dagoes" or ignorant toughs nor tolerate sloppiness, filth, or defiance of the unwritten

law of good seamanship, so they quit, and their berths became occupied by foreigners. When this occurred, not only did the spirit of America leave the fore-castle of American ships but also the many seats of training for American boys and youths in practical seamanship passed into oblivion, and the handwriting was on the wall forecasting the dethroning of Columbia as the Queen of the Seas. Henceforth, the crop of young men taking to the sea each year became smaller and smaller, the fore-castles were shunned by self-respecting Yankees (both men and boys), the gamble of the sea had gone, and wages became a mere pittance. American boys looked to a much pleasanter, safer, and brighter future in shore jobs, and it was the West rather than the sea that beckoned to ambitious, adventuresome, and promising youths. As the caliber of fore-castle hands lowered and the character of the men shipped before the mast declined, a line was more and more firmly drawn between the crew forward and the officers aft until, during much of the Down Easter period and throughout the last decades of the era of sail (both wood and steel), there was nothing in common and generally enmity between the fore-castle crew and the quarter-deck. A ship was often operated by hands that were browbeaten and intimidated as well as incompetent. After the gamut of steadily lowering grades of white men had been exhausted, Asiatics, orientals, Pacific islanders, etc., were more and more constituting the crews of windjammers when the once glorious era of merchant sail ignominiously drew to a close and the surviving square-riggers were sent to the bone yard.

*The Officers and Crew of a Down Easter or Cape Horner
Bully Captains, Bucko Mates, and Riffraff Crews*

The captains of the Yankee or Down East square-riggers were called "men of iron" at a time when iron was the hardest metal known; yet authorities of the period generally admitted that "there were no finer seamen afloat" and that "no seafaring men had as splendid records in getting their vessels through safe, fast, and cheaply." They were quite frequently branded as "hard citizens," and although the "blue-nose" Nova Scotian skipper and mate might take the lead for extreme "hardness" and perhaps patterned themselves after the British for "cruel arbitrariness" and "Lord-God-Almighty-ness," it was the Down East skipper who, in all trades in which he was engaged, was given the palm for driving ships and men, for enforcing strict and inflexible discipline, and for deeming results of far more importance than the comfort, well-being, or even the safety of "the men for'ard." However, Down East skippers have been much maligned by marine writers, and even a British historian has commented on the fact that according to American writers on nautical matters, "their [own] captains were all bullies, their mates buckoes, whilst the seamen were a mixture of all the most degraded, down-trodden and undesirable aliens that ever trod a deck." Basil Lubbock, the British writer on the history of merchant sailing vessels, says in his work on *THE DOWN EASTERS—AMERICAN DEEP-WATER SAILING SHIPS, 1869-1929* (written in 1929 and dedicated to "All those Merchant Adventurers and Master Mariners, Shipwrights and Sawyers and Shell-backs and other Seafaring Folk who built up America's Mighty Sailing Marine"):

When one leaves highly coloured fiction for honest fact, one invariably finds that there is not so much "blood and thunder" in this world as the word-artist would have one imagine. Thus the American Merchant Marine was not entirely composed of bullies and buckoes, and the American

master mariner was more often a bully specimen of manhood rather than a bully of those under him. He was no "Nancy," it is true, and was far from suffering fools gladly, neither would he put up with the incompetent nor the slacker, but he was a prime sailorman whose equal it would be hard to find

nowadays amongst those who "go deep-water." And if he was a strict disciplinarian, this is not surprising when one remembers that he almost invariably came from the old Puritan stock and inherited

much of that stern stoicism and iron sense of duty, which together made up the corner-stone of the great American nation.

The masters of Down Easters were Maine men, and with Anglo-Saxon surnames, a large percentage of them had Biblical Christian names. Whereas Bath, Maine, "The City of Ships," was the leading wood shipbuilding center in the world during the Down Easter period, such little Maine coastal towns as Searsport and Thomaston seemed to provide most of the skippers. In 1889, Searsport, with a total population of about two thousand, had seventy-seven of its citizens in command of American sailing ships, and thirty-three of them were skippers of full-rigged Cape Horners. During the last half of the century, no fewer than fourteen Captain Pendletons were among the Searsport masters of important square-riggers, and eleven had Biblical Christian names. Thomaston, Maine, gave itself the proud title of "the town of a hundred captains," and of this number one-quarter were members of the Watts family. Among the American captains who made history with their ships in the Cape Horn trade were well-born and highly educated men; they were drivers and strict disciplinarians, but would allow no bucko methods on board their vessels. There were some masters and mates who succeeded in getting work out of an indifferent or vicious crew without the use of belaying-pins or knuckle-dusters. From Babcock of the *Young America* and Limeburner of the *Great Republic*, known as skippers in the Cape Horn trade who would allow no rough handling of crews aboard their ships, on down through the years, there were masters of Cape Horners who had a well-known reputation for the good treatment of their men. Of the later Down Easters, such skippers as Gates of the *S. P. Hitchcock*, Banfield of the *St. James*, and Lermond of the *Joseph B. Thomas* were particularly well known among a large number of masters of the same type for their refusal to permit any bucko methods, hazing, or rough-house work on their ships. "There was no scrimmaging on the maindeck aboard their ships, no belaying-pin soup on dark nights, no booting off the yards, no lurid curses or savage blasphemies. . . ."

The most humane skippers in the world were forced to become hard in the management of their crews, but this was due to the type of men obtainable for the forecandle and the human "outpourings of hell" dumped upon them by sailors' boardinghouse racketeers. Without hardness, a master would have lost command of his ship. A marine writer has said that the skippers and mates of Down Easters were "nigger drivers," "hard nuts," and "hard-boiled" in every sense of the word. In such a life and with the crews that were obtainable, there were times when they had to be. Undoubtedly, on occasions, discipline was carried too far, although usually there was strong provocation. Some crews could be ruled only by sheer physical force and through the instilling of fear, but whether the forecandle hands were belligerently vicious, subtle, loafing "sea lawyers" or lazy and cowardly greenhorns, most of the successful skippers of Cape Horners drove their men "with that fierce mercilessness with which they drove their ships and with a nerve which only a sea-training can produce." We are told that because of the conditions existing and the steps that were taken to cope with them, the Down East skippers, in the performance of their duties, were "as cruel as the Iroquois and as hard as so much flint."

Bullying skippers and recalcitrant crews were not peculiar to the era of Down Easters and their voyages around the Horn. In the early days of the extreme clippers, when the ships were built primarily for speed and heavily manned, there are many records of bloodshed and mutiny. On the first voyage of the *Flying Cloud* in 1851, when she made a phenomenal run from New York to San Francisco in 89 days and 211½ hours, Captain Cressy had a tumultuous time with the forecandle crowd; a mutiny broke out, and he put several men in irons. There was a mutiny on the clipper *N. B. Palmer* in 1852. The first mate was shot, and Captain Low put into Valparaiso and sent the mutineers home to be tried for attempted murder on the high seas. While in the South American port, some twenty men deserted the

ship, branding her as a "Hell ship," very much as Down Easters in the seventies and eighties were so described.

Capt. "Bully" Waterman was a notorious driving skipper, and one of the worst cases on record of continual fighting between the forecabin and the quarter-deck occurred on the maiden passage of the clipper ship *Challenge*, which sailed from New York in July 1851 for the Golden Gate. Captain Waterman erred by going to sea on a most important voyage with a crew of the very lowest order, "with hardly a sailor man among them," which had been dumped (mostly blind drunk or doped) on the ship's deck by the boardinghouse racketeers just before the sailing hour. Waterman boasted that he would soon whip the men into shape and make a crew out of them, but evidently they did not have "the makings." Four met their death from falls and drowning, and four died from dysentery on the passage. When the ship reached San Francisco, cheap vulture lawyers, who fed on the scum of the Barbary Coast and yellow journals, came near to causing a lynching party; but the vigilantes, out in strength, saved Captain Waterman's life, and the courts absolved the captain and officers of the ship of all blame for the death of the men or for inhuman treatment. On one occasion during the passage, the crew set upon the chief mate, stabbed him, beat, kicked and jumped on him, and only robust Captain Waterman's quick and effective action in knocking the attackers senseless with a couple of belaying-pins saved the mate's life. The story that Captain Waterman was a crack pistol shot and used to enjoy aiming at the sailors on the yards aloft was a yarn that reached the *Challenge* from the *Sea Witch*. The eventful maiden passage of the *Challenge*, with the mob scenes in San Francisco, the vicious untrue publicity, and the events preceding court action and exoneration, drove Captain Waterman from the sea and gave the *Challenge*, which was a wonderful, fast ship, such a bad name that her unduly sensitive owners lost their pride in her.

We read in a history of the clippers engaged in around-the-Horn trade in 1851-1853:

The crews of the American ships sailing from our two Eastern ports which control the California trade are largely composed of the rowdy, knavish class. Their baggage is on their backs and their purse is every man's pocket. These vagabonds step,

or are carried, drunk or drugged—shanghai'd oft-times—on board an outgoing ship; then hey for California. To maintain discipline and sail their vessels, American shipmasters are often compelled to adopt harsh and cruel measures.

Capt. Arthur H. Clark, writing of the masters and crews of American clipper ships in the fifties, refers to the reputation that the New England skippers had of severity with their crews; but he says that considering the kind of human beings that they had to work with, they could not be anything but severe men and still retain command of their ships. In 1910, Captain Clark, in *THE CLIPPER SHIP ERA*, wrote:

Taken as a class, American sea captains and mates half a century ago were perhaps the finest body of real sailors that the world has ever seen, and by this is meant captains and officers who had themselves sailed before the mast. They enforced their authority by sheer power of character and will against overwhelming odds of brute force, often among cut-throats and desperadoes. They were the first to establish discipline in the merchant service, and their ships were the envy and despair of merchants and captains of other nations. Intrepid and self-reliant sailors, they are justly entitled to the gratitude of mankind. No doubt there were instances of unnecessary severity on board the American clipper ships; they were exceptional, and the provocation was great; but it would be difficult to cite a case of a sailor being ill-used who knew and performed the duties for which he had shipped, for captains and

officers appreciated the value of good seamen, and took the best care of them.

The abuses from which sailors in those days suffered, were not when at sea or on board ship. It was the harpies of the land who lay in wait like vultures, to pollute and destroy their bodies and souls—male and female land-sharks, who would plunder and rob a sailor of his pay and his three months' advance, and then turn him adrift without money or clothes. . . . These vice-hardened men and women of various nationalities were permitted to work their abominable trade unmolested, almost within the shadow of church spires and Courts of Justice in the chief seaports of the United States.

* * * *

Those well-intentioned philanthropists who had an idea that sailors were being ill-treated on board American ships, and who wasted sympathy upon a

class of men most of whom required severe discipline, might have been better employed had they exerted their energies toward purging the seaports of the country of the dens of vice and gangs of

robbers that infested them. . . . As a matter of fact, the lives, limbs, and morals of sailors at that period were very much safer at sea than they were on land.

The extreme clipper ship *White Swallow* of 1,192 tons, built at Medford, Mass., in early 1853, made a westward Cape Horn passage in the winter of 1865-1866 from New York to California under command of Capt. Elijah E. Knowles. Following arrival at San Francisco on January 28, 1866, a sensation developed when six of the crew, charged with being the ringleaders in a mutiny at sea, were arrested on the complaint of Captain Knowles. It was claimed by the defendants that the ship had left New York with her rigging in poor condition and that the men who had shipped as sailors were required to do a lot of unwarranted and "unnecessarily hard and particularly dangerous work" that should properly have been done by riggers in port. It was asserted that the crew was "forced to work by brutal beatings with brass knuckles, belaying-pins and the like"; that men were put over the ship's side on stagings while the clipper was sailing fast and rolling and pitching heavily in a bad sea, with the result that two were drowned. When the men decided that they could stand the cruel and heartless oppression no longer and felt that they had to act for the protection of their lives, they engineered a coup, seized Captain Knowles and the mates, confiscated all weapons, and put the officers in irons for three days. The captain was freed when deemed necessary so that he could take observations or give orders for the working of the ship, which orders evidently were always obeyed. A written agreement was then entered into between the mutinous crew and the officers in irons, which was drawn up in due form with explicit language and signed by all. The crew was "absolved of blame or intention to do harm or damage," and the officers, one and all, covenanted to treat the crew well and give it no unnecessary or extra hazardous work, with a watch alternately on and off, just so far as was possible and safety permitted. The officers, following the signing of the document, were freed, and the crew (as well as the officers) acted well for the balance of the passage. As soon as Captain Knowles got ashore, he repudiated all promises that, he said, he may have made the men under duress and demanded vengeance, with drastic punishment for the ringleaders. However, the trial, which lasted a week, substantiated claims made by the men in regard to severe treatment, brutal beatings, and being assigned to seemingly unnecessary, hazardous work. The passengers testified in support of the crew's claims, and the officers admitted the correctness of the crew's charges. After the judge had summed up in favor of the defendants, a verdict was given in their favor, and they were freed.

This *White Swallow* case, unique of its kind, was heard around the world and created a sensation in every deep-sea port. At the time, it was thought in marine circles that it would have a tremendous effect upon the treatment of sailors by inhuman bully captains and bucko mates, and it probably did; for no more mutinies of this nature were staged, and it is surmised that the provocation was lessened and that the officers became more cautious.

In the early fifties, the clippers engaged in the Cape Horn trade found it difficult to get good crews because of the Gold Rush and the low order of adventurers that sought to get to California without paying passage money. In the post-clipper ship era, the Down Easters or Cape Horn square-riggers, as far as their crews were concerned, were up against the same difficulties that had been encountered by transatlantic ocean packets in the fifties and sixties. As time went on, the real "salts," who had sailed the seas from their boyhood up, were harder and harder to find. The Irish Liverpool "packet rats" and the "Bloody Forty" of the *Columbia* and *Dreadnought* days, with all their viciousness (not to mention the "real deep-water sailors"—British "lime-juicers" and foreign A.B.'s), knew more about the sailing of a vessel and were capable of a far greater measure of real, practical usefulness than the "gutter scrapings and down-and-outers" that generally occupied the bunks in the forecabin of a Yankee Down Easter.

There was published in San Francisco during the nineties a much-discussed RED RECORD, which was a supplement to the COAST SEAMEN'S JOURNAL, the official organ of the National Seamen's Union of America. The record covered the period from September 1888 to November 1895 and reported in some detail sixty-four cases of claimed cruelty and murder on the high seas in the American Cape Horn fleet. This publication was naturally partisan and prejudiced, and there is generally a wide difference between charges and facts, but it made lurid reading. When cases were pushed and came to court, the verdict, however, was invariably, "Case dismissed for lack of evidence" or else on the ground of "justifiable discipline." Indeed, the caliber of the crews became well known to be such that the magistrates were convinced that an officer of an American deep-water sailing ship had to be stern, tough, and at times "quite rough" in order to maintain discipline and carry on the ship's work. It is of interest that the RED RECORD reports the disappearance of many of the mates from ships (after passages on which it was claimed that the crew was badly abused and that there was bloodshed) and that they could not be located for the serving of papers; however, whenever a mate did stand trial, he was exonerated or the case dismissed as "not proven" or the disciplinary punishment justified.

Some Down Easters got the reputation of being "blood boats" or "Hell ships" as a result of a few voyages under a certain captain or even a single voyage, and the stigma stuck to the ship throughout the balance of her career. When the Down Easter *Gatherer* (1,509 tons) of Bath, Maine, built in 1874, is mentioned, she is quite generally referred to as "the Bloody *Gatherer*"—and all because the ship was unfortunate enough to have Capt. John Sparks as master and Charles Watts as chief mate on a passage from Antwerp to Wilmington, Calif., in 1881. On other voyages, the *Gatherer* had a record as a "good ship for forecandle hands," and her masters, Joseph A. and George Thomson and J. S. Lowell, were known as able skippers, strict disciplinarians, but just and humane men. The one passage of the ship under Captain Sparks, however, gave the vessel a bad name that has never been allowed to die—as if it were the ship herself and not her brutal officers that were to blame. Sensational papers referred to the "Hell ship" *Gatherer*, and she became generally known as "the Bloody *Gatherer*" and, as far as one passage is concerned, with evident cause. It seems to have been proved that Mate "Charlie" Watts was very much of a brute and that Captain Sparks acquiesced in his chief mate's inhuman treatment of the crew. Watts, it would seem, killed one seaman; while two others were reported to have jumped overboard to their deaths rather than endure further ill treatment. It was also asserted that Watts beat a boy so badly about the head and face that he became blind. The mate went into hiding when the ship made port and, under an assumed name, shipped on the *Imperial* at San Francisco for Liverpool; but upon arrival in England, his identity became known, and he was returned to the United States, where he was tried and sentenced to six years' imprisonment. Captain Sparks was promptly relieved of his command by the owners upon the ship's arrival at Wilmington, Calif., but he escaped punishment, "there being no evidence that he in person actually committed any of the atrocities." Captain Sparks later (1884) found employment as master of the Southard ship *Red Cross* of Richmond, Maine, a Cape Horn of 1,236 tons; but on a passage to Liverpool, he committed suicide by jumping overboard.

Many Yankee captains prided themselves on "rarely interfering with the mates' working of the ship" and "seldom, if ever," condescending to "man-handle the crew" themselves. An aloofness of this sort was deemed by many masters to add to their dignity as "the supreme command." However, the captain who did not take a hand personally in "the training of the crew," yet generally gave every encouragement to his bucko officers, at times inspired and even outlined inhuman procedure and then took a queer sort of pride in the possession of a reputation for driving and cruelly hounding and abusing men. One British writer has said, "It is a curious fact that the skipper of a noted Yankee slaughter-house or blood-boat was often the center of admiration and envy ashore, and he would boast of his exploits with the graphic power of illustration which is such a feature of the American tongue."

It is well to discriminate, however, between facts and yarns. There is a story told of Capt. "Jim" Murphy, who commanded the *Shenandoah* in the nineties, which, emanating from Britain, says that "the notorious Captain Shotgun Murphy" of the big wood Sewall four-master, "when coming out of 'Frisco, bound for Liverpool, . . . finding everything unusually quiet and peaceful at the start, . . . called his mates aft and addressed them as follows: 'What's the matter aboard this here ship? Have I got a couple of old women for mates? Here, we've been out of 'Frisco more'n a week and I ain't seen any blood running in the scuppers yet.'" Capt. James F. Murphy, born at Bath, Maine, in 1850, was son, brother, and father of shipmasters. He went to sea at thirteen and at twenty-two was captain of a ship. He was not that sort of skipper, but he was a great bluffer and yarner of Irish stock, who loved to pull the British lion's tail, pose as a Yankee bully captain to the British when ashore, and tell of his exploits and toughness. Murphy occasionally put on a show when making or leaving port for the benefit of visitors who were traveling a short distance on a sailing ship, and he and his wife, who was an appreciative audience, would laugh later at "the awful old pirate that scared the crew almost to death." Captain Murphy was a humane, just captain, a driver and strict disciplinarian, but never brutal, and he would not tolerate any bucko-mate tactics on his ship.

It has been said that the skipper of a Down Easter, in order to survive and operate his ship, was compelled, because of the crew with which he had to work, to develop "he-man" qualities and appear much harder and tougher than he really was. Because skippers had to be drivers and "bosses" in every sense of the word if they were to get anywhere and make respectable passages, most of the earnest, energetic, "bossy" captains grew to be described as "bully captains," which suggests the dominating, oppressive, and quarrelsome. Most of the Down East skippers left it to their mates to do "the dirty work" in "nigger-handling" and intimidating their crew; in fact, they often encouraged the mates in acts which they knew of, but seldom saw. But with a Bible in one hand, a gun in the other, and alternating between oaths and biblical quotations, the Yankee pseudo-Puritan skipper—with courage and seamanship unquestioned—was occasionally seen, and such a one was both feared and respected by fore-castle hands.

There is much in the literature of the sea that has been somewhat emotionally written to describe the toughness and brutality of the Yankee bully captain and bucko mate, but for sheer, forceful, direct-to-the-point eloquence, with much said in a few words, it is difficult to imagine anything more efficient and potent than the customary brief "speech" made by the skipper of a Down Easter to "all hands" at the beginning of a voyage. A United States Government official is authority for the following sample:

Men! My name's Captain ————. I'm master of this ship and I want to start square with you. We've got a long voyage before us and there's plenty of work to be done. I want you to understand I'm great on discipline, and you can have hell or heaven on board, just as you please. All you've got to attend to is to do your duty and obey orders: that's what you shipped for, and that's what you're paid for. If you do your duty, it will be all right: if you don't, it will be all wrong.

The first man that disobeys my orders I'll put

daylight through him—quick. . . . If any of you men try to make trouble aboard of this ship I'll make it ———— hot for you. I'll make mincemeat of some of you quicker'n hell'd scorch a feather!

I hear that some of you are from the ————, where you gave much trouble. Well, this is not the ————, and you've got bloody Jock ———— to deal with. Now you know who I am, and what you've got to expect. Go forward!

Morgan Robertson has given to us a record of another real Down East skipper's "Begin the Voyage" speech:

The crew mustered aft and listened to a forceful speech by Captain ————, delivered in quick, incisive epigrams, to the effect that if any man aboard his ship—whether he believed himself shipped or shanghaied, a sailor, a priest, a policeman, or a dry-nurse—showed the slightest hesita-

tion at obeying orders, or the slightest resentment at what was said to him, he would be punished with fists, brass-knuckles, belaying-pins or handspikes—the officers were there for that purpose—and if he persisted, he would be shot like a mad dog. They could go forward.

The captain of a Down East Cape Horner was of no use unless, with his nerve and "guts," he had supreme self-confidence and was ready to take his ship anywhere, at any time, in any weather, and with any kind of crew—riffraff or gutter-bums; Americans, lime-juicers, Dutchmen, Dagoes, or Souwegians; and (as the English expressed it) "the rakin's and scrapin's o' hell, Bedlam and Newgate." Any kind of human being of any nationality could be found in the forecabin of a Down Easter ("from a stiff-bristled pug-ugly to a spineless cur; from a prime true-blue to a useless hobo"), for the crimps, unscrupulous boardinghouse bosses, and professional shanghaiers, with their jackals and lawless desperadoes (and nineteenth century press-gang operators and dopesters), were not particular as to the status or the fitness of the unfortunates whom they literally "dumped" upon a Cape Horner the night before sailing. There is no exaggeration in spirit and substance in the words Captain Bone, in his writings, put into the mouth of Skipper "Bully" Nathan, captain of a Down Easter: "Give me grave-diggers or organ-grinders, boys, if ye kyant get sailormen. Anything with two hands an' feet. I guess I'm Jan K. Nathan, and they'll be sailormen or 'stiffs' before we reach aout [port]!"

Capt. Felix Riesenbergh, who from his own personal experience certainly should know what he is talking about, speaks of the bucko mate of the Down Easter as a man, with "belaying-pins in his short boots and knuckle-dusters on his fists," who "broke men and killed them on the cruel blue sea without the aid of fire." Basil Lubbock, British marine historian, writing of the Yankee deep-water mate in the Cape Horn trade, says:

He was a distinct American type, a virile type, in the same category and with much the same outlook on life as those frontiersmen, the cowboy and the miner and the lumberman. He was also a product of the times, obeying that law called "the survival of the fittest."

* * * *

When a nation is in the making men of great force of character are required, men ready to fight Nature and drive their own kind to the limits of human endurance.

On land such men were the pioneers of civilisation, the trail breakers, the cattle foreman, the lumber boss, and the master of the railway gang; at sea they were the skippers and the mates of deep-water ships.

Ashore when such men broke the law they became desperadoes, such as Slade of the Pony Express and Soapy Smith of the Skagway Trail. At sea a ship's officers had almost unlimited power in the old days over their men, and it required very little skill to sail a 2000-ton ship through not only the laws and regulations of the United States, but the sixth commandment itself. And this freedom from restraint, allied to a superabundance of vital force, and a soured or savage temper, produced [at times] by over-indulgence in bad drink, turned many a decent sailorman into a bully skipper or a bucko mate.

* * * *

The psychology of the bucko mate was much akin to that of the Wild West desperado of the period. Each was more or less the "fittest survivor" in a life that gave no quarter to the weakling, and a certain kind and measure of inborn grit and nerve accounted for his position of physical leadership and domination over his fellows. Lubbock says: "Yet with great self-control and coolness in moments of great danger, the bucko deliberately abandoned all self-control in his methods of discipline and drove his watch in a white heat of berserker temper and vicious spite—the last very often the result of nerves, irritated and tried beyond all bearing." And again, "There were various factors which encouraged the bucko in his methods.

The sea undoubtedly makes character with a heavier tool than does the land. Old Ocean uses the adze or the axe where Mother Earth uses the smoothing plane. But the man who backs the blizzard or the sea in its fury has often found that his greatest testing has come from his own species. It takes character to blaze a difficult trail successfully, just as it takes character to handle a ship in a hurricane, or steer one through a Cape Horn snorter; but, more than these, it takes character to hold one's own in the wilds where no law runs but the law of the six-shooter, or on the deck of a windjammer, where a knife thrown in the dark, or a block dropped from aloft, may mean a sudden exit from this world.

* * * *

The cold, steely nerve of the Western gun-man was equally a necessary attribute of the bucko officer. Down East mates for the most part believed that it was necessary to instil terror into all foremast hands, and they usually succeeded in doing this without straining themselves.

* * * *

There are two distinct grades of humans, positive and negative: the bucko mate was aggressively positive, and he was often a cruel, hard taskmaster, because his own struggle to rise out of the ruck had been so cruel hard that it had toughened the fibre of his nature and steeled his heart. . . .

One of these was a queer pride in proving himself a tough citizen—a man-handler—an ogre who knew no mercy. Another was more laudable—the necessity of the ship and the dominating thought which put her first in everything and made increasing toil and hard knocks and bitter recriminations all part of the scheme.”

The bucko was the direct result of the extraordinarily hard conditions of the life. He usually had to fight his way up from the forecandle to the quarter-deck through the various grades of ship's boy, rayneck, seaman, and boatswain. It is a curious fact that in the later years of the Down Easters, it was very rare to find a man risen from the ranks who could maintain discipline at sea without a bludgeon or a belaying-pin. The bucko had usually neither sympathy nor insight. He had no interest in his men over and above that of a slave-driver. The Westerner used to say, "No good Indian but a dead Indian." The bucko looked at his men from the same standpoint—as malingerers out to cheat the ship; as criminals out to defeat him at all costs; as inefficient to be made useful and productive by sheer force of will and strength of fists. The bucko mate was not, as has been suggested, "the modern counterpart of the buccaneer and the pirate." He was a hard-working and faithful servant of the owners. He never let them down. If he adopted the methods of the Cave Man, it was chiefly the fault of his education and upbringing; it was not for his selfish gain, and his owners and captains were as responsible as he was for his hard reputation.

Lubbock, writing further on the operation of the famed Down Easters, has said:

The captain had to make good passages, and the officers had to carry out heavy work in the worst weather with material that was composed of the dregs of the world's seafaring population, with a sprinkling of criminals and landmen thrown in. And as every sailorman knows, sail-carrying means man-driving, unless the foremast complement is both efficient in knowledge and sufficient in numbers [generally far from being the case]. When

one remembers that the bucko officers had been ground in the mill themselves and hardened in the hardest school in the world, can one wonder at the iron fist? Of course, the iron fist frequently went too far, as, for instance, when it was exchanged for an iron belaying-pin or that instrument of torture known as the "persuader"—a stick about a yard long with a sharp nail protruding half an inch from its end.

By no stretch of the imagination can the operation of the Down Easters, as it is generally pictured, be considered humane or worthy, in a moral sense, of a great nation; but it should be borne in mind that the sailors themselves were generally a tough and drunken bunch of "riffraff" rather than men. There was a time when the chief mates of Cape Horners sought to mix up nationalities in their crews when engaging (generally through boardinghouse crimps) or shanghaiing their men, using at times for this purpose thugs like "Shanghai" Brown, "Red" Jackson, and "Three-finger" Daly and their lawless jackals.

The American officers on Down Easters prided themselves on being able to handle a tough foremast crowd, and many of them were likely to revel in a "rough-house." The following statement was made by a prominent mate of a Down Easter: "A man simply has to be hard and rough, going deep water in a square-rigger. When you get a tough or know-nothing bunch for'ard, as usually happens, you have to handle them rough or you'd never work the ship." This expresses the general view as freely voiced and acted upon by the mates of Yankee Cape Horners. What humanity was expressed in the dealings of officers with crew was inspired partly by the law, which was likely to prove troublesome in cases of death or extreme injury, but primarily by the necessity of keeping men physically fit for work. As one skipper aptly put it, "Never strike a man with a belaying-pin or hand-spike near the temple, and when you kick him, let him have it on the legs or above the short ribs. It's not necessary and it's unwise to disable a man, particularly when sailing with a short crew." Yet many skippers were professedly religious men; the Bible was conspicuous at times, and even Bible texts were in evidence.

The latter part of the nineteenth century saw many queer and semi-fanatical outward expressions of what was termed "religion." For a time, the evangelical spirit ran riot, but the hearts and lives of many of the militant reformers showed little of the spirit, unselfishness,

and humanity of Christ, and many a veritable devil glibly quoted scripture and professed to be "one of the elect." Tracts were handed out all over the world offering "salvation" freely through the claimed "one and only" method—one which was restricted in its conception and based on some narrow and bigoted organized religious interpretation and dogmatized belief. Texts of scripture and of supposedly moral uplift were pasted and printed in the most unlikely places, and for many years it was not uncommon for "pious" owners or even "religious" hard-nut captains (acting probably under the influence of wife, home, and church) to emblazon the break of the poop, the boat skids, the side of a deckhouse, storage bins, or spare spars with texts and mottoes. One ship, which had painted in large letters across her boat skids the words, "Hope on; hope ever," signed on a new mate, a perfect specimen of the Down East "steely-eyed, close-lipped, lean, sinewy" bucko, with the sardonic humor and tongue (quick to sarcasm and ridicule) more dreaded at times by foremast hands than a fist or belaying-pin. The story goes that the newcomer gave the text a contemptuous glance, sent for a pot of paint, and neatly effaced the last letter of each of the two "hopes." He then called all hands and said: "That thar motto, I guess, war a sur' enough good 'un, but yew kin neow blink yew'r gol-darned eyes on a better—an' remember, when I say 'Hop!' I mean 'Hop' and you . . . will hop lively."

An anecdote tells of a new mate from Maine on a Down East Cape Horner that sailed with a hard-driving but scripture-quoting and pseudo-religious skipper. "At eight bells on the first Sunday morning out, when both watches were still on deck, Mister Mate called them together and, holding up a board on which was painted the word 'SUNDAY,' said: 'All o' you take a good look at this 'ere board, for it's all the Sunday you'll ever see aboard this 'ere ship this voyage. Now, then, come along for'ard and we'll get ahead with that chafing gear.' "

An old, much-quoted jingle, humorously referring to the Sabbath day of rest at sea on a Down Easter, ran:

Six days shalt thou labor and do all that thou art able,
But on the seventh, holy stone the deck and scour
the cable.

Religion and humanity did not seem to mix on square-rigged around-the-Horn Down Easters, and this fact was occasionally noticeable ashore in the "counting office" and when making business deals. The days for ships in the seventies, eighties, and nineties were hard; the service was severe and not for weaklings. It is said that the hardest of all were the bullying and "nigger-driving" skippers, with their tough bucko mates; yet the men in command merely reflected to a great degree the hardness and avariciousness of their bosses—the managers or brokers of the shipowners.

The Maine boy who persisted in going to sea long after the forecabin became no fit place to live for a decently brought-up youngster, with "salt water in his blood," had the stuff in him to make a good sailor. It took time under the conditions existing in the last half of the nineteenth century, but when such a boy persisted (notwithstanding abuse, hard knocks, and a hellish atmosphere in the crew's quarters), got his papers, and graduated to very different accommodations and environment aft, he had the knowledge as well as the determination to make a good officer. He had been "through the mill" and henceforth had the characteristics of one who had fought and won. During the last several decades of the era of American merchant sail, such young men made the best mates and, later, the most competent and successful captains. The Yankee mate for years had the reputation the world over of being the most competent mate and the best "shipkeeper" afloat. This is well expressed in the following extract from the verses of C. Fox Smith:

And if you go further and pause to admire
A ship that's as neat as your heart could desire,
As smart as a frigate aloft and alow
Her brasswork like gold and her planking like snow

* * * * *
Look round for a mate by whose twang it is plain
That his home port is somewhere 'round Boston
or Maine.

Captain Riesenbergh, in *UNDER SAIL*, gives a basic picture of authority at sea, its application, and the reasons therefor as he saw them aboard the Bath-built wood Down Easter *A. J. Fuller* of 1,849 tons gross, 1,782 tons net register, and 2,700 tons deadweight capacity (length 229 ft., beam 41½ ft.)—a medium-sized Cape Horner built in 1881:

Given a ship's company barely strong enough to handle a two thousand five hundred ton three-skysail yarder, even had they all been seasoned able seamen, our officers had to contend with a crew over half of which rated below that of the "ordinary" classification of seamanship, thick skinned clodhoppers, all thumbs on a dark night, and for many weeks after leaving port, as useless as so much living ballast. The kicking and moulding into form of this conglomerate mass of deep sea flotsam, gathered for the ship by the boarding masters, and duly signed on the ship's articles as A.B., called for all but superhuman efforts. . . . To work a ship of the proportions of the *Fuller*, with seventeen hands forward, called for man driving without thought of anything but the work required. . . . Mixed with our real sailors were the worthless (so far as sea lore went) scrapings of the waterfront. Shipped by the boarding masters for the benefit of their three months' "advance," and furnished for sea with rotten kits of dunnage, as unreliable and unfitted for the work as the poor unfortunate dubs

who were forced by an unkind fate to wear them.

On the other hand, the real sailor men of the crew were valued accordingly, and I can hardly remember an instance where either one of the mates singled out for abuse those men who had shipped as A.B. and were so in fact. . . . The humble sailor man as well as the rest of the human race is prone to take things as easy as the law of the craft on which he sails will allow. . . . Young officers at times are inclined to be a bit "easy" with men, thinking it will result in more willingness. The more seasoned members of the cloth, men who have sailed as merchant officers for many years, realize that the maintenance of discipline aboard ship is only possible under a rule of autocratic severity, demanding instant obedience to orders and quick punishment for the first departure from the iron bonds. This is as necessary as life itself. The least hesitation, the slightest possibility of argument, when ordering men to places of danger or extreme difficulty, would soon result in disaster.

San Francisco had a bad reputation among the ports of the world long after the Gold Rush and even when its wheat shipping boom was waning. The crimps held and used vicious power and used either snake or strong arm methods to victimize forecastle hands and collect blood money from the command of ships. Doped drinks and sandbags were not the only means employed by the lawless, collecting, and shanghaiing element that worked for the boardinghouse bosses and crimps. On one occasion, a minister was kidnapped on Market Street, knocked unconscious, disrobed, and delivered like a sack of potatoes onto the deck of a Down Easter just before she sailed. The minister's "gift of gab," when he did recover his faculties, did not help him any, but reacted to his detriment when he came in contact with a rip-snorting, punching bucko mate. The minister made the voyage as a hard-driven deck hand and evidently gained much experience, while suffering much abuse. In 1896 the apprentices of the 2,500-ton bald-headed British shipentine *Springburn* won undying renown in San Francisco (and the news of their exploits reached the ports of the world and was relished by both forecastle and quarter-deck) by successfully shanghaiing out of San Francisco the notoriously vicious and lawless "Shanghai" Brown and giving him a large dose of his own medicine, "with trimmings," and all the "joys" of a winter passage around the Horn—driven, hounded, and abused in real bucko fashion.

During the Napoleonic Wars and kindred eras of great naval activity, the British press gang inaugurated a vicious practice, which became general, of kidnapping by force and pressing sailors of the merchant marine (and strong, likely looking landlubbers) to serve a long session in a naval frigate or ship of the line. In the last days of sail on the high seas, the happy-go-lucky shellback often suffered a like fate and was pressed onto a merchantman through the machinations of the crimp or boardinghouse master and his lawless associates—employees or partners. In certain big sailing ship ports, captains had to pay "blood money" (so much per head) to the crimps in order to complete their complement, and in order to supply the men, a crimp and his runners employed every artifice known to man, from drugged rum to sandbagging. The crimp was a recognized institution all over the world. He was the steely nerved and cold-blooded labor supply merchant, and in days when lawlessness around the water front was rampant, he would "stick at nothing" to attain any objective that would

yield him a few dollars or add to his power and prestige. The counterparts of San Francisco's notorious and lawless gangsters in the mart for seafaring hands were found in most, if not all, of the large ports of the world.

Notwithstanding the unquestioned and most deplorably low quality—as regards both ability and moral character—of fore-castle hands during Down Easter days, the firmness and dignity of most captains, coupled with their unsurpassed knowledge of a ship and the sea and their demonstrated skill in both navigation and seamanship, usually won (even if begrudgingly) the respect of the crew, and life at sea was not the continual conflict between the fore-castle and quarter-deck that fundamental conditions would portend. The vast majority of Down Easters, after a few days of "shake-down," the sobering-up of the fore-castle hands, and the practical inauguration and demonstration of discipline, became "good ships," with no evident brutality, unreasonableness, unwarranted punishment, or injustice on the part of the officers, and life on board became mentally placid—at least on the surface. That such physical and psychological conditions were common on American ships is proved by the fact that so many Yankee skippers took their wives with them to sea and brought up their families on board ship. This would never have been done if the vessels were "blood boats" or "Hell ships," or if the conditions of brutality were in effect on board that the vast mass of reading matter on bully captains, bucko mates, and tough, morally decadent shellbacks would lead one to suppose. The presence of a woman on a ship could be expected to have a humanizing influence, but when little children were aboard, playing and wandering around the ship with perfect safety, conditions could not have been as bad as they are painted. In the early days, a captain's wife at sea was a sort of ship's mother, and she watched over the health and welfare of all on board, particularly of the boys. If this relationship between the crew and "the old man's wife" was impossible after mid-century and in clipper and Down Easter days, yet her human interest was in evidence, generally felt forward, and sometimes acknowledged. As far as the relations and mental interplay between fore-castle hands and officers are concerned, life at sea in Down Easters under Yankee skippers could not possibly have been as bad as has been generally considered. Mark W. Hennessy, in *THE SEWALL SHIPS OF STEEL*, says:

It was the lot of the later-day masters from the Kennebec to meet as best they could a situation demanding the making of time with the finest ships in the American sailing marine with crews composed of Kanaka plantation hands curious to see the world, Atlantic Coast steamship firemen who might be Mr. Hydes in steam but were Dr. Jekylls in sail, shiftless beachcombers who cared little where they went and even less when they got there, and a bunch of lads who went along for the ride.

Saturated with this sort of thing, Capt. Joe Sewall advised A. Sewall & Co.: "Sell the whole fleet and give it up. Your ships are not safe at sea with the cattle manning them." This salty roar fell on deaf

ears. But Capt. Joe had an answer. He went ashore. To hell with the sea.

Capt. Nickerson, a few years later, brought Joe Sewall's old command home from the Hawaiians to marvel that he had come all the way round Cape Horn without an officer capable of taking a sight, or even picking out a course. His "second mate" did not know a single rope in the ship when she put to sea!

Richard Quick got as many real sailors as any of them but he once took the *Edward Sewall* out to Honolulu on the road around the Horn with four Manila men never before at sea, six Puerto Ricans who had never seen a big ship, four Kanakas, and six beachcombers "born tired."

The U. S. Commissioner of Navigation asked in 1894: "Why are American seamen so scarce?" The answer was self-evident. For many long years, there had been no inducement for Americans to follow the sea; they could make a much better, more comfortable, and safer living on land and infinitely easier than at sea. At the end of sail, almost all the captains of American square-riggers were native Americans who first went to sea as common sailors, but as Capt. James G. Baker of the Sewall iron ship *Kenilworth* said: "If a native American goes to sea and does not become an officer in six years at the longest, he leaves the sea. Most of them do become officers. There would be more American sailors if there was more money for them." During the last decade that Yankee skippers operated the Sewall steel ships, the

captains grew old rapidly, the pace was killing, and at that time it was said on competent authority to be "practically impossible to find a first or second officer schooled in sail willing to ship on a square-rigger." Also, "It is more difficult to find a competent mate than a good A.B., and there just aren't any windjammer able seamen any more."

In the last half dozen years before the first World War, the masters of British iron sailing ships had heartbreaking work, and we are told that "many of them left their old love, the square-rigger, for steam simply because they could not get competent officers or men." Those who hung on usually had to put up with an old "has-been" as a mate, who drank or was such a poor sailorman that he had either lost his ship in disgraceful circumstances or never been trusted with one. For second mate, the windjammer "old man" was lucky if he could find "a boy just out of his time" as an apprentice. More than three-quarters of the crew also, it was said, "were likely to be useless steamboat men or crocks and invalids, who were no use aloft." Under such conditions, sail could not be carried safely, for the skipper was certain to be let down by his watch officers or his crew at the first emergency. The former could handle the ship only in the clumsiest fashion, and the latter could not take in sail in any wind. There were, of course, any number of good officers afloat, but they naturally preferred the easier conditions and greater opportunities of steam.

The Officers and Crews of the Sewall Fleet of Steel
Four-masted Square-riggers, 1894-1916

When Capt. George W. Goodwin took command in 1894 of the first Sewall-built steel square-rigger, the *Dirigo*, he was a proud man and had high hopes for his command. Goodwin, born at Calais, Maine, was forty-six years old at the time that the *Dirigo* was launched and sent to sea, and he had been following the sea since he was a boy of thirteen. In 1873 (when twenty-five years old), Goodwin was appointed first mate of the new Sewall wood Down Easter *Sterling* and in 1881, when in his thirty-third year, was given the command, but the ship was soon "sold from under him." Captain Goodwin left the employ of the Sewalls, as "there were no vacancies in their fleet." After a lapse of twelve years, Captain Goodwin, with an ambition to command the American pioneer steel ship, "bought into" the *Dirigo*; for to win the job as master of the vessel, he was required to own a one-eighth interest in her. As Goodwin was a poor man, this meant borrowing at interest most of the money needed; hence, for years, he had "his nose to the grindstone" and was hard pressed financially. All he owned or hoped to own was represented in the ship whose quarter-deck he walked as captain.

The maiden voyage of the *Dirigo* was from Philadelphia to Hiogo (Kobe), Japan, with case oil, and her complement consisted of 30 all told, there being, besides the captain and a first and second mate, 2 boatswains, a carpenter, a cook and a steward, 18 sailors, and 4 boys from the school ship *Enterprise*. This was reducing the number of hands aboard a 3,000-ton square-rigger to the minimum and was an "economy crew," with the boys "of little use as far as working ship is concerned." Upon arrival at Japan, 7 of the crew were discharged, 7 more landed in jail, and the mate was fired for incompetency and other faults. On this first voyage, Captain Goodwin's troubles commenced with both officers and crew, and he had difficulty in manning the ship to get back home. In 1897, at San Francisco, he had to dismiss another chief mate for drunkenness and for punching and blackening the eyes of two boys. The following year, Captain Goodwin, depressed by how things were going, wrote from Shanghai: "What

is there in it after all but a lot of worry and nothing to show for it when you get there." Goodwin was an outstanding, able, courageous, and resourceful commander. As a shipmaster and navigator, he was in the top flight, and although a Yankee skipper from the crown of his head to the soles of his feet, he had nothing of the bully captain about him. He was a driver and a disciplinarian, but no bucko-mate methods were permitted on his ship, and he sought to get on well with both officers and crew. Yet on sailing day he wrote from Shanghai: "Both mates and the carpenter drunk. . . . A man that sails a ship with the help he gets now days has got his hands full"—with incompetence and thorough unreliability, both forward and aft.

The *Dirigo* did have a crew of sorts when she reached Puget Sound in early October 1898, and Captain Goodwin, feeling that if he lost these men, he might get worse and have absolute greenhorns and sick dopes dumped on him, was determined to try to hold them. "Better the devil you know than the devil you don't know." On October 5, he wrote from Seattle: "I was notified yesterday by the sailor catchers [crimps] that they were going to have my crew as soon as we go in dock. . . . An outside ship is worked all they know how by the crimps here and one does not seem to have any recourse." Five days later (October 10), Goodwin wrote: "Six of my crew [a third of the total] are missing. The Sailors Union are giving me all the trouble they can. . . . Three of my crew claim they are sick. I am going to have a Doctor see them this A.M. The men would be all right if it was not for the crimps on shore." Evidently, the local officers or walking delegates of the Sailors Union and the racketeering crimps, "sailor catchers," or boardinghouse masters worked hand in glove to skin, bleed, and rob the poor ignorant sailorman. On October 23, Goodwin wrote: "The *Dirigo* is loaded at last. They have got all but eleven of my men out of the ship. When I started to unmoor about fifty men came down on the dock and when I sent some of my men on the dock to tend the lines they jumped on them and gave them a licking. I then got my gun and 2nd Mate and I went on dock and tended the lines." As long as the *Dirigo* was in Seattle waters, a state of siege existed. At anchor, the boats of crimps and of the so-called Sailors Union picketed the ship. The chief of police promised to give protection to her and all aboard, but he promptly forgot all about it. When Captain Goodwin protested vigorously at the lawlessness that was rampant on the water front, both the mayor and chief of police were "O so sorry," but they did nothing. Before the *Dirigo* left Seattle, Captain Goodwin visited the mayor's office and told him and the head of the Police Department that as far as the facilities and protection for a ship were concerned, they were running the biggest one-horse town that it was ever Goodwin's "misfortune to come to."

Whereas the *Dirigo* was the first Sewall-built steel ship, the Sewall flag had been raised on the British-built steel ship *Kenilworth* at San Francisco in March 1890, four years before the *Dirigo* was launched at Bath, Maine. When less than two years old, the four-masted shipentine *Kenilworth* (2,293 gross tons), built on the Clyde in 1887, was burned at Port Costa, Calif., while loading grain. She was scuttled, condemned, raised, bought by the Sewalls, repaired, and sent to sea. In May 1898, the crew of the Sewall "limey" gave Capt. J. G. Baker lots of trouble at Honolulu. The men refused to work and set fire to the ship. Eleven men were put in jail, and nine of them, in irons, were returned to the *Kenilworth* before sailing. Prior to departure from Honolulu, sugar laden, Captain Baker wrote: "I have got one of the worst set of hoodlums for a crew that ever went on board of a ship." Baker was widely known among the marine fraternity for his kindness. He was an excellent shipmaster, a driver, a strict and eminently just disciplinarian, but a very humane skipper and the antithesis of the "bully" type. However, when he left Honolulu May 29, 1898, he sailed to his death; for some members of the crew, determined to force the ship to put into Valparaiso, set fire to her cargo, and Capt. James G. Baker (sixty-one years old), Chief Mate Arthur B. Piper (thirty years old), and a boy, Henry W. Hobson (sixteen years old), died from suffocation. The *MARINE JOURNAL* of New York, referring to this disaster and crime, properly said: "The *Kenilworth's* cargo was set on fire by her hoodlum crew, and Capt.

Baker, his mate and cabin boy as foully murdered through this dastardly act as if their throats had been cut."

In 1899, Capt. "Jim" Murphy of *Shenandoah* fame took command of the new steel four-masted shipentine *Arthur Sewall* and tried to sail her in ballast from the mouth of the Kennebec to Philadelphia. On the fourth day out (in early April), after getting nowhere, he hired a tug and had a ten days' tow to his destination, with a full crew on board that was both incompetent and belligerent. Murphy tried to get sail on the ship to clear the land, but he soon found that he had "the poorest of crews." On the third day, the men balked at work, and the captain, being unable to talk them into changing their attitude, put them on bread and water. When after two meals the crew declared the mutiny at an end and ordinary rations were restored, Murphy soon saw that surrender had not deprived the men of retaliatory weapons. A slow-down strike was on, everything being done in an exasperatingly slow, half-hearted, and listless manner. The rigging on the new ship, in a blow, had become "all slack, sheer poles and turn buckles all adrift"; so, as the ship was merely holding her position and gaining no ground, Captain Murphy thought he was lucky to meet a big disengaged tug and make a deal with it to tow him to Philadelphia. Later, upon arrival at San Francisco on the maiden passage of the *Arthur Sewall* with coal from Philadelphia, Captain Murphy said that the crew that he had been able to get together for the run out "was not too bad and we got along all right, but the officers were just rotten."

Capt. Robert J. Graham, who in 1898 had taken command of the Sewalls' second steel ship, the four-masted shipentine *Erskine M. Phelps*, had been master of the Down Easter *W. F. Babcock* (2,028 tons) for seven years. He was forty-one years old and had been at sea twenty-six years, having sailed on Kennebec River ships since he was a boy of fifteen. Graham was not of the "bully" captain type, and whereas he sailed entirely on Yankee ships, he was a Philadelphian by birth. From the start, however, he had trouble with his crews on the "*Phelps*," and following the ship's arrival in San Francisco in February 1899 from Baltimore on her maiden voyage, he wrote to Bath: "The Sailors Union is still pursuing me." It charged this time, in an attempt to make trouble, that (1) an insufficient amount of food was furnished the crew and that served was bad and (2) the second mate had ill treated seamen. The Sewalls advised Captain Graham to put his ship into the Ship Owners Association as Captain Murphy had the *Shenandoah* some time before, for "the Association has a competent attorney to look after all these little sailor troubles, and is of assistance to the ship in other ways." However, Graham was an individualist, and knowing that he was right and was looking only for justice, he fought the case on his own as an American citizen. After a hearing before the U. S. Commissioner, the official opinion rendered was that the sailors were lying and that Captain Graham "had acted the part of a faithful officer." The union, however, pressed the case and used *THE COAST SEAMEN'S JOURNAL* and the *RED RECORD* to prejudice it. When the matter came before the Grand Jury, the testimony consisted of the "usual outrageous and contradictory falsehoods," and the matter was quashed. The leading newspapers in San Francisco carried short editorials in favor of Captain Graham and the *Erskine M. Phelps* and criticized the antics of the men who presumably represented the sailors. Of the crew on the run to Honolulu, Captain Graham wrote: "There is one fairly good sailor, about three others who have been to sea. Some of the others do not know aft from forward or port from starboard. . . . Think it probable that most of them will desert when they can. If so will let them go. Cannot get anything poorer and may get better." After a few days at Honolulu, Graham saw a peculiar sort of virtue in his crew, for he wrote that they "had not followed the sea long enough to learn ugliness." This is a powerful description of the seaman, or rather forecandle hand, on an American sailing ship as the nineteenth century drew to a close.

On the homeward run from Honolulu (with sugar) to the Delaware Breakwater "for orders" (June 20-October 19, 1899), Captain Graham was compelled to place one of the crew in irons for a few days "for refusing to obey mate and inciting to mutiny." The episode and events leading to it portray most emphatically the great changes that had developed during

a relatively few years in the relations between officers and crew. Captain Graham reported that when a certain member of the crew, who proved to be a recalcitrant trouble-maker and "sea lawyer" (probably planted by the Sailors Union) and was the one who later was put in irons, boarded the ship, "he went up to Mr. Bailey (the mate), laid his hand heavily on Mr. B.'s shoulder and said, 'Look here, things must go just so on this passage or there will be a picnic.' From that on he moved around just as slowly as it was possible for him to move." (Shades of the bucko mate of earlier days!) Captain Graham and the first and second mates tolerated this sort of thing, for Graham said that he was "resolved to bear with anything rather than have trouble of any kind this passage," and he wrote: "I think the crew would have been very well disposed if it had not been for this agitator continually stirring them up." However, the men "gradually got slacker and more dilatory until finally they would growl about bracing the yards in the night," and the agitator "remarked more than once in the presence of the 2nd mate that if the rest of the men would be guided by him they would refuse to do this and that and would make their own rules for the ship, etc." Finally, the trouble-maker objected to washing down decks on a Sunday morning and further kicked about doing certain needed work as the hurricane region was approached. When told by Mate Bailey that his active antagonism to all authority had to stop, as the ship was nearing dangerous waters and discipline and the prompt carrying-out of orders were necessary for the safety of the ship and all on board, the agitator ignored the logic of the argument. He wildly retorted "that he knew the law, that he had not sailed on the coast of California for nothing, and that if Mr. B. wanted to strike him to go ahead." During this talk, the majority of the crew, as had evidently been arranged beforehand, moved down the deck to where the agitator was standing, and one of the men shouted, "Let them start if they want to. We are ready for them."

Shortly thereafter, orders given by the second mate for necessary work were openly ignored by the agitator and one other seaman, and when this open insubordination was reported to Captain Graham, he sent for the two men, remonstrated with them, explained how necessary the work was, informed them that such insubordination as they were guilty of could not be tolerated, and reiterated the order given them by the mate. The men, however, stubbornly refused to obey. Captain Graham said that he would be required to place the two of them in irons, and they retorted that that was what they wanted and that they would go in irons to New York. The crew thereupon moved aft in a body and in a "threatening manner," but Captain Graham advanced to meet the men. He ordered them to disperse and get on their jobs or down below, and after a brief demurral, they obeyed. The two mutineers were given another chance to obey orders, but as they persisted in their refusal, they were placed in irons. On the second day, the disciple of the agitator had had enough, promised good behavior, and asked to be liberated. This request was granted, and Captain Graham ordered the irons off the "sea lawyer," but kept him in a room in the midship house on full rations for the balance of the passage, permitting him to exercise daily on deck but preventing him from holding communication with any of the crew. Graham wrote: "After that there was great improvement in general conduct of crew and everything went smoothly from thence to port." After arriving at Delaware Breakwater, the *Erskine M. Phelps* was ordered to New York to discharge at Brooklyn. When the ship docked October 23, 1899, the refractory sailor was turned over to the police, and he was promptly indicted by a Grand Jury for mutiny on the high seas.

This experience of Captain Graham with an agitating "sea lawyer" on the *Erskine M. Phelps* is dwelt on at some length not because it was unique but rather because the underlying conditions were common—as was also the tolerance of the master. Many a commander of a Down Easter in the days of Yankee "bully" skippers was fully as humane as Captain Graham, although few in the seventies and eighties would have felt it safe to be as patient and careful as he was. Graham's tactics were made possible by a greenhorn crew that, he admitted, had not been at sea and under the influence of boardinghouse masters and the Sailors Union long enough to become really vicious. Captain Graham did not enjoy his crew of

"quiet and peaceable poor sailors" long, for following a passage from Norfolk to Manila, many of the men felt the call of the tropical Philippines and "jumped ship." Some stole a ship's small boat and "beat it for shore" during the night, and of the crew of 18, 12 deserted in some way or other at Manila. The chief mate and carpenter went on a spree, and Captain Graham had to promote his second mate to first mate and take a big chance in appointing the best of his sailors to the job of second mate in the emergency. At Honolulu, the promoted second mate, then chief mate on the ship, and the carpenter (who repeated his Manila indiscretions) were "very troublesome, getting drunk, shouting, swearing and quarreling," so Captain Graham "sent them packing." He was getting quite used to poor sailors and weak "no-good irresponsible officers."

On New Year's Day of 1902, Captain Graham in the *Erskine M. Phelps* put to sea from the Chilean port of Caleta Buena, with a full load of nitrate, bound to Philadelphia. Everybody on board, officers and men, with the exception of the captain, was drunk, some happily so, but many senseless and incapacitated, and seven of the men went to sea in irons. On January 23, 1902, the *Dirigo* left Hong Kong for Honolulu, and Captain Goodwin had his hands full with a "crew of drunks." While the ship was being towed down the harbor, one of the men "pitched overboard and was not seen again"; the weather outside was rough, and the *Dirigo's* skipper had a bad time of it bucking a head monsoon with a poor crew that started out "booze soaked and ill." When the *Dirigo* finally arrived at Honolulu, 106 days from Hong Kong, Captain Goodwin's first act was to discharge the mate, and the captain berated him as lacking "a straight string in his whole composition."

In March 1902, the *Edward Sewall*, in command of Capt. Richard Quick, sailed from Puget Sound to Honolulu to load sugar for home. The crew, which was shipped at Port Townsend and signed up for the trip to New York, deserted the ship at Honolulu to enjoy a long loafing spell at the tropical Sugar Islands. The Hawaiian Islands had been made part of the United States, and although all the members of the crew were in debt to the ship and obligated to make the passage to New York, Captain Quick found that "they have the privilege of walking ashore and you can't say a word to them" or do anything about it. The sailor sharks were by now doing a thriving business in Honolulu. Men supplied by the Sailors' Home were stolen by the sharks as soon as they were placed aboard a vessel, and "the damnable brazen racket was in full swing." How the big ships ever got a crew together and kept the men on board long enough to cast off and get out to sea is a mystery. Captain Goodwin of the *Dirigo*, in June and July 1902, had a particularly bad time with the crew problem at Honolulu. Angered by the treatment of the proprietor of a sailors' boardinghouse, the captain denounced him and wrote the Bureau of Navigation authorities at Washington. Goodwin protested the state of affairs that rendered shipmasters practically helpless when seeking a crew and a policy that forced ships into dangerous positions outside the harbor. When the *Dirigo* finally sailed from Honolulu July 12, 1902, sugar laden, bound for Delaware Breakwater "for orders," she had an all-native crew on board and not a single white A.B., and it was with this kind of inexperienced and incompetent help that Captain Goodwin had to take a big 3,000-ton steel square-rigger around the Horn home. These islanders may not have been good seamen, but Captain Goodwin had bought them three musical instruments, and they played and sang Hawaiian music. In the log, he wrote: "They are like a lot of children and they are the happiest people I ever had on board a ship." In the lower latitudes, however, the Hawaiians suffered greatly from the cold.

But Honolulu was not alone in the unjustified abuse of captains looking for crews for sailing ships. Captain Graham, in the *Erskine M. Phelps*, sailed from Norfolk May 12, 1902, with coal to be delivered at Honolulu for the navy. When he saw his crew put aboard, he had said: "I doubt if there are over four or five sailors out of the 20. Am inclined to think my new mate is a fair officer." Graham was right in his estimation of the mate, but he was too optimistic in regard to the crew. To his dismay, he found that not a single man in the lot delivered to him as able seamen could steer or go aloft. He dubbed 3 men "half-way sailors,"

for at least they had been to sea before on steam, where they were literally unskilled marine labor. The 17 others of the crew had never been aboard a vessel before, sail or steam, and "did not know aft from forward." Captain Graham and his mates were required to go aloft personally to loose sails before they could proceed to sea, and during the passage the officers had to do all work of a seamanlike nature. The second mate was particularly valuable and rendered "very good services in the heavy weather in high latitudes, going aloft himself and furling and loosing the sails." Graham affirmed that it was impossible to teach seamanship to "tramps whom the boardinghouse masters had picked up around Baltimore" and that their efforts had proved to be a waste of time. As he gave them all black marks as sailors upon arrival at Honolulu, he reported that "most of them could not find the maintopsail halliards today." These men, however, were undoubtedly palmed off on various ships by the Hawaiian sailors' boardinghouse racketeers as able seamen who had come to the port in a big Sewall steel four-master from an East Coast U.S.A. port. Notwithstanding a "hobo crew," the *Erskine M. Phelps*, with an able captain and two outstandingly good mates, made a fine 99-day passage from Norfolk to Honolulu, and the press made a good deal of the performance. Even this fine picture of a captain with two good mates at sea was marred and did not carry right through, for "the very excellent second mate" got drunk ashore, spent a lot of money one night, was robbed of valuables, got into a lot of trouble, "and wound up by working his way to Frisco on a transport." Apparently, signing up crews meant nothing at Honolulu, and the boardinghouse masters' racketeering continued without abatement notwithstanding the persistent kicks of captains and owners to island and U.S. Government authorities.

When Captain Graham was ready for sea on September 19, 1902, with stone ballast in the holds and a crew put aboard (bound for Chile), he put out against a head wind and hired a tug to tow the "*Phelps*" well out and clear of the land. He reported: "Cannot hold crew in this harbor. Several of them have jumped overboard already but have caught them again." Upon reaching Caleta Buena, the crew wanted to leave the ship and live ashore, so Captain Graham gave the men permission to do so and wrote: "Loaded with nitrate it is not safe to keep a crew against their will. It is so very easy to set it on fire and when once a fire is under way it is impossible to put it out."

In early 1903, the logs of the Sewall steel ships show plenty of "sailor trouble." Capt. "Joe" Sewall was quite relieved to get the *William P. Frye* to New York from San Francisco (after a very slow passage) despite the shortcomings of a "very inefficient crew." Captain "Joe" had reached the point where he had abandoned all hopes of good sea runs with the riffraff put aboard, drunk or doped, by the sailors' boardinghouse exploiters. At Puget Sound, Captain Taylor of the *Kenilworth* wrote soon after leaving, laden with coal for Honolulu: "Got the crew and I don't know what I have for they are drunk and the 2nd mate is the worst. I was up all last night and looks as if I was in for another night and day." Upon arrival at Honolulu, all but four of Taylor's "punk and drunken crew" deserted the ship, and the four that stayed by her could not do even half the work of a native. Captain Taylor had worn himself sick from hard physical work and mental worry. He wrote the Sewall Company applying for a vacation when he got his ship east, but became very ill with "break bone fever" and was laid up for some time at Honolulu before sailing. Later, when the *Kenilworth* was loaded and ready to sail, Captain Taylor, with what men he could get aboard, put the ship in the stream and bent sail, but the next day wrote: "I have all of the crew shipped but have eight to get on board. One jumped overboard last night and swam on shore. They caught him. They were all drunk when they came on board."

In March at Woosung, the *Edward Sewall* (Captain Quick), arriving from New York with case oil for Shanghai, had a crew that for some reason or other divided into two belligerent factions and fought between themselves. A detachment of U. S. marines was sent on board to establish order, upon which the two groups of combatant fore-castle hands combined to "repel boarders," freely using belaying-pins and throwing and hitting with anything of weight that they could lay their hands on. The marines laid aside guns and pro-

fessional fighting equipment and, although outnumbered, waded into the ship's crew and gave it a good licking. After the marines had restored order and withdrawn, the fighting between the two groups of forecastle hands was resumed, so the marines returned and meant business this time. Again order was restored, but the marines stayed on board during the trip up the river and handed the leaders of the rioting over to the U. S. consul at Shanghai. A little later, Captain Quick wrote:

The sailor question came up this week and as I had no show at all with the Consul I took a lawyer and got the best one in Shanghai. . . . I have a very hard lot of sailors this time. Out of 20 men I have

got 3 who are working, but have to feed them all. The Consul upholds them in all their doings, which makes it very hard both for me and the ship.

On a passage out to Honolulu from Norfolk with coal in 1903, the *Erskine M. Phelps* had bad weather off the Plate and in rounding the Horn. On July 15, when in Lat. 58° S., Long. 65° W., she shipped an immense sea that did a lot of damage, following which Captain Graham found that he had only nine men aboard physically sound enough to work the ship. More than half of the men were "suffering with boils and only two of them had been on a sailing ship before." Heavy rigging work had to be done personally by the captain and chief mate, for "the second mate was next to useless with ulcers on his arms and no one else knew a brace from a downhaul." On reaching the Pacific after being pounded for twenty-two days rounding the Horn, the cargo of the "*Phelps*" was overheated, being 110° in fore hatch and 150° in lower hold. With a very small and sick crew, Captain Graham had the coal dug out at each hatch and brought up on deck, and three weeks of such steady work, while working the ship, saved the coal cargo from catching fire, as a temperature of 158° was recorded. Captain Graham reported that he could never have got around Cape Horn when shorthanded if the "*Phelps*" had not had steam aboard "to take braces to, to heave yards around in wearing ship, and to heave aft fore sheet," etc., and he added: "Would have been compelled to put back or square away for Australia under easy canvas until men recovered. Indeed, I question if I ever could have got around against such weather even if the men had not been hurt, considering what a useless lot they were."

On this passage, two Japs were shipped at New York as experienced cooks and stewards. They could neither cook nor make bread. A wire was sent to Baltimore to get a good cook, but the man proved "utterly useless" and, soon after getting to sea, asked to be relieved. Several sailors, who said that they could cook, tried and failed, and finally the cooking on the passage was done by Captain Graham and his wife, the second mate, and the Japanese cabin boy. Considering the experiences on this eventful passage, it is no wonder that Captain Graham, following his arrival at Honolulu, wrote:

This going to sea without sailors, or anyone else for that matter who are not capable of performing their duties, is becoming a very serious question. For the first time in my career I have asked myself is there enough in it to make it worth one's while

to submit to all the discomforts, the slaving, working, and bullying that is necessary to get a ship around. It seems to me that one-half the energy expended in some other walk of life might bring as good results.

In early 1904, Captain St. Clair of the *Kenilworth* reported from Kobe that the U. S. consul "will not let me pay the crew off at this place and so I have all of them on my hands." When the ship was ready to sail for the Philippines, however, there was a big hunt needed, with the police, to find the men, and St. Clair wrote: "I have had considerable trouble with my crew, and am taking six of them to sea in irons." When the *Erskine M. Phelps* arrived at Delaware Breakwater on March 4 from Honolulu, Captain Graham reported: "One man died of heart disease and the chief mate has been ill for nearly two months, landed him here this morning. The crew are fair sailors but they are a delicate and sickly lot. Three of them laid up now." The *William P. Frye* sailed from Honolulu March 12, 1904, sugar laden, for the Delaware Breakwater "for orders," and shortly before, her skipper, Capt. "Joe" Sewall, had written of "a strike on by the stevedores and a strike by sailors." Two days before his departure, he wrote: "Am now trying to procure a crew. Sailors are very few.

I have shipped half natives and Japs and need six more Europeans. . . . Do not worry over a long passage—a foul ship and a poor crew. I will do my best.”

Captain Goodwin of the *Dirigo*, at anchor off Staten Island, New York, laden with case oil and bound for Shanghai, reported on May 5, 1904: “I have got a crew on board and all are drunk.” Shortly thereafter, Captain Gaffry of the *Arthur Sewall* wrote of his ship’s arrival at Shanghai and of his paying off the crew, giving them “all that was due them” and, by so doing, hoping to see the last of them. “But the rascals simply took a week’s drunk and came back for something to eat and medical treatment.” When the *Dirigo* reached Shanghai, the crew went out looking for trouble, but all Captain Goodwin’s efforts to get them off his hands failed. The men made such a nuisance of themselves ashore that Goodwin had to take them back aboard and, “the law being what it was,” give them both pay and board whether they worked or not. The mate of the ship, whose many failings in addition to boozing had often exasperated Goodwin, after a four days’ absence on a spree, was fired for drunkenness and being A.W.O.L. The skipper wrote: “If I have to do his work I will do it without him being in the way.” Without a first mate, the state of affairs on American square-riggers in 1904 (as far as officers were concerned) is revealed by Captain Goodwin when he wrote to the owners:

Took one of my sailors for a watch officer and made the old 2nd mate a leading man. He does not know anything about navigation but Mrs. Goodwin can help me at that. I will get along all right but it is hard lines for a Ship like this to go

to sea with the gang I have got. There is not a man that is of any use out here that would look at a sailing ship. Lots would sign on for the sake of getting a dollar and then not turn up.

The *Dirigo*, in ballast, left Shanghai November 6, 1904, bound for Honolulu with what was in reality a worthless and unreliable crew and with no one except the captain and his wife aboard that knew anything whatever about navigation.

The *Erskine M. Phelps* left Honolulu with sugar on January 8, 1905, bound for Delaware Breakwater “for orders.” Captain Graham, just before sailing, felt that he had assembled what he considered in those days “a good crew of all white seamen”; but he was disgusted at his officers, for the new mates shipped for the passage home were lying around “drunk and will probably go to sea in that condition.” The captain, however, was doomed to disappointment in regard to the “good crew of all white seamen” that he had shipped, for we are told that before he could get away, “the crimps stole every man-jack of them” and compelled the “*Phelps*” to go to sea with “a motley crowd of Kanakas and Jap plantation laborers.” When Captain Graham actually got to sea, he found that there were only two real sailors aboard, and the Kanakas and Japs were absolute greenhorns and for most of the passage were practically useless. Captain Goodwin was at Honolulu with the *Dirigo* at the time of the sailing of the *Erskine M. Phelps* and saw Captain Graham’s dilemma. Writing of the affair, Goodwin said:

The crew, or the great part of them, walked on shore the day they were going to sea. The Captain [Graham] then put his ship out on the reef and was caught out there with a Southerly gale but fortunately the wind shifted before he got into any serious trouble. At 5 P.M. I went to Captain Lyon, who has charge of the Naval Station, and asked him to get steam up on the *Iriquois*, which he did. Captain Niblack took Mr. Gilman and I out around the *Phelps* at 10 P.M. but by that time the wind

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Captain Goodwin entered enthusiastically into a crusade against the Honolulu crimps, but he got more promises than real support in his fight, and on March 1 (the day before he actually sailed) he wrote: “I am bothered with sailors. . . . My old 2nd Mate has been cutting up so this P.M. that it has worked me all up. . . . The greater part of my crew are Hawaiians”;

fessional fighting equipment and, although outnumbered, waded into the ship's crew and gave it a good licking. After the marines had restored order and withdrawn, the fighting between the two groups of forecandle hands was resumed, so the marines returned and meant business this time. Again order was restored, but the marines stayed on board during the trip up the river and handed the leaders of the rioting over to the U. S. consul at Shanghai. A little later, Captain Quick wrote:

The sailor question came up this week and as I had no show at all with the Consul I took a lawyer and got the best one in Shanghai. . . . I have a very hard lot of sailors this time. Out of 20 men I have got 3 who are working, but have to feed them all. The Consul upholds them in all their doings, which makes it very hard both for me and the ship.

On a passage out to Honolulu from Norfolk with coal in 1903, the *Erskine M. Phelps* had bad weather off the Plate and in rounding the Horn. On July 15, when in Lat. 58° S., Long. 65° W., she shipped an immense sea that did a lot of damage, following which Captain Graham found that he had only nine men aboard physically sound enough to work the ship. More than half of the men were "suffering with boils and only two of them had been on a sailing ship before." Heavy rigging work had to be done personally by the captain and chief mate, for "the second mate was next to useless with ulcers on his arms and no one else knew a brace from a downhaul." On reaching the Pacific after being pounded for twenty-two days rounding the Horn, the cargo of the "*Phelps*" was overheated, being 110° in fore hatch and 150° in lower hold. With a very small and sick crew, Captain Graham had the coal dug out at each hatch and brought up on deck, and three weeks of such steady work, while working the ship, saved the coal cargo from catching fire, as a temperature of 158° was recorded. Captain Graham reported that he could never have got around Cape Horn when shorthanded if the "*Phelps*" had not had steam aboard "to take braces to, to heave yards around in wearing ship, and to heave aft fore sheet," etc., and he added: "Would have been compelled to put back or square away for Australia under easy canvas until men recovered. Indeed, I question if I ever could have got around against such weather even if the men had not been hurt, considering what a useless lot they were."

On this passage, two Japs were shipped at New York as experienced cooks and stewards. They could neither cook nor make bread. A wire was sent to Baltimore to get a good cook, but the man proved "utterly useless" and, soon after getting to sea, asked to be relieved. Several sailors, who said that they could cook, tried and failed, and finally the cooking on the passage was done by Captain Graham and his wife, the second mate, and the Japanese cabin boy. Considering the experiences on this eventful passage, it is no wonder that Captain Graham, following his arrival at Honolulu, wrote:

This going to sea without sailors, or anyone else for that matter who are not capable of performing their duties, is becoming a very serious question. For the first time in my career I have asked myself is there enough in it to make it worth one's while to submit to all the discomforts, the slaving, working, and bullying that is necessary to get a ship around. It seems to me that one-half the energy expended in some other walk of life might bring as good results.

In early 1904, Captain St. Clair of the *Kenilworth* reported from Kobe that the U. S. consul "will not let me pay the crew off at this place and so I have all of them on my hands." When the ship was ready to sail for the Philippines, however, there was a big hunt needed, with the police, to find the men, and St. Clair wrote: "I have had considerable trouble with my crew, and am taking six of them to sea in irons." When the *Erskine M. Phelps* arrived at Delaware Breakwater on March 4 from Honolulu, Captain Graham reported: "One man died of heart disease and the chief mate has been ill for nearly two months, landed him here this morning. The crew are fair sailors but they are a delicate and sickly lot. Three of them laid up now." The *William P. Frye* sailed from Honolulu March 12, 1904, sugar laden, for the Delaware Breakwater "for orders," and shortly before, her skipper, Capt. "Joe" Sewall, had written of "a strike on by the stevedores and a strike by sailors." Two days before his departure, he wrote: "Am now trying to procure a crew. Sailors are very few.

I have shipped half natives and Japs and need six more Europeans. . . . Do not worry over a long passage—a foul ship and a poor crew. I will do my best.”

Captain Goodwin of the *Dirigo*, at anchor off Staten Island, New York, laden with case oil and bound for Shanghai, reported on May 5, 1904: “I have got a crew on board and all are drunk.” Shortly thereafter, Captain Gaffry of the *Arthur Sewall* wrote of his ship’s arrival at Shanghai and of his paying off the crew, giving them “all that was due them” and, by so doing, hoping to see the last of them. “But the rascals simply took a week’s drunk and came back for something to eat and medical treatment.” When the *Dirigo* reached Shanghai, the crew went out looking for trouble, but all Captain Goodwin’s efforts to get them off his hands failed. The men made such a nuisance of themselves ashore that Goodwin had to take them back aboard and, “the law being what it was,” give them both pay and board whether they worked or not. The mate of the ship, whose many failings in addition to boozing had often exasperated Goodwin, after a four days’ absence on a spree, was fired for drunkenness and being A.W.O.L. The skipper wrote: “If I have to do his work I will do it without him being in the way.” Without a first mate, the state of affairs on American square-riggers in 1904 (as far as officers were concerned) is revealed by Captain Goodwin when he wrote to the owners:

Took one of my sailors for a watch officer and made the old 2nd mate a leading man. He does not know anything about navigation but Mrs. Goodwin can help me at that. I will get along all right but it is hard lines for a Ship like this to go

to sea with the gang I have got. There is not a man that is of any use out here that would look at a sailing ship. Lots would sign on for the sake of getting a dollar and then not turn up.

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and again, "I do not know what I am going to do about a 1st Mate. There are two old drunks on the beach that want to go."

The *Dirigo* made a slow passage of 158 days from Honolulu to Philadelphia with "a foul ship and a rotten crew." The Sewalls were not pleased and evidently expressed themselves, but Captain Goodwin came right back at them:

How do you think I feel about it, who has had to put up with all the annoyances that a bum crew and light winds could give me during the past five months? I know that the ship can sail and I can get the speed out of her when there is anything to do it with. On the third day out from Honolulu the white men of my crew refused duty on the plea that the ship was not half manned and said

they would not do any more work unless I put the ship back to Honolulu. As I did not have any idea of going back I put nine of them in Irons and fed them on bread and water until they were willing to think as I did. . . . I had the poorest crew and the hardest chance to make a passage one could possibly have.

The officer problem for some time had been as serious as the sailor question. On January 16, 1905, Captain Quick of the *Edward Sewall*, leaving Baltimore with coal for Manila, wrote: "My Mate got Drunk the night I left and as yet he is still in his room. I took a 2 gallon jug of whiskey from him this a.m., so feel he will sober up now." Shortly after this, the mate of the *William P. Frye*, which was at Shanghai, got into a fight with the boatswain when Capt. "Joe" Sewall was ashore, was slashed with a knife, and nearly bled to death. There is a question as to who was to blame for the fight, but as the boatswain did the knifing, he was jailed for a year. Captain Sewall wrote: "This is the third cutting affray on American vessels here in a month. I think it is a great injustice we are compelled to keep our crews by the ship out here. It is impossible to prevent them from drinking." It would seem that as far as drinking was concerned, most of the mates were as bad as the forecandle hands. The *Arthur Sewall* arrived at Shanghai from Puget Sound about the same time as the "*Frye*" left in ballast for Honolulu, and Captain Gaffry of the "*Arthur*" soon commenced to tell the "same old tale of woe." On March 24, 1905, he wrote: "It is not very pleasant here with a drunken Mate and a crew about as bad as the Mate"; and on April 10: "We are having a time with drunken and sick sailors." In January of the next year (1906), Captain Graham of the "*Phelps*" was to write from Honolulu: "Took my crew on board fairly sober. Officers all drunk."

Capt. Lewis Colley, of Thomaston, Maine, in command of the *Kenilworth*, had a heart-breaking 230-day passage out to Manila, where he arrived in May 1905. The route, for some unknown reason, was around Australia and via Guam, and Captain Colley wrote:

On the tenth day out from New York the Mate died. I made the second mate First Mate and had to take a man out of the forecandle for second Mate. We have six of the worst men I ever saw on board Ship. They are always trying to make trouble, and

we have had lots of it. On March 14th night, very dark, after wearing Ship a number of the Men pounded the Second Mate so that he has not been able to be on duty since, and I have been standing his watch and acting Second Mate.

It was in November 1905 that Capt. "Joe" Sewall of the *William P. Frye*, when loading coal at Norfolk for Manila, expressed himself definitely and finally in regard to shipping training-ship boys, which the Sewall firm imagined gave it some good labor cheap. Captain "Joe" wrote that he did not want to receive any more letters about carrying training-ship boys on his vessel. "They are no good. The one I had cleared out, work too hard. We cannot get any one now to go in these vessels worth a continental"; and again: "We wish the boys today had the grit and determination they used to have, but they all seem to be afraid of work."

A Sewall ship's coal cargo that was dangerously overheating required persistent shoveling for days and weeks, which was very hard work and was more fittingly labor for stevedores rather than for sailors. It is no wonder that sailors kicked at being required to do this very arduous work for long periods of time, and when the ships put into ports like Montevideo, they quit or "jumped ship" and made the owners hire stevedores to do the "hot, dirty and unhealthy business." Captain Goodwin in the *Dirigo* lost his crew as a result of a fire in

the coal cargo of the ship. When he put into Montevideo for help, his crew deserted, and after a while, shore men engaged in working coal knocked off and refused to continue shoveling hot coal, most of them claiming illness from breathing coal gas. Goodwin, in December 1905, following the desertion of his crew, had to "go through the same old process again of breaking in a lot of indifferent hoboos." But it was more than the crew that gave Goodwin concern at Montevideo. The chief mate, whom the captain had rated as "fair," acted up just before the ship sailed and at a time when he was badly needed. "While I was on shore yesterday," wrote Goodwin, "he got crazy drunk, broke into my room and took my revolver and terrorized the crew." Following this, he flagged a boat, gathered up his belongings, and went ashore. The next day, the captain and the American consul hunted up the drink-crazed mate, but they could not get him to return to the ship. Goodwin raged: "Here I am all ready to go and detained by a drunken gutter waller."

On March 19, 1906, Captain Gaffry reported the *Arthur Sewall* anchored near Anjer with her cargo of coal threatening to burst into flames. Two days before the ship reached anchorage, she had come very close to losing an entire watch, and he reported: "Some were so far gone it took half an hour to bring them back to life again. Coal gas is greatly in evidence." It would seem that the sulphur gas fire-fighting equipment installed on the Sewall ships materially reduced insurance rates, but did not operate to reduce the temperature of coal, once it started heating, to any substantial amount or to give confidence and security to the officers and crew aboard the ships. After arriving at Batavia in tow, Captain Gaffry worked courageously to save his ship, but on April 16, 1906, wrote: "The Sailors thinking I have not trouble enough are trying to make it unpleasant for me. Last Monday morning they refused to go to work unless I gave them ten Guilders apiece and liberty. They are all in jail. The fire has given me a good deal of anxiety but the Sailors more. Had to discharge the mate here and will probably get clear of the Sailors." When on April 30 the *Arthur Sewall* set canvas and resumed her passage to Manila, it was said that the crew was "demoralized by whiskey and sickness."

In 1906, at Honolulu, "sailor trouble" pestered Captain Colley of the *Kenilworth* early, and he wrote: "It is very evident we will have trouble procuring Crew. I have lost my Cook and Steward. They were beat on shore last Saturday night and threatened if they went to work on the Ship again they would be killed. I got another Cook Monday but he only got Breakfast and was afraid to stay longer. I have some men on board and we are all living at Restaurants." Captain Colley was addressed by the secretary of the Charter Committee of the sugar factors, who informed him that the committee had made arrangements with Captain Bray of the Sailors' Home to supply sailors at \$5.00 and officers at \$10.00 a head and hoped that he would patronize and encourage the new service. It was intended to drive the crimps out of business and put a stop to the dangerous practice of forcing a vessel to go outside, inadequately manned, until a crew could be secured. Colley fell in with the constructive plan (the outcome of the crusade of Captain Goodwin of the *Dirigo*), and he got a crew, but he was skeptical of the working of the plan because of experience and wrote on February 26 that he planned to sail the following morning "unless I lose my crew tonight." To keep the crew aboard, he had hired a ship's watchman.

When Captain Goodwin, in the *Dirigo*, was ready to sail from Honolulu for Philadelphia on May 22, 1906, he reached the ship to find a fight in progress, and the second mate's landing on a seaman's jaw held up the sailing. Other legal entanglements followed, and half of his crew "vanished in thin air." It was May 24 before, by hustling, he finally got enough men together to sail, the last three being rushed aboard by a boardinghouse master while the ship was towing out of the harbor. Goodwin wrote of his deep disgust when he found his ship "all upset by a lot of drunken hoboos." Leaving Baltimore for San Francisco on October 17, 1906, Captain Goodwin wrote: "We got our crew on board, part last night and part today. They are all drunk and I have the 2nd Mate locked up."

The *Erskine M. Phelps* left Baltimore, coal laden, in tow on July 3, 1906, bound for Manila, and Captain Graham wrote that the mate was "drunk in his bunk" and most of the crew "howling mad." He was called upon to "quell several disturbances among the crew" and had only four or five men physically fit to work. He wrote that off Cape Henry he had got the crew at last to work, but that the men were awfully stupid and bending sail with such a bunch of apologies for sailors was a major job. From Manila, Captain Graham wrote on November 16, 1906:

Have had the usual trouble with crew. Some of them are sick and in the hospital. One fell from aloft and was killed a few days ago. Most of the others have run away. They were beachcombing in Manila, telling horrible tales of cruel treatment and starvation which one of the papers took up for

them. Paid no attention to it at first, but finally it became monotonous, so thought it time to take action. With the result that all the papers are now ringing the praises of the "*Phelps*" and the crew are mostly in jail on the charges of vagrancy, disorderly conduct, etc.

When Graham left Manila for Honolulu, he had "a crew of 8 white men, balance Filipinos with about 15 Jap workaways." The "*Phelps*" made a run up in 44 days, arriving January 11, 1907.

Capt. "Joe" Sewall on the *William P. Frye*, at Honolulu in the summer of 1906, was disgusted with a long wait for a cargo and the "practical impossibility of getting good crews." He despaired to the point of quitting the sea and "getting out of ships—both my money and my person." Writing the Sewall firm, he said:

If you see fit to give me a fair price for my interests in the steel vessels I will sell out. I am not dissatisfied with you, but with the life and the contentions we have. We are not in it in any way. Your ships are not safe at sea with the cattle man-

ning them. I never saw so demoralized a ship as the "*Arthur*" at Manila. Her crew had complete charge and Gaffry could get no aid. Sell the whole fleet and give it up.

But Sam and Will Sewall had no intention of giving up their jobs as managers in 1906. On September 19, Captain "Joe" again wrote: "I expect to sail tomorrow morning. I have a very poor crew, one half Porto Ricans. 'Tis the best I can do. I may be long on the passage. I leave feeling rather discouraged. Everything is so against us." Captain Gaffry took the *Arthur Sewall* to sea from Honolulu on October 10, 1906, and he was fully as disgusted as Capt. "Joe" Sewall in the "*Frye*." Thirteen of the crew he called Puerto Ricans, who had never before been to sea; 3 were Kanaka boys; and 3 were Japs, who had never sailed salt water. The "veteran" of this motley crew of nondescripts was a nineteen-year-old Kanaka boy who had "once been on a sailing ship for three months." Gaffry, after he had completed the passage with "that raw crowd," said: "None of them could understand English and . . . I was heartily glad when the ship was clear of them."

When Captain Graham sought a crew in Honolulu for the *Erskine M. Phelps* in February 1907, he refused to take a "lot of Mexicans, Porto Ricans, and Argentines who would have been worse than useless," but got together a half crew of green Japs and picked up the other half from arriving British and Italian vessels, which batch included "four dependable white seamen." The chief mate had been "half drunk all the time" in Honolulu, and when the ship sailed, his effects were aboard the "*Phelps*" but not the mate. The second mate was also a boozier, but no half-way decent officers were available at Honolulu, so Graham made the second officer chief mate and made a forecandle hand the acting second.

The *Dirigo* left San Francisco in ballast for Honolulu April 19, 1907. Captain Goodwin had two new mates aboard, but he quickly got a line on the caliber of his new officers:

Each one is a little worse than the last. After the mate got the rum worked out of him he was sick the remainder of the passage. The fellow I shipped as 2nd Mate decided the first day out that he was not a 2nd Mate and went in the forecandle.

I not only had to take the anchors in but had to put them out again and be head and tail of everything else I got done. . . . I have all the hell I want at sea.

A few days after the *Dirigo* passed out of the Golden Gate, Captain Quick sailed from Honolulu in the *Edward Sewall*, sugar laden, bound for Delaware Breakwater. He had been compelled to ship a crew that included 6 Puerto Ricans that never saw a ship except at the dock in Honolulu and 6 beachcombers "that were born tired." Quick pronounced this outfit, after he had worked with it a while, as "the very poorest that ever I went to sea with." Among his "20 sailors," he found only 2 that knew what a ship's wheel was, and they knew practically nothing about steering. For the first two days, the captain and chief mate had to handle the wheel and teach 4 of the most likely looking members of the crew how to steer. The second mate proved to be incompetent and unreliable, and after Captain Quick caught him asleep on deck during his watch in the early morning of the sixth day out, he was demoted to the forecabin and one of the inexperienced crew promoted to acting second mate. Even though it was well known that he would never make an officer, it was felt that he would at least keep a good lookout and not go to sleep when on duty. When Captain Quick was off Hatteras in August and looked back to what he had had to contend with since late April, he wrote that he wondered "how we got here at all."

Captain Goodwin in the *Dirigo*, scheduled to follow closely the *Edward Sewall* from Honolulu, could not get away until June 4, 1907, and after the ship was loaded with sugar, Goodwin spent a week's time trying futilely to get some officers and a crew better than the Japanese that he was compelled finally to sign up. "What I could not get in quality I have taken in quantity," he wrote, and he added: "I have not got any 2nd Mate and the Mate is not a navigator. I think it is a brilliant outlook. . . . I am more than disgusted with the whole outfit."

Capt. "Joe" Sewall succeeded in getting the *William P. Frye* to Philadelphia—but that was about all; he then quit the ship and the sea in an all-permeating and expressive disgust. He arrived at the Delaware Breakwater March 19, 1907, to complete the longest eastward Cape Horn passage made by any Sewall steel ship—180 days. The trip was so long that he felt required to call at the Barbados on February 23 for provisions. Capt. "Jim" Murphy relieved Capt. "Joe" Sewall on the "*Frye*," and when he took the ship out from Baltimore to San Francisco with navy coal, he tried "a new stunt" in manning her. Knowing that he could not get any sailors for a crew, he picked up a crowd of German steamship firemen and was elated to get a crew of rugged men who had actually been to sea before, although not one of them had ever served on a sailing ship.

When Captain Quick took the *Edward Sewall* out from Baltimore, coal laden, into Honolulu on March 7, 1908, he once more marveled that the ship had made "as good a passage as she has when at its completion 10 of the 20 sailors aboard her cannot now go aloft." When he came to getting a new crew, Quick ran into "a barrel of trouble." An element in Honolulu was agitating about American shipmasters' taking Japanese as sailors and "ignoring the presence on the beach, without jobs and without money, of over half a hundred seamen of the United States and the states of Europe and Ireland." This was prejudiced, emotional twaddle. Captain Quick wanted 20 white men for his crew, and signs were posted: "WANTED—20 men for the ship *Edward Sewall*." The Honolulu PACIFIC COMMERCIAL ADVERTISER announced to the world that Captain Quick wanted white men and "an all white crew." Gilman, the local representative for the Sewall ships, announced that the company was looking for a crew of white men, and U. S. Commissioner Almy "told all inquiring sailors that the *Edward Sewall* was anxious to get a white crew and get it quick." A sign to this effect was posted at the office of the United States Shipping Commissioner. As many of the "half a hundred seamen," impoverished and looking for jobs, as were in existence knew of this chance to get work and of this much-advertised appeal, but they ignored it or laughed it off. Such white sailors as may have been on the beach at Honolulu did not want jobs. "They roared because a windjammer shipped a Japanese crew and when 20 white men were wanted they would not ship." Finally, wherever seamen (or apologies for them) congregated, the announcement was broadcast that the *Edward Sewall* would sign

up a crew at a specific hour on a stated day; "but not a white sailor was in sight at the office of the Shipping Commissioner at the time," and "outside the office were several Filipinos, Japanese, Hawaiians, Mexicans, and Porto Ricans." It took a long time to get a crew together, and after much searching and following up every possible lead, the ship's articles, when Commissioner Almy got through with them, showed 8 Americans, 7 Hawaiians, 6 Japanese, 3 Filipinos, 2 Mexicans, and a Frenchman—27 men. It was said that, considering the quality, Captain Quick would have liked to have secured a couple more, but that nothing of promise was available. It was also said that 2 of the 8 Americans had worked for a short time as firemen on a Great Lakes steamer, but that the remainder were thoroughly "green" and were looking for "a chance to make their board and passage home." The 7 Hawaiians were "young fellows who have never been to sea before but are ambitious enough to see what life afloat has in store for them." The Filipinos all hailed from Manila and claimed to be sailors of a sort, with some experience in the South Seas and the Orient. The Japanese were known to have had several months' experience aboard the Commercial Pacific Company's cableship *Restorer* and had honorable discharges. (One of them, on the passage east, fell from aloft and was instantly killed.)

The *Dirigo* sailed from Honolulu May 23, 1908, sugar laden, for the Delaware Breakwater with Captain Goodwin "pretty well fed up with conditions." His mate was "an old drunk that I have taken out of jail" and his crew "a bunch of plantation coolies." On the East Coast, Captain Graham took the *Erskine M. Phelps* to sea June 22 from Philadelphia, laden with coal for Seattle. He had been required to hire longshoremen to unmoor the ship and get her out in the stream, for his crew was "partially drunk, officers very much so." Captain Murphy, on the *William P. Frye*, was held up in sailing from Newport News with coal for San Francisco until May 4, 1908, because of "crew trouble." Murphy had a crew all signed up, but the boardinghouse masters got it away from him. In desperation, Murphy appealed to New York to send down a crew and deliver it to his ship, as he told the local racketeers and sailor exploiters to "go to Hell." When the *Dirigo* arrived at Philadelphia on September 30, 1908, Captain Goodwin, fed up with "drunks and jail birds for mates or with having no mate at all," appealed to New York to find him "a real mate and send him down." A few days before the *Dirigo* sailed from Baltimore with coal for Honolulu, Captain Goodwin wrote: "The Bum Mate they sent around from New York cannot be found. He sent his things on board, stood me up for \$2.00 yesterday, and promised to go right off to the ship but he has not turned up at this writing. He is an eye sore to me now. I do not know what he will be before we get to Honolulu." This mate, however, did board the *Dirigo* before she sailed on October 30, but he promptly passed out in his bunk—drunk and "dead to the world." For two days, Captain Goodwin doctored "my brilliant chief officer for D.T." and finally got that worthy around so he could stick his aching head out on deck and at least make a bluff at taking a hand, although for some time he was in a "dazed, shaky condition." This was Captain Goodwin's last voyage, and—like Capt. "Joe" Sewall—he "quit the sea in disgust for keeps."

Upon the arrival of the *Erskine M. Phelps* at Puget Sound, Captain Graham ran up against the Sailors Union racketeers. On the run out from Philadelphia, he had reported his crew as "not so bad" with the exception of four agitators—a California union seaman and three Englishmen—who "did their best to demoralize the others." At the end of the passage, certain of the men entered into a conspiracy, charging Captain Graham "with knocking down one of the crew," which Graham declared was utterly ridiculous and entirely false, and he added: "I have long ago given up resorting to fisticuffs." But charges were also preferred against the mate, and Graham was particularly sore over this, for he was "a harmless, inoffensive man without a particle of fight in his composition." At a hearing before the U. S. Commissioner, Captain Graham and his mate won quick acquittal, as it was proved that such discipline as was obtained at sea was by proper and "strictly legal methods"; that the only real punishment inflicted was a week in irons for one of the four agitators, who was guilty of going beyond

the realm of general demoralization and with inciting to open rebellion against orders—or plain mutiny.

Captain Quick took the *Edward Sewall* out from San Francisco May 6, 1909, with general cargo bound for New York. After a long, thorough search, Quick had secured a mate—"a very old man, but the best I could do"; but Quick had to let him go before he had been on the job a day, for it was apparent to all that he possessed none of the qualifications or the experience needed for the job. A mate could not be obtained, young or old, a sober man or a drunk, so Quick wrote: "It looks as though I will have to go without a mate." Evidently, a mate of sorts was obtained at the last moment, for the ship sailed with two mates. The second mate on the *Edward Sewall* was "a fine young man belonging to San Francisco though he never had been to sea before in a sailing ship." Off the Horn, the second mate was carried to his death by a sea that swept the ship. This same sea injured the mate badly and confined him to his bed for four weeks, and then he went insane. On the passage, one of the forecandle hands went mad, so Captain Quick had his hands full, with no mate and no one aboard with any knowledge of navigation, etc. Only 16 men on the ship were physically able to attend to their duties, and Quick wrote that when the gales abated, "they started to get funny with me because I was alone"; so the captain brought out a six-shooter, put on a "big bluff," and kept on driving the ship on her course. It is no wonder that upon his arrival in New York, Captain Quick informed the Sewalls that he was "ship sick" and wanted ten days of freedom from the ship to go to the woods.

Captain Graham took the *Erskine M. Phelps* out of Honolulu February 12, 1910, sugar laden and bound for Delaware Breakwater "for orders," and he reported: "No sailors on the beach. Have shipped the best obtainable young Natives, Portuguese, niggers, etc. Don't think there is a sailor in the lot." Graham soon found that "only two of the crew could steer and they indifferently well. None of the rest could do anything. Began at once to try and teach them and train them." After completing this voyage, Captain Graham was also "fed up with running American sailing ships in the twentieth century." In July 1910, he joined Captains Sewall, Goodwin, and Murphy, who had resigned their commands in Sewalls' big ships and gone ashore, and Captain Gaffry, who had also quit the sea life by going to his death on the *Arthur Sewall* when that ship "went missing" in 1907.

At the Hawaiian Islands in May 1910, Captain Quick in the *Edward Sewall* continued to have "sailor trouble." When he took the ship to Hilo to complete loading, he wrote that from the appearance of things he would be forced to go home "without a 2nd mate or cook or steward again." A succession of cooks and so-called cooks came out to the ship and departed. In the lot of 12 seamen that were in the ship during the 6-day run from Honolulu to Hilo, which Quick had described as "half Russians and half Japs," 2 were "bad men" and agitators and were let out, and 1 man went "crazy." When loading was finished on May 28, 1910, Captain Quick wrote:

I have got to start out again without a sailor and with a poor crew and a very foul ship. . . . Some time ago I sent to Honolulu for a 2nd mate, cook, steward, and all the sailors they could get me. These men came and I filled the ship here with natives and some Japs, but when I got them on board the Honolulu men would not go on unless I would get all white men. I sent back to Honolulu but only got one man and he would not

come on board at all. Then I shipped a full crew of natives and as there is no boat to tow us out till tomorrow I sent to Honolulu to see if I could get a 2nd mate by boat Sunday. So I will sail at once. I hate to sail on a long voyage with only myself and mate [reported sick] white men, so I waited for 2nd mate. [The *Edward Sewall* actually sailed May 29 after having been at the Hawaiian Islands since February 21; i.e., 97 days.]

In March 1911, Captain Quick kicked again, with cause, at the difficulty of getting either officers or men for square-rigged ships at San Francisco. Securing sailors for the usually pleasurable run to the Sugar Islands, which appealed generally to both sailors and land-lubbers, was to Quick of the *Edward Sewall* "the hardest time of my life," and when finally he did get a crew, not a real deep-water sailor was in the lot. Quick hired a mate at \$70.00 a

month (big pay for the period) and found that the man could not "tell one end of the ship from the other"; his accomplishments were evidently limited to bluffing and lying. At Kahului, after discharging the mate, Quick promoted his second, who had been once around at least, having sailed with Capt. "Jim" Murphy when he and the *Shenandoah* together took their last sea voyage. The seamen deserted the *Edward Sewall* at Kahului about as fast as they were hired. On May 7, Quick wrote:

They [the sailors] have about all left the ship, though I have got the very best watchman I can get here. I sent to Honolulu for 12 men and only got five, and last night three of them left and three more old ones. I have only got six men on board today [and the ship practically loaded and about ready to sail]. Have sent to Hilo for men and may get enough to get the ship to Honolulu where will try to get enough to bring the ship home. As fast as those men leave they give them work on the plantations. The first ones got on shore and got jobs and came back and took the rest from us.

The following day (May 8), Quick reported that the loading of sugar was completed at 2:00 P.M. and that if he had a crew, he could sail. "I sent my cabin boy to Hilo for some men and I just got a wireless that he was on his way with 16 men. I just about danced with joy, as I had it all planned to go to Honolulu short handed and get a crew there. But now I will be able to square away for home tomorrow." The *Edward Sewall* did leave Kahului at noon of May 9, and Quick reported: "Though I have got 16 men on board now I have got practically nothing as the mate is at the wheel now and I haven't got a man that can steer and only half of them can go aloft. . . . When I have got no one to handle sail I cannot carry it." The next day Captain Quick hove to off Diamond Head to make an attempt at Honolulu to get more men and some who would be of help to him. He wrote: "I am going to get a mate. The man I made mate got drunk last night and is still in his bunk. I went in his room and took a 2 gallon demijohn of whiskey so I did not make much by promoting him."

On the next passage out, the *Edward Sewall* sailed from the Delaware, but it was not until the last minute that Captain Quick could find a mate. Then Quick took a coasting schooner man with no experience with square-riggers, but he was a reputedly "good navigator." The mate soon learned deep-sea ways, for by late afternoon of October 4, 1911, "the crew, including the two mates, were all full," and the captain and pilot "did not consider it safe to start the ship down at dark." It is significant that the new mate was "dead to the world in his bunk." The *Edward Sewall* got into heavy weather too soon after leaving the Delaware, and before the officers and crew could be whipped into shape, she lost some spars and canvas and after twelve days was anchored at New York for repairs. A day later, Captain Quick reported that the crew had "all deserted" and of the mate: "Drunk tonight, so expect tomorrow will finish him up and I shall be looking for a new mate." On November 3, 1911, the *Edward Sewall* again went to sea with a new crew, and Captain Quick wrote: "Mate is drunk in bed and second mate sick. I got my hands full to get sail on her. . . . Mate may be better later on."

The *William P. Frye* went to sea a little behind the *Edward Sewall*, and her master, Capt. H. A. Nickerson, reported that as she left in tow, several of his crew "were crazy drunk" and that two of them jumped or fell overboard (from the deck). Before the tug could reach them, both sank, "though a life belt was thrown on one." Nickerson wrote: "There is neither fault or blame on the part of the ship's company except the drunks, as all the trouble was among themselves [and they had not commenced doing any ship work]."

When the *Erskine M. Phelps* reached Philadelphia on June 14, 1911, from Honolulu with Capt. William H. Curtis in command, that skipper reported: "The crew was the most miserable one that ever went in a ship, knowing nothing about a ship whatever. Had both officers laid up at the same time on the worst part of the passage, the mate with stomach trouble. Second mate got knocked down and head cut slightly." Curtis wanted to keep the mate notwithstanding his ill health, for otherwise he was a "good man and thorough seaman"; but Curtis could not do it, for the man left the ship and never returned. On the next passage west, Curtis reported that he was handicapped by poor officers, the chief mate was incompetent and irresponsible, and the second mate was laid up nearly all the passage.

The *William P. Frye* left Kahului June 29, 1912, for Philadelphia and made a slow passage. Commenting thereon, Captain Nickerson said:

I have made the run home from Kahului with three men who could speak English and the same number that knew more than one rope in the ship. Not an officer that could take a Meridian Altitude or even pick out a course, so had I been sick or un-

able to get on deck one can easily understand what the consequences would be. Thirty hours continuous deck duty was a frequent occurrence. . . . I could not instill any navigation into the heads of acting officers.

Leaving San Francisco in April 1913 in ballast for the Hawaiian Islands, Captain Quick of the *Edward Sewall* once more reported how difficult it was to get any kind of crew. Out of 20 men that he finally signed up, only 4 could be classed as possible sailors. "The rest have never been to sea before and cannot go aloft." Yet Quick went to sea, cast off his tug, and made sail somehow, with his mate "dead drunk," with no second mate aboard, and with the knowledge that only 2 of the entire crew were able to steer. Because of adverse conditions, Quick spent two days and nights getting clear of the land, and he feelingly wrote:

If it don't try the nerve of a man to start out with 20 men that never saw a ship and no mates and get a bad start off. It is not so bad if you get a chance, as you most always do, to make sail and

get off the land the first day—you get a chance to get straightened up. But if you get a bad start like we got, it is hard to keep a light ship off the rocks, as that is the first place they want to go.

Upon arrival off Kahului, while ballast was being dumped, Captain Quick slung stagings over the ship's side and, in placid waters, ordered the painting of part of the ship's side, which greatly needed it. He had a rebellion on his hands, and 5 of the forecandle hands, who protested that they had shipped as "sailors and not painters," ended up in irons. Most assuredly these "seamen" were not of the kind serving in steam. When the *Edward Sewall* sailed May 22, 1913, for Philadelphia, for a crew she carried Japs, Filipinos, Kanakas, and 4 white men—none of them real sailors.

Capt. H. A. Nickerson worked the *William P. Frye* into New York on the last day of February 1914 after being only fifteen miles off Sandy Hook on February 8. As this passage ended, Captain Nickerson was through with sail and "with utmost regret," coupled with a great sense of relief, sent his resignation to the Sewalls at Bath, Maine.

With World War I came the end of the operation of the Sewall fleet of square-riggers. Although two of the ships (*William P. Frye* and *Dirigo*) were destroyed by the Germans, it was not the war that caused the end of legitimate deep-sea square-rigged American merchant sail but the lack of crews and officers, the aging of capable captains, and the policy of the United States following the early fifties to do nothing to protect and foster American shipping. Merchant sail would not have been the heartbreaking division of American deep-sea transport that it was in the last part of the nineteenth and the early years of the twentieth century if the operation of square-riggers (wood, iron, or steel) had been encouraged by the government; if differentials favoring foreigners had been met; and if a sailor's life had been made more attractive by a pay that would have been made economically possible to shipowners and competitive with shore wages and fixed also with due regard to the nature and hazard of the work. Americans abandoned the sea entirely as forecandle hands, and able seamen were no more. Young men who desired to follow the sea took up with steam and not sail (but not as forecandle hands). The future of young deck officers was in steam and in steam or motor vessels only. When the last old guard of American deep-sea square-riggers could get neither forecandle hands nor mates to operate them, it was not necessary for the few remaining skilled skippers to shun them; the die was cast, and square-rigged merchant sail was doomed.

XXIX.

THE LAST DAYS OF DEEP-SEA MERCHANT SAIL

AS THE last half of the nineteenth century advanced and the competition of iron screw steamers became increasingly potent, with the use of the multiple-expansion engine and high-pressure steam (and constantly improving economy of operation) and the locating of coaling stations, dry docks and repairing facilities at strategic points on all ocean trade routes of the Seven Seas, sailing ships became more and more pressed, with the years, to find paying freights and would develop a paying carrying trade and enjoy it for a few years, only to see it eventually taken from them by steam. Chinese tea and Australian wool were fine paying cargoes for deep-sea square-riggers for many long years, and even Peruvian guano (a dirty, smelly cargo) was deemed "a godsend" by clipper shipowners during the last half of the clipper ship decade. It gave them a return cargo for ships in the California trade, when outgoing freight rates dropped, and thus permitted them to operate at a profit; whereas an eastward run of some 15,000 or 16,000 miles in ballast around the Horn (or long lay-ups and ballast trips between ports in the Orient and East Indies while searching and fighting for cargoes when the capacity of available bottoms greatly exceeded the total tonnage of commodities to be shipped) would eat up the moderate profits made on the outward passage. The California (and Puget Sound) grain trade developed when it was greatly needed, but as the volume grew large, the market demands made European ports the destination of the eastward runs around the Horn. As the trade was not American coastwise (as was the traffic between Atlantic Coast and Pacific Coast U.S.A. ports) and, therefore, was not protected, foreign ships (particularly British) could participate therein, carry cargoes out to the Pacific, and benefit by British preferentials in the form of prejudice of British buying merchants for British bottoms. They also benefited by lower insurance rates, decreed by British Lloyd's and the underwriters, etc., on British ships and cargoes carried and by lower operating costs due to the lower British wage rates, plane of living, etc.

Gradually, Puget Sound became a great exporter of timber products. However, lumber, logs, or spars seldom formed the cargo of a ship making a return passage around the Horn to a North Atlantic port, for the timber and lumber markets of Europe were nearer the Scandinavian and Baltic ports, which had good forest products to ship in abundance and at low prices. The timber and lumber products of the American Northwest that were exported by vessel generally went to ports of Australasia, the Orient, East Indies, the West Coast of South America, Pacific islands, and the eastern coast of South Africa, although much of the water shipment of lumber from Puget Sound was Pacific coastwise trade. After the Hawaiian Islands became part of the United States, sugar was sent in square-riggers from Honolulu and other ports in the Sugar Islands to East Coast U.S.A. ports for refining and consumption. (Sugar had once been shipped in fair quantities, as was hemp, etc., from Manila to augment the supply obtained in America from Cuba and the West Indies.)

During the last quarter of the nineteenth century, coal became an outward cargo increasingly easy to obtain for American ships engaged in the Cape Horn trade; but when high-class half clippers and Down Easters were in their prime, coal was not considered either a desirable or safe cargo to be carried on a long passage by a first-class sailing ship, particularly if the course to be traversed was around Cape Horn. Following the Spanish-American War and the

annexation of the Hawaiian Islands, the U.S. Navy demands for coal at the Pacific islands and mainland naval stations became relatively large, and the public demanded that shipments of such coal be made in American bottoms and be the product of American mines. During the days of the Sewall "Big Wood Four" (built 1890-1893) and of the Sewall four-masted steel shipentines that followed them (built 1894-1902), by far the major part of the cargo carried was coal from U.S.A. ports (usually Baltimore, Norfolk, Newport News, or Philadelphia) to Manila, San Francisco, Honolulu, or Puget Sound, with return passages with sugar from Honolulu to the Delaware Breakwater "for orders" or with grain from San Francisco (or Puget Sound) to European ports—Liverpool, Havre, or quite often Queenstown "for orders." Ships going out to Manila with coal often ran to Newcastle, N.S.W., in ballast (instead of proceeding direct from Manila to Honolulu in ballast to load sugar for the return passage) and then took a load of Australian coal to Honolulu. As the Pacific trade developed, the ships kept exclusively in that coastwise and transocean trade generally carried timber products from Puget Sound on their outward passages and coal from Newcastle, N.S.W., on their return passages. Occasionally, a ship usually engaged in the Cape Horn trade made voyages between West Coast Pacific and Australian ports, carrying lumber out and coal on the return. Some canned salmon was shipped by vessel east around the Horn from Puget Sound and some California wine in barrels from San Francisco, but such western products were invariably part of a mixed cargo carried in a sizable ship. One of the Sewall steel shipentines made two eastward Cape Horn passages loading nitrate at Chilean ports; however, this trade was pretty well monopolized by the Germans, although occasionally a Down Easter figured in it. Two of the Sewall "Big Wood Four," which were lost in August 1905, loaded chrome ore at Noumea, New Caledonia, in the South Pacific; the *Roanoke* was destroyed by fire before her loading was completed, whereas the *Susquehanna*, with 3,558 tons of ore aboard, foundered at sea three days after sailing from Noumea (about two weeks later).

In the late 1880's, shipments of kerosene in cases commenced to be made from East Coast U.S.A. ports to the Orient, and in addition to the big movements of coal, sugar, and case oil on long deep-sea passages in sailing ships (also grain from California and guano from Peru to North Atlantic ports), the following three trades used a relatively large number of sailing ships: (1) Alaskan salmon packers; (2) the Chilean nitrate trade to European ports; and (3) the grain trade from South Australia to Europe.

Oil Carriers

In the late eighties and early nineties, when steam seemed about to win in competition with sail, the big world demand for oil gave the deep-sea square-rigger a new carrying trade. Sail suited this trade very well, as speed was not essential. Case oil in big quantities was being shipped from New York and Philadelphia to the Far East and Australasia. Basil Lubbock, the British historian, says:

At first sailing ships of all sizes, rigs and nationalities crowded into the Schuylkill River in order to load kerosene. The trade grew by leaps and bounds, and before the end of the nineties the requirements of Australia and New Zealand alone amounted to over a million cases, and with the need of India, China, Japan, and the East Indies even greater than this, it was soon recognised that ships of large carrying capacity were required for the trade; thus such giant windjammers as the *Palgrave*, *Somali*, *Andorinha*, and *Dunstaffnage*,

vessels of well over 3000 tons, were speedily absorbed into the oil carrying business.

In spite of such big sail plans as made them ticklish to handle, these monster four-masters were all slow sailers with the exception of the *Dunstaffnage*. They were all on the crank side, and terrible ships for taking charge at critical moments, and thus were often in trouble. Their crews always had the fear that they would roll their masts out when under way and carry away their capstans when at anchor.

MERCHANT SAIL

The *Somali*, *Andorinha*, and *Dunstaffnage* were three of the largest ships ever built for the British trade. Whereas seven five-masted steel shipentines of from 3,784 to 5,633 tons were built (three in Scotland, three in Germany, and one in France) during the years 1890-1921 for German (four), French (two), and Danish (one) owners, no five-masters and no sailing vessels of over 3,537 tons were built in Britain for British owners. The four largest wind-jammers launched from British yards for the British trade were the following four-masted steel vessels:

| Name | Year Built | Tonnage | Dimensions in Feet | | | Builder | Owner |
|--------------|------------|---------|--------------------|---------|-------|-------------------------------------|--------------------|
| | | | Length | Breadth | Depth | | |
| SOMALI | 1892 | 3,537 | 329.9 | 47 | 27 | Russell, Clyde | Steeves |
| ANDORINHA | 1892 | 3,440 | 346.8 | 46.1 | 25.5 | Pickersgill, Sunderland, England | Roberts |
| LIVERPOOL | 1889 | 3,396 | 333.2 | 47.9 | 26.5 | Russell, Clyde | Leyland & Co. |
| DUNSTAFFNAGE | 1892 | 3,317 | 327.8 | 47.2 | 25.6 | Potter, Clyde | MacVicar, Marshall |

Three of these vessels were taken over by the case oil trade, and the fourth, the *Liverpool*, would probably also have become an oil carrier had she not come to an untimely end on February 25, 1902, when, outward bound from Antwerp to San Francisco, she ran ashore on the coast of Alderney in a fog while under full sail. The force with which she struck carried her over submerged rocks and broke her back. The crew was all saved, but the ship, which was a full-rigged four-master, became a total loss. The *Liverpool* was built especially for the jute trade (and could stow 26,000 bales), but she could not be kept in this trade all the time. Like all others during the last years of the nineteenth century, it was "passing rapidly over to steam."

The *Somali* had a varied and checkered career. She was "sold foreign" from the oil-carrying trade and was renamed *Alsterdamm*, then *Adolf Vinnen*, and later was a Dollar vessel on the Pacific before being laid up in Oakland Creek. The *Andorinha* had an "evil reputation." She was said by contemporaries to be a "wet ship, devilishly driven," and was branded a "man-killer." The *Dunstaffnage* was sold to the Vinnens in 1910 and renamed *Magdalene Vinnen*. She was interned on the South American West Coast during the first World War, was handed over to Italy in 1921, and soon after was broken up. Another big British steel ship, the *Urania* (3,265 tons), built in 1902, later named the *Speedonia*, was reconstructed as a steam oil tanker and became the *Scala Shell*.

It would seem that the Anglo-American Oil Company, of London, was the pioneer in regularly employing its own fleet of sailing ships in the case oil trade. In the nineties, it bought twelve iron or steel ships ranging from 1,694 tons (*Calcutta*) to 3,065 tons (*Sindia*) and averaging 2,353 tons and, during the years 1901-1903, built eight vessels in Britain for its case oil carrying trade. The Standard Oil Company, of New York, which had been using Sewalls' big wood and steel shipentines for carrying oil to the Far East, had three big steel oil carriers (rigged as four-masted shipentines and sisters of the latest Sewall square-riggers) built for its account by Arthur Sewall & Company at Bath, Maine, during 1900-1902. The three U.S.A.-built Standard Oil Company ships were:

| Name | Gross Registered Tonnage | Launched | Sold to Alaska Packers Association | | End |
|--------|--------------------------|---------------|------------------------------------|-----------------|---|
| | | | Year | Renamed | |
| ASTRAL | 3,292 | Dec. 8, 1900 | 1910 | STAR OF ZEALAND | Laid up at Alameda, Calif., in 1929. Sold to Japs in 1935 and became STAR OF ZEALAND MARU. |
| ACME | 3,288 | May 21, 1901 | 1910 | STAR OF POLAND | Wrecked on Katsura Island, Japan Sea, in 1918, when in government service during first World War. |
| ATLAS | 3,381 | Jan. 11, 1902 | 1909 | STAR OF LAPLAND | Laid up at Alameda, Calif., in 1929. Sold to Japs in 1936 and became STAR OF LAPLAND MARU. |

The eight case oil carriers built by the Anglo-American Oil Company in Britain during this generally corresponding period were:

| Name of Ship | Type | Year Built | Tonnage | Name of Ship | Type | Year Built | Tonnage |
|--------------|---------------------|------------|---------|--------------|---------------------|------------|---------|
| COMET | 4-masted shipentine | 1901 | 3,014 | ARROW | 4-masted shipentine | 1902 | 3,090 |
| NONPAREIL | 4-masted shipentine | 1901 | 3,014 | ECLIPSE | 4-masted shipentine | 1902 | 3,090 |
| BRILLIANT | 4-masted shipentine | 1901 | 3,765 | ALACRITA | 3-masted ship | 1903 | 1,974 |
| DAYLIGHT | 4-masted shipentine | 1901 | 3,756 | RADIANT | 3-masted ship | 1903 | 1,974 |

Of these ships, the *Nonpareil* capsized off New York on her maiden voyage and was a total loss, and the *Alacrita* foundered at sea, being—like her sister, the *Radiant*—"a very cranky ship." When launched, the *Brilliant* and the *Daylight* were the largest windjammers under the British flag and the largest four-masters in the world. They were very heavily rigged vessels, were built with water ballast tanks to hold about 2,000 tons, and about 1910 were rebuilt at New York to carry oil in bulk. When in late 1901 the Sewall-built American wood shipentine *Shenandoah* made a passage of 139 days from New York to Japan, laden with case oil, she beat the new steel oil carriers *Acme* and *Brilliant* by sixty-seven and thirty-seven days, respectively. The *Arrow* was sold to the Germans for use in the Chilean nitrate trade and became the *Parma*. The *Comet*, on her maiden passage, was dismasted on her way to New York and towed back to port; she was sold to the Germans in 1913 and renamed *Orotava*. She was at Santa Rosalia, Mexico (Pacific Coast), at the outbreak of World War I and interned for the duration, following which she was bought by Capt. Robert Dollar, of San Francisco, and renamed *James Dollar*. The *Eclipse*, which was said to be "the fastest ship of the Anglo-American Oil Company fleet," was also sold to the Germans and renamed *Egon*. She was interned in Mexico during the first World War, following which she was also bought by the Dollars, renamed *Janet Dollar*, and used in the Pacific trade. She made her last sea passage in 1924, when she carried lumber to Tsingtao. The *Alacrita* left Cape Town for Hong Kong in ballast and "went missing," and she was but one of four of the Anglo-American case oil fleet that came to a tragic end. The *Radiant* was sold by the oil company in 1912 for £12,000.

The *Edward Sewall* of 3,206 tons, launched October 3, 1899, from the yard of Arthur Sewall & Company and built for the builder's account, was a sister of the Sewall-built Standard Oil Company trio of steel four-masted shipentines. This vessel was bought by The Texas (oil) Company in 1915 to carry case oil to South American ports and the Far East. In 1922 she was sold to the Alaska Packers Association, of San Francisco, for the salmon canneries trade and renamed *Star of Shetland*. In 1929 this shipentine was laid up at Alameda, Calif., with the remainder of the fleet, and in 1936 she was bought by the Japanese and renamed *Star of Shetland Maru*. The increased longevity of the U.S.A.-built steel case oil carriers as compared with the life of those built by the British is conspicuously evident.

The first vessel especially designed to carry petroleum in bulk was evidently the big French ship *Quevilly* of 3,482 tons, built by Laporte & Cie, Rouen, in 1897 and operated under a French Government subsidy. This ship was reported as carrying "a million gallons of oil" and, with the subsidy received, was continued in operation steadily for years between Philadelphia and Rouen. By no means a handy ship, she was a slow sailer and had a very full bow, but carried a tremendous quantity of canvas. Her commander said that she handled "like a dray"; yet it would seem that she was lucky enough to keep out of trouble.

The big American seven-masted steel schooner *Thomas W. Lawson* of 5,218 tons gross and 4,914 tons net registered tonnage, built at Quincy, Mass., in 1902, was "an unwieldy

brute," with an impossible rig for deep-sea work (only fore-and-aft sails). Under charter to carry oil across the Atlantic, she was lost in December 1907, at the Scilly Islands, when making her first eastward passage. The disaster was attributed in the press to the carrying of oil in bulk, which during heavy weather—with the ship unmanageable under her canvas—caused the vessel to head over so far that she capsized and quickly became a total loss. In one respect, this report was erroneous, as the *Thomas W. Lawson* was not built and was never rebuilt with divided tanks to carry oil in bulk, and the oil that she had aboard when lost was case oil. The only other American steel schooners ever built, the six-masted *William L. Douglas* of 3,708 tons, built at Quincy, Mass., in 1903, and the *Kineo* of 2,128 gross and 1,868 net tons, built by the Sewalls, of Bath, Maine, also in 1903, ended their days as oil carriers. In 1912 the *William L. Douglas* was rebuilt as a sailing oil tanker and renamed *Delaware Sun*. The *Kineo*, bought by The Texas (oil) Company in early 1916 and used at first for carrying case oil under canvas or tow, was later converted into the motor vessel *Maryland*.

The second of the Sewall-built steel shipentines, the *Erskine M. Phelps*, was bought in February 1913 by the Union Oil Company, of California, to operate under sail as an oil carrier; however, it was decided, for economic reasons, to make a towing oil barge out of her, and up to the days of the second World War she has been steadily employed carrying oil in bulk on the Pacific Coast.

In 1908 the Anglo-American Oil Company built at the yard of Harland & Wolff, of Belfast, Ireland, the steel barge *Navahoe* of 7,718 tons and 350 ft. long, fitted with auxiliary sail. This barge was built for carrying oil in bulk across the Atlantic Ocean and to be towed by the 10,000-ton *Iroquois*, which also carried petroleum in bulk. The *Navahoe* was a six-masted "bald-headed" schooner; i.e., without topmasts or topsails. She had a steam towing machine in the bow, and the tow wire was 600 fathoms long and 7 inches in diameter. The *Navahoe* carried a crew of 8 seamen, 4 quartermasters and a boatswain, 2 engineers, 4 firemen, a wireless officer, and 2 watch officers. The tug *Iroquois* cost £150,000 (about \$750,000) and the barge *Navahoe*, £90,000 (about \$450,000). It is said that their speed across the Atlantic in the summer was expected to be 11 knots per hour, but this was seldom, if ever, realized, and on the winter crossing the average was reduced to not more than 9 knots per hour. The two vessels in this tow were apparently the closest craft to the White Star liner *Titanic* when she sank in the North Atlantic, after colliding with an iceberg, in April 1912. After a few years of experimentation with varying degrees of success, physically and economically, the practice of using the "horse-and-cart," or "tug-and-barge," system was abandoned by the oil company in favor of self-propelled tankers. It was well proved in actual service for years that the North Atlantic Ocean constitutes the world's worst waters for tow service, or "horse-and-cart" marine traffic.

Alaskan Salmon Packers

The various associations and companies of packers and fishermen of San Francisco and Puget Sound commenced buying and chartering old square-rigged sailing ships (wood, iron, or steel) for use in the Alaskan salmon canneries trade during the last years of the nineteenth century. In 1909 the various firms operating ships from San Francisco and Puget Sound to the salmon canneries in Alaska amalgamated, and henceforth the ships in this trade (or fisheries business) sailed under the flag of the Alaska Packers Association. The operation of ships in the Alaska salmon canneries was entirely different from the use of ships in any other line of

marine activity in the world; it was not a trade but more of a phase of fisheries and the canning and packing of fish. The association and its predecessors built no new ships, but were content to buy old ships at a relatively low price, and the nature of the business necessitated the use of "cheap, commodious tonnage." The ships were laid up throughout the winter in Oakland Creek and in the spring were fitted out for a run to the north with cargoes of box-shooks and tin plate needed for the canning of the Alaska salmon. In addition to the men signed on as crews to man the ships, the vessels carried a large number of fishermen, sometimes as many as 150 or even 200 men, usually a low type of Mexican who would be willing to "rough it" and work hard for very little money. It is said that "the average money earned per man per trip under favorable circumstances was about \$150 and most of this money was swallowed up by outgoings for slop-chest clothes, food, tobacco, etc." All the men on board a packer, sailors and fishermen, were kept busy throughout the entire round trip of a salmon packer, and the captain and cooks were practically the only men who remained aboard the ships after the anchors were down in Alaskan waters. The canneries were ashore and lined the water's edge; while the ships had steam equipment, refrigerating plants, wireless equipment, etc. It was said, "As the cannery wheels began to slow down, the cargo winches grow busy." When the ships were loaded full, they returned from Bristol Bay, through the Unimak Pass, and down the North Pacific to San Francisco.

The length of the ship's stay in Alaska depended on how the salmon were running, but it is said that "the extreme limit was four months." It would seem that a run north occupied usually three or four weeks and the return four to six weeks, and a round trip could be figured as "something under six months." The Sewall Bath-built Down Easter *Sterling* of 1,732 tons, built in 1873, is said to hold the record in the salmon fisheries with a run "from the Bering Sea to San Francisco in exactly three weeks." Running northward, the *Star of Alaska* of 1,862 gross tons, built at Glasgow in 1886 as the *Balclutha* and bought by the Alaska Packers Association in 1904, is said to have made "a very smart run of 14 days" in 1926 from San Francisco (April 3) to Bristol Bay (April 17). This is evidently far from the record, for the steel shipentine *Star of Lapland*, the flagship of the Alaska Packers' fleet (ex-*Atlas*, which was built by the Sewalls, of Bath, Maine, for the Standard Oil Company in 1902), was credited in 1917 with an amazing run of only 7 days 5 hours "from San Francisco to Bristol Gulf."

Up to the end of the nineteenth century, the sizable ships of the salmon packers' fleet were old Down Easters, and at the turn of the century the following wood ships of this type had been operating as "packers" and, with the exception of the *Sterling* (which was wrecked on an uncharted rock off the entrance to Nushagak Bay, Alaska, May 20, 1898, with no loss of life), were still in the service:

| Name of Ship | Builder and Year Built | Tonnage | Year Bought by Salmon Packers | Name of Ship | Builder and Year Built | Tonnage | Year Bought by Salmon Packers |
|------------------|------------------------------------|---------|-------------------------------|--------------------|-----------------------------------|---------|-------------------------------|
| GEORGE SKOLFIELD | Skolfield, Brunswick, Maine 1870 | 1,276 | 1893 | SANTA CLARA | Chapman & Flint, Bath, Maine 1876 | 1,535 | 1896 |
| STERLING | Sewalls, Bath, Maine 1873 | 1,732 | 1896 | INDIANA | Sewalls, Bath, Maine 1876 | 1,488 | 1898 |
| BOHEMIA | Houghtons, Bath, Maine 1875 | 1,663 | 1897 | LLEWELLYN J. MORSE | Oakes & Son, Brewer, Maine 1877 | 1,393 | 1895 |
| CENTENNIAL | Smith & Townsend, East Boston 1875 | 1,286 | 1896 | TACOMA | Goss & Sawyer, Bath, Maine 1881 | 1,739 | 1898 |

The pioneer ship of the Alaska Packers' fleet, the *George Skolfield*, was acquired by the packers in September 1893, and after making seasonal voyages she was sold in 1900 to the

American Trading Company, of San Francisco. The *Centennial* was burned when laid up for the winter in Oakland Creek in December 1904; when rebuilt, she was re-rigged as a barkentine and for many years was continued in service as a salmon packer. In March 1927, she was sold for the Pacific lumber trade. The *Llewellyn J. Morse* was operated as a salmon packer until 1922, when she was laid up; but in 1925 she was sold to moving picture interests, who rebuilt her to represent the *Constitution* in the picture "Old Ironsides." It is surprising that the *Bohemia*, *Santa Clara*, and *Indiana* were also acquired by the moving picture interests of Southern California in 1926 and the *Centennial* in late 1928. The *Tacoma*, bought by the salmon packers in 1898 for \$40,000, was chartered to the U.S. Government during the Spanish-American War and for some time afterwards was used in transporting horses and freight to Manila. In 1900 she made her first fisheries voyage and made regular annual trips to Alaska until 1918, when in May she was crushed and sunk in the ice.

The first British-built iron ships to join the fleet of the Alaska Packers were the *Himalaya* of 1,067 tons, built by Pile, of Sunderland, in 1863 and acquired in 1901 (later renamed *Star of Peru*); *La Escocesa*, known as "the little Scottish Lady," built at Dundee in 1868 and made a salmon packer in 1902 (being later renamed *Star of Chile*); and the *Euterpe* of 1,197 tons, built in the Isle of Man in 1863 and made a packer about the same time (later renamed *Star of India*). When the *Star of Russia*, a sizable ship of 1,892 tons, built at Belfast, Ireland, in 1874, was added to the fleet, the Alaska Packers Association liked the name and decided in 1907 to rename all its ships "Stars" as had been the practice of J. P. Corry & Company, which had owned and operated a splendid fleet of "Irish Stars," so designated because they were named "Stars" and had been built by Harland & Wolff, Belfast, Ireland. Soon after the purchase of the *Star of Russia*, the salmon packers added three more of "Corry's Irish Stars" to their fleet, and these ships, whose names were not changed, in addition to the *Star of Russia*, were the *Star of Bengal* of 1,797 tons, built in 1874; the *Star of Italy* of 1,571 tons and the *Star of France* of 1,569 tons (two sisters), both built in 1877.

None of the wood-built Down Easters had their names changed, but all the iron (or steel) ships that became salmon packers were named "Stars." In 1904 the British steel ship *Balclutha* of 1,614 net tons, built in 1886 at Glasgow, was acquired and became the *Star of Alaska*, and the following year the *Blairmore*, built on the Clyde in 1893, was added to the fleet as the *Star of England*. (This vessel, with little ballast aboard, had capsized in San Francisco Bay in the spring of 1896 and was raised, rebuilt, and renamed *Abby Palmer*.) The steel bark *Kaiulani* of 1,570 gross tons, built by Arthur Sewall & Company, Bath, Maine, in 1889, became a salmon packer after only ten years of trading in the Pacific and was renamed *Star of Finland*, and in 1908 the British-built steel shipentine *Kenilworth* of 2,293 gross tons, built on the Clyde in 1887, was sold to the salmon packers and became the *Star of Scotland*. After being burned and scuttled at Port Costa in August 1889, this vessel was rebuilt and operated by the Sewalls in the Cape Horn service, but was deemed no longer "suitable and safe" for that arduous trade. In 1909 the *Hawaiian Isles*, a four-masted steel shipentine of 2,097 tons, built on the Clyde in 1892, became a salmon packer and was renamed *Star of Greenland*. The British steel full-rigger *Zemindar* of 2,053 tons, built by Harland & Wolff in 1885 as a Calcutta jute ship, was sold to the Germans in 1900 (renamed *Otto Gildemeister*) and later bought by Hind, Rolph & Company, San Francisco, after she was towed into port in distress. She was repaired and renamed *Homeward Bound*. She became a member of the salmon packers' fleet in 1909 and was given the name *Star of Holland*. In that same year the packers bought the British ship *Willscott* of 1,981 tons, built on the Clyde in 1896, and renamed her *Star of Iceland*. Another British-built ship acquired by the Alaska Packers Association after the end of the first World War and one of the last sailing vessels bought by it was the *Durbridge*, a steel full-rigger of 2,121 tons, built on the Clyde in 1892, which had in the meantime been the German ship *Steinbek* and later the *Arapahoe* of Seattle. This ship became the *Star of Falkland* and was wrecked on Akun Island in the Bering Sea in May 1928, becoming a total loss. The *Star of*

Bengal, one of the original "Stars" of Corry's British fleet, came to a tragic end on Coronation Island, Alaska, in September 1908, when homeward bound with 50,000 cases of salmon. Of 146 men believed to be aboard (110 of whom were Chinese), only 27 were saved.

Five of the nine steel square-riggers built in the United States (eight four-masted shipentines and one three-masted bark) were acquired by the Alaska Packers Association during the period 1909-1922. Of the five vessels of this American-built fleet of steel square-riggers owned and operated by Arthur Sewall & Company, of Bath, Maine, two (the *Dirigo* and *William P. Frye*) fell victims at sea to the Germans in the first World War; another (the *Arthur Sewall*) "went missing" in 1907; a fourth (the *Erskine M. Phelps*) was sold and converted to an oil barge; and the last one of the quintet owned and operated by the Sewalls (the *Edward Sewall*), sold in the early days of World War I to The Texas (oil) Company, was in turn sold by it to the Alaska Packers Association in 1922, when the vessel was twenty-three years old. Not a single member of the fleet of U.S.A.-built steel square-riggers that operated under the Sewall flag was sold direct to the salmon packers, but all of the four vessels that the Sewalls built by contract for American owners (three shipentines for the Standard Oil Company—*Astral*, *Acme*, and *Atlas*—and one three-masted bark—the *Kaiulani*—for Williams, Dimond & Company, of San Francisco and Honolulu), were acquired by the Alaskan salmon fisheries people during the period 1909-1912. The *Acme* (*Star of Poland*), while engaged in work for the U.S. Government, was wrecked in the China Sea in 1918 (during World War I); but all the other four Sewall-built steel ships acquired by the Alaska Packers Association were not only owned by that company when it discontinued the use of sailing ships and turned to steam in 1929 but also held by the company for many years thereafter—as was the once Sewall-owned but British-built four-masted steel shipentine *Kenilworth* (*Star of Scotland*).

The first of the Alaska Packers' fleet to be sold were naturally its smallest and oldest ships. By 1928 the vessels owned had been reduced to fourteen, and only five were sent north that season, these being the *Star of Holland* (forty-three years old), *Star of Alaska* (forty-two years old), *Star of Falkland* (thirty-six years old), *Star of England* (thirty-five years old), and *Star of Zealand* (twenty-eight years old). Many more ships would have been sent to the Alaska fisheries if the officers to command and sailors to man them could have been obtained. In 1925 the salmon packers' fleet numbered thirty-two square-riggers, but in that year a scandal developed in San Francisco, and publicity was given to grievances that had been growing for years in regard to the unjust treatment of Mexican fishermen and the selfish, inhuman, and arbitrary tactics of the employment agencies that furnished the men needed for the ships. In the meanwhile, experienced masters and officers of square-rigged sail were passing away, growing old, and retiring, and it had become impossible to replace them with younger men who were qualified to handle square-riggers. Great difficulty was being encountered in getting a nucleus of foremast hands who had had any experience in deep-sea square-rigged merchant sail or men "who were willing to go aloft or who knew what to do when they got there." With a prosperity boom sweeping the country, even the few seamen who could have been of use in the handling of square-riggers at sea refused to go to sea in such ships when much easier jobs were available in steam; moreover, "a six months' voyage to nowhere and back" was not appealing when berths were available on steamers that made short and regular runs between ports. The ships of the Alaska Packers Association were getting so old that they needed to be replaced with newer ships, which was not possible (as construction practically terminated with the turn of the century), or a great deal of money spent in their rehabilitation, which would have been an almost endless job that was not warranted when men were not available to man the ships. The nature of the business demanded the use of cheap, secondhand vessels, and while these and men to operate the inexpensive sailing ships were procurable, the salmon fisheries and canneries using square-rigged sail for transport were so successful that steam had no chance to edge into the trade or industry. However, when men could not be obtained to man the old ships (which could not be replaced as they gradually played out), the

salmon packers, deeply to their regret, had to abandon sail, lay up and try to sell their ships, and turn to steam, which they did in 1929.

Of the seven old ships of the Alaska Packers Association reported as afloat and in service in the winter of 1936-1937, the *Star of Greenland* (ex-*Hawaiian Isles*) was sold in 1929 to Sweden to be used in the training of Swedish merchant cadets. This old ship, renamed *Abraham Rydberg*, operated in commerce during World War II, when there was a great demand for merchant tonnage. The *Star of Alaska* (ex-*Balclutha*), after four years' lay-up at Alameda, Calif., was sold by the packers in 1932 to a syndicate, which renamed her the *Pacific Queen* and dreamed of sending this old British ship (then forty-six years old) on a yachting cruise around the world. In 1935 the ship was used by the moving picture industry, and the following year a short cruise in the Pacific, with "a Sea Scout crew," was attempted. The *Star of India* (ex-*Euterpe*) was sold to the Zoological Society of San Diego, Calif., for use "as a home for Sea Scouts," and in 1936, when seventy-three years old, the ship was overhauled for use as a marine museum.

The *Star of Finland* (ex-*Kaiulani*), built by the Sewalls, of Bath, in 1899, was laid up with the rest of the Alaska Packers Association sailing fleet in 1928, but the owners affirmed that they desired to keep this vessel and later fit her out as a museum. In 1936 she was used by the moving picture people of Los Angeles and during World War II, because of the need of deep-sea merchant tonnage, was fitted for service and used on long-distance voyages under sail. The *Star of Zealand* (ex-*Astral*), *Star of Lapland* (ex-*Atlas*), and *Star of Shetland* (ex-*Edward Sewall*)—three sister ships built by the Sewalls, of Bath, Maine, in 1899-1902—were sold by the Alaska Packers Association to the Transpacific Commercial Company, of Osaka, Japan, in 1935-1936. The three four-masted steel shipentines went to sea in August-September 1936, manned by Japanese and bound for Japan, where, it was said, they would be handed over to shipbreakers. This was probably their ultimate fate, but it was reported that at least a couple of these ships, upon arrival in Japan, were reconditioned and, with cadet crews aboard, sent out to Australia for wool. In any event, these ships were afloat in 1937 (when from thirty-five to thirty-eight years old) as the *Star of Zealand Maru*, *Star of Lapland Maru*, and *Star of Shetland Maru*. Several other old salmon packers were afloat as barges or hulks at the commencement of World War II, and possibly some were reconditioned and rigged for ocean service when the need for marine tonnage was very great.

Basil Lubbock, writing in 1929 of the end of sail and with his thoughts specifically on the big world fleet of square-riggers that had been operating in the Alaskan salmon packing and Pacific lumber trades under the Stars and Stripes, refers to the handicaps of American owners and operators of sailing vessels and says:

Many unavoidable factors combined to defeat their efforts, not the least of which was the difficulty of obtaining officers and foremast hands who were capable of handling and keeping in repair that complex fabric of wood, steel, wire, hemp, and manila, which has been gradually evolved through the ages by numberless generations of burly seamen.

When one remembers, also, that the cost of canvas, rope, wire, blocks and spars has more than doubled since pre-War days, that a suit of sails costs almost as much as a latter-day sailing ship's market value, and that insurance rates are all against the old windjammer, it is easy to realise the difficulties and worries and financial losses suffered by those

few old-timers who have clung despairingly to their beloved sailing ships.

Thus it is not to be wondered at that the placid waters inside the Golden Gate reflect the tall spars and web-like rigging of quite a large fleet of idle sailing ships, riding forlorn, neglected, and deserted opposite the wharves of that great city which has owed its prosperity in great part to the ship of masts and sails.

The Down Easters have now followed the famous Yankee clipper, the iron heeler from the Clyde, the green Aberdeen flyer, the lordly East Indiaman, and the high-pooed Spanish galleon into the misty seas and sunny, pleasant anchorages of Kingdom Come.

The Big European "5-Posters"—the World's Largest Sailing Ships

The demand for cheap long-distance transportation of heavy bulk cargoes, such as Chilean nitrate and New Caledonian ore, caused the Germans and French to build and operate extremely large sailing vessels during a period when ordinary American and British wind-jammers engaged in competitive trade were finding it increasingly difficult and often impossible to compete with steam. The European Continental idea was to build big ships, generally fitted with auxiliary power, that would carry tremendous cargoes with a small crew. In addition to several large four-masters (ships and shipentines), the following five-masted steel square-riggers of over 3,750 tons register were built in European yards for Continental owners during the years 1890-1921 inclusive. Of these seven mammoth sailing vessels, the five built prior to 1906 were deemed to be economically sound investments (with government support) in the field of international commerce; the *France II*, built in 1912, was a definite expression of French national pride (1) to keep the name *France* on a big deep-sea square-rigger and (2) to show the world that France could construct and operate the largest sailing ship in the world and not have to go to British shipbuilders to construct her (as France had done when the first big *France* was built in 1890). The *Kobenhavn*, built by the British for the Danes in 1921, was considered not as a possibly profitable commercial venture but as a big ship in which the nation could take pride as she floated in any harbor of the world and which, generally manned by cadets, would be used to train Danish boys to become competent seamen and navigators.

| Name | Year Built | Tonnage | Dimensions in Feet | | | Builder | Nationality |
|----------------|------------|---------|--------------------|------|-------|---|-------------|
| | | | Length | Beam | Depth | | |
| FRANCE II | 1912 | 5,633 | 418.8 | 55.8 | 24.9 | C. & A. de la Gironde, Bordeaux, France | French |
| R. C. RICKMERS | 1906 | 5,548 | 410.5 | 53.6 | 30.4 | Rickmers, Bremerhaven, Germany | German |
| PREUSSEN | 1902 | 5,081 | 407.8 | 53.6 | 27.1 | Tecklenborg, Geestemunde, Germany | German |
| POTOSI | 1895 | 4,026 | 366.3 | 49.7 | 28.5 | Tecklenborg, Geestemunde, Germany | German |
| KOBENHAVN | 1921 | 3,901 | 368.9 | 49.3 | 26.9 | Ramage & Ferguson, Leith, Scotland | Danish |
| MARIA RICKMERS | 1891 | 3,813 | 375 | 48 | 25 | Russell, Port Glasgow, Scotland | German |
| FRANCE I | 1890 | 3,784 | 361 | 48.8 | 25.9 | Henderson, Glasgow, Scotland | French |

Whereas a host of five-masted vessels was built in the United States, none was square-rigged, and all were fore-and-aft schooner-rigged intended for the coastwise trade, having no yards (or square sails) on any mast; moreover, all but one of these American five-masted schooners (the *Kineo* of 2,128 tons, built by the Sewalls at Bath, Maine, in 1903) were constructed of wood. America also built a large number of six-masted vessels, but these were all schooner-rigged, and all but one of them, the *William L. Douglas* (3,708 tons; built at Quincy, Mass., in 1903), were constructed of wood. In 1902 the United States built a large hull to be propelled by sail. The vessel, the *Thomas W. Lawson* (launched at Quincy, Mass., in 1902), was of 5,218 tons gross and 4,914 tons net register (368 ft. long on the water, 395 ft. over-all, 50 ft. beam, and 35 ft. deep) and was fitted with seven masts, all of which carried only fore-and-aft canvas, with booms and gaffs. A sailing vessel of this size, schooner-rigged, was an "unwieldy brute" and a monstrosity. She went ashore at the Scilly Islands in December

1907 and was overturned by wind and waves and destroyed. Whereas Britain built two five-masted square-riggers for Continental owners, it never launched a sailing vessel for British owners that carried more than four masts. A few of the big British square-riggers were full-rigged four-masted ships, but were mostly rigged as four-masted shipentines, with yards on the fore, main, and mizzen and fore-and-aft canvas carried on only the jigger, or spanker, mast.

The big European sailing ships were generally criticized by commanders for their unhandiness, and the most frequent cause of disaster among them was due to lack of stability. The *France I* and *Maria Rickmers*, built on the Clyde, Scotland, in 1890 and 1891, respectively, were very tender ships, and both came to tragic ends because of this defect. The *France I* had a double bottom, with a stated capacity of 2,000 tons of water ballast. On her maiden voyage outbound, she loaded 5,900 tons of coal and came home from Iquique with a stated "6,000 tons of nitrate." In March 1901, the *France I* sailed from England for Valparaiso with a cargo of 5,108 tons of coal and was reported by the bark *Josepha*, about two months later, as being "on her beam ends, deserted, and with her decks swept by every sea." This was the last seen or heard of this big pioneer five-masted steel shipentine. The *France I* was reported to have been moderately sparred and canvased, with her main lower yard only 85 ft. long. The *Maria Rickmers* was more heavily rigged than the *France I* and was equipped with an auxiliary triple-expansion engine that operated a feathering propeller, which, it was claimed, would drive the big five-master "7 knots per hour in a calm sea." This vessel was built for the rice trade between the East and Germany. The *Maria Rickmers*, on her maiden voyage, made a run out from England to Singapore in 82 days. The owners were so disappointed with the passage that they cabled the captain their displeasure, and the skipper, after reading the reprimand, "fell dead on the spot." The mate thereupon took the ship to Saigon, loaded rice, and sailed for Bremen July 14, 1892. Ten days later, the *Maria Rickmers* passed Anjer and "went missing." She had a crew of 40 men aboard, and it was generally felt that she capsized at sea with the loss of all hands.

The *France II*, built for the French ore trade from New Caledonia and the largest sailing craft of all time, was fitted with twin screws, operated by internal combustion motors, which were removed as unsatisfactory prior to her last voyage. About the end of the first World War, this mammoth vessel almost came to grief in the North Sea during some heavy weather. She was knocked over on her beam ends, but a resourceful captain and a capable crew of 50 men, with "a bit of good luck," caused the ship to come through the crisis with safety. In July 1922, the *France II* drifted onto a New Caledonia coral reef near Coya, about sixty miles from the entrance to Noumea, and was a total loss. Possibly, if the vessel had been equipped with efficient and workable auxiliary power, twin screws would have saved her from "drifting" ashore. On one voyage, the *France II* was reported to have carried "8,000 tons of nickel," but in carrying coal out from England, 7,000 tons seems to have been her biggest cargo. The big vessel made some good runs at times and in October 1921, in the Roaring Forties of the Southern Hemisphere, averaged 272 miles for six consecutive days (best day, 322 miles). The claim was made by her commander, Captain Leport, that the *France II* had averaged 14 knots per hour for six consecutive days and had covered 420 miles in one day—which is incredible and could not be substantiated by reference to any log. It would seem that an average of a scant 13½ knots per hour for a day and a scant 11½ knots for six consecutive days, with a spurt speed of about 14½ knots, was the vessel's all-time best sailing performance.

The *R. C. Rickmers* was probably the most successful attempt to build a huge five-masted auxiliary-powered sailing vessel that would carry well and make fast passages and good profits, under very highly competitive conditions with steam, during the last days of merchant sail. This vessel was built by the German family of Rickmers, whose initial venture in this field (the *Maria Rickmers*), fifteen years earlier, had proved so disastrous. The diversity of the cargoes handled by the *R. C. Rickmers* prior to World War I is of interest and clearly indicates that the ship was not built as a "German nitrate clipper" or for any other

special trade. She made three passages with case oil from East Coast U.S.A. ports to the Orient (two to Japan and one to Saigon), averaging 196,691 cases per trip; three passages with rice from the East to Bremen (two from Burma and one from Bangkok), averaging 6,925 tons per trip; three passages with coke from Newcastle-on-Tyne, England, to San Francisco, averaging 6,667 tons per trip; two passages with wheat from Puget Sound to Antwerp, averaging 7,203 tons per trip; two passages with coal from Japan to Singapore and two from Newcastle, N.S.W., to West Coast American ports (one to San Francisco and one to Valparaiso), carrying on an average 7,117 tons of coal on these Pacific runs; one passage with 7,006 tons of cement from Hamburg to San Pedro, Calif.; one passage with a reported 7,300 tons of nitrate (saltpeter) from Taltal, Chile, to Hamburg; and one passage from Vladivostok to Hull, England, loaded with 6,880 tons of beans and hemp seed. The average weight of cargo carried on the above-stated fifteen passages (eliminating the three passages laden with case oil, where the number of cases and not the gross weight of the cargo was reported) is 6,989 tons; whereas the reported designed deadweight capacity of the vessel was stated as 7,500 tons.

The *R. C. Rickmers* reported remarkably short passages even for a ship with very effective auxiliary machinery, but the dates and points of departure of the runs are not available, and the stated length of runs cannot be verified. Two passages from U.S.A. East Coast ports to Japan were reported as averaging 105½ days; whereas the one run to Saigon with case oil was stated as 83 days. Three rice passages from Burma (two) and Saigon (one) to Bremen averaged 92 days. Four westward Cape Horn passages were reported to have averaged only 97 days; while two eastward Cape Horn passages, according to reports, averaged 111½ days. The outbreak of World War I found the *R. C. Rickmers* at a British port, where she was seized, renamed the *Neath*, and sent to sea under the British flag. On a passage from Newfoundland to Cardiff, she stranded, but was refloated and was later sent to the bottom by a German submarine.

The *Preussen* was designed and built for Laeisz and the South American nitrate trade and was known as "the Pride of Prussia." Her length of hull over-all was 433 ft., the molded depth 32.6 ft., loaded draft 27 ft., and displacement 11,150 tons. The deadweight capacity at this draft was stated as 8,000 tons. She had limited water ballast tanks of only 550 tons, but carried a lot of canvas, the main lower yard being 102 ft. long. Moreover, she was the only full-rigged five-masted ship (not shipentine or "barque") ever constructed. The *Preussen* was reported as fast and "a worthy rival" in speed of the *Potosi*, but larger than her sister, which was older by seven years. In November 1904, after rounding the Horn, the *Preussen* is said to have covered 1,008 nautical miles in three days, 1,279 in four days, and 2,085 in seven days (maximum, 347; minimum, 246; and average, 298 miles). When chartered by the Standard Oil Company in 1908 to take a cargo of case oil out to Japan, the *Preussen* had a good chance of showing what she could do in strong, fair winds when running her easting down between Tristan da Cunha and Lombok Strait. In eleven days she covered 3,019 miles, according to reports, an average of 274½ miles per day (maximum, 341; minimum, 218 miles). It is said that on her second outward passage to Iquique Harbor in the nitrate trade, she covered 370 miles on March 21 in a day of 24 hours 42 minutes—a speed of about 15 knots per hour—during the heaviest wind experienced throughout the whole voyage (7 to 8). Other good day's runs reported on this passage were 314 miles on March 15, with a wind force 6, and 307 miles on March 26, with a wind force between 5 and 6. The *Preussen* was wrecked east of Dover on November 6, 1910, when about eight years old.

Claims for speed difficult either to accept or verify have been made for many of the big European four- and five-masted sailing vessels (generally square-rigged on all but the after, or spanker, mast). The *Potosi*, a five-poster built by the Germans in 1895, is said to have made "eleven consecutive voyages between Hamburg and Peru in the average time of 5

months and 20 days, including stays in harbor, and to have shown an average speed at sea of 11 knots per hour." Propelled by canvas alone, no ship in the world—not even the most extreme clipper, with cargo-carrying capacity sacrificed to obtain sharp lines for high speed—has ever shown or could show an *average* sea speed of 11 knots per hour through the weeks and months of steady sailing. The *Potosi*, like other big European windjammers of her class, was equipped with auxiliary power; but such engines, because of fuel consumption, could not be used much between ports on a long sea passage. The *Potosi*, on her maiden voyage in 1895, was reported to have covered 650 nautical miles in forty-eight hours on September 20-21—a speed of 13.5 knots per hour—with an easterly gale behind her; she is said to have sailed during this period 66 miles in one watch of four hours—a speed of 16.5 knots per hour. On her return passage, with a stated "6,000 tons of saltpeter aboard," the *Potosi*, according to reports, averaged 11 knots per hour for eight days of sailing in the North Atlantic, and possibly this achievement has been erroneously elaborated by enthusiastic admirers to mean an average maintained sea speed. On this voyage, the *Potosi* "approached the Lizard at a speed of 11 knots per hour," but encountered head winds. She was five days beating up the Channel, when a Dutch tug took hold of her and towed her for four days to Cuxhaven. On her thirteenth homeward voyage from Iquique, an average good passage, she covered 1,422 nautical miles in the five days from August 4 to 8 inclusive (maximum, 325; minimum, 260 miles per day). In December 1908, when again approaching the English Channel from Tocopilla, South America, the *Potosi*, according to reports, sailed 2,957 miles in eleven days, an average of 269 nautical miles per day and 11.2 knots per hour (maximum day's run, 337; minimum, 226 miles).

Like the other big European sailers of her class, the *Potosi* was unable on several occasions when met at sea "to show her heels" to Bath-built Down Easters or even to full-bodied American-built cargo carriers (both wood and steel), thus indicating a wide discrepancy between a boastful statement of her command and owners on the one hand and actual achievement on the other. It is surprising that in the days of "big brute" sailers, the skippers of such sail-propelled full-bodied tramps talked as if their ships were clippers and capable of equaling or even of beating the records that only ships built primarily for speed could ever possibly make. In 1908 the Bath-built steel shipentine *Erskine M. Phelps* passed the *Potosi* off the Horn in weather that, it would be expected, was more to the liking and advantage of the bigger vessel. The official report of the "*Phelps's*" voyage, however, reveals that on this, as on other occasions, the *Potosi* was outsailed by an American windjammer—and this in no uncertain fashion. "At 6 A.M. the ships were abeam off Cape Stiff in a heavy snowstorm, with considerable wind, and at 5 P.M. the *Potosi* was hull down astern."

The American ships when, as usual, ably commanded, were great sail carriers. The last of the Sewall-built ships, both wood and steel, were full-modeled and heavily sparred vessels, carrying "a wealth of canvas." This they never hesitated to use up to the limitations of the caliber of the crews, which was "bad in the eighties, rotten in the nineties, and impossible following the turn of the century." Moderately sharp-lined British iron and steel ships, some of which were "half" or "part" clippers, could outsail the big fuller-modeled Sewall ships in light weather, but it was generally affirmed: "Nothing under sail can pass them in heavy weather unless they are going in the opposite direction." Capt. Richard Quick of the Bath-built four-masted steel shipentine *Edward Sewall* wrote:

I don't think there is anything afloat that can come up to her in heavy weather. She is not much of a light weather ship, as she is heavy and it takes lots of wind to move her, but when we get strong winds it is fun to see her pass everything she comes up to.

* * * *

I cannot help telling you how well this ship behaves when you get her right down to the worst

kind of weather. I don't think there is another one afloat that behaves any better. . . . Of course we have water on deck and men get hurt, but . . . the men were no sailors [and] had never been to sea before.

To show you how this ship works in a heavy gale. Off the Cape on Nov. 17th [1906] I came up on and passed the 4 masted French ship *Michelet*, 82 days from Brest for San Francisco.

At the time I passed her she was practically hove to under three lower topsails, reefed upper topsails and two staysails, making very heavy weather of it. We were carrying six topsails, three lower topgallant sails, all the courses and three staysails, also two jibs, and going through the water at about eight knots and making fairly good weather.

Some days after, while still off the Horn, came

up on an English 3 masted ship under two lower topsails, reefed foresail, two staysails, and one jib. At that time we were carrying six topsails, three courses with no reefs, three staysails and two jibs. We passed her in very short time. . . . I must say I am very proud of the way she behaves in the heavy seas.

On a passage from New York to Shanghai with case oil in 1902, the *Edward Sewall* fell in with the big four-masted German ship *Robert Räckmers* and an unidentified English ship and "beat them both in sailing and getting to windward." When the Sewall four-masted steel shipentine *Erskine M. Phelps* overhauled and passed the big German "5-poster" *Potosi* off the Horn, it was during a heavy snow squall "with considerable wind," and when Capt. Robert J. Graham retired from the command of the "*Phelps*" in June 1910 and left the sea, he wrote: "The *Phelps* has never yet met a ship which could keep up with her in any wind." The Sewall four-masted steel shipentines built during the period 1894-1902, like the big wooden hulls that preceded them (1889-1892), demanded "plenty of push" and were not very responsive to light airs; but when they got "the big wind," under their driving and able commands, these first- and last-built American steel windjammers were capable of showing their heels to any ship encountered. It is surprising that in this respect they were not beaten by the bigger and later steel sailing vessels built and owned in Europe during the last years of merchant sail, for such ships, as far as model and rig were concerned, were of the same general type (even though the latest European ships were "5-posters" and carried auxiliary power). The reason probably lies in the quality of the command, for the Yankee skippers of the last American-built ships were outstandingly brave and resourceful men, with an uncanny "feel for their ship" and a knowledge of just how much sail she could stand and what could safely be attempted with a ruffraff, thoroughly incompetent crew of "scum and landlubbers." The big European-built windjammers had mechanical equipment for working ship—something that the economy-minded Sewalls considered unnecessary on their ships. The managers of that firm were desk men, not sailors, and did not come in personal contact with the so-called seamen that their captains were compelled to sign on to keep the ships moving. Captain Graham of the *Erskine M. Phelps* wrote the Sewalls of the winches carried on the new foreign ships to handle topsail and topgallant halliards and added:

The Germans have winches for braces. Four men will heave around a set of yards easier than 20 men would pull them around. I saw them on the *Potosi* at Caleta Buena [a Chilean nitrate port]. The captain, officers and the crew all said they worked beautifully. I presume that when the proper

time comes you will build some more ships. If so I strongly advise your looking into the above mentioned improvements [the use of water ballast, steam pumps, etc., and labor-saving mechanism for working ship].

The Sewalls, however, never built any more deep-sea sailing ships after 1902, when the *William P. Frye* was constructed for the Sewall-managed fleet and the *Atlas* for the Standard Oil Company (both four-masted steel shipentines of some 3,380 gross tons register). The United States Government discouraged the building and operation of an American merchant marine; whereas other maritime and naval powers fostered and protected their shipping—not only merchant steam but also sail. The big European windjammers would never have been built without foreign government encouragement, support, and protection. Not only did these ships add to national prestige and serve as an unequaled training school for merchant cadet officers and seamen but also many of them proved to be good money-makers, even when they left protected trades and engaged as carriers over the general long-distance trading routes of the Seven Seas.

Training Square-rigged Ships in Deep-Sea Trade

The *Viking*, a four-masted steel shipentine of 2,952 gross tons, was built at Copenhagen in 1906-1907 for the training of 100 apprentices for the Danish merchant marine. She was rather an unfortunate ship and had an erratic career when owned by the Danes; she was bought in 1929 by Capt. Gustav Erikson, of Finland, for use in the Australian grain trade.

Early in 1914, the Danes, desiring to own a training ship still larger than their four-masted shipentine *Viking*, placed a contract with British builders for a fine new ship; but when the war broke out, the British Admiralty took over the ship being constructed and made an oil fuel tender out of her. After the war, a new five-masted shipentine was built for the Danes at Leith, which was to be "something like the *Potosi* in rig and also fitted with a 4-cylinder Diesel engine and feathering propeller capable of driving her about 6 knots per hour, but to be modelled and fitted out as a superior training ship." This new vessel, named the *Kobenhavn*, when completed in 1921, was the largest sailing ship ever built in the British Isles. This five-master had a displacement of 7,900 tons and a deadweight capacity of 5,200 tons on 24-ft. draft.

The *Kobenhavn*, notwithstanding that she was a Danish training ship, made good and successful commercial voyages. On her maiden voyage, in addition to the captain, 4 mates, 3 engineers, a schoolmaster and a doctor, 4 in steward's department, 2 boatswains, a carpenter, a sailmaker, and a wireless operator, the ship carried a crew of 28 seamen and 18 apprentices, or cadets. Later, the *Kobenhavn* carried no seamen and even no boatswains, their work being done by the leading and older boys. The number of such boys carried was increased from 18 to 60, the accommodations on the vessel being rearranged accordingly. In 1925 the big "5-poster" made a passage from London to Bangkok in 64 days via the Suez Canal, and in 1927 the ship passed through the Panama Canal on a passage from Liverpool to Chile and later made for Callao for repairs, as she had "lost a propeller blade." On the homeward passage with nitrate, the *Kobenhavn* ran from Caleta Coloso to Danzig, where she arrived January 7, 1928, after a run of 81 days. In 1925-1926, the ship carried timber from the Baltic to Melbourne and returned from Banjowangi to Copenhagen in 86 days. She then ran out to Adelaide in 78 days, and it was claimed that on this passage she made the run from the Lizard in only 67 days and, between the Cape of Good Hope and destination, averaged 11 knots per hour for 21 days when running her easting down in the Roaring Forties, her best twenty-four-hour run being 305 miles. Returning from Australia in early 1927, the *Kobenhavn* was 109 days from Adelaide to Falmouth, from where she proceeded to Liverpool for discharge.

In 1932 the auxiliary full-rigged ship *Danmark* of 900 tons was built in Denmark for the Danish Ministry of Shipping and Fisheries for use as a training ship, and she made many deep-sea voyages, being at New Orleans, La., in 1936.

The European maritime nations built sailing ships for the training of seamen, and most seafaring nations, until comparatively recently, refused to grant officer's certificates except to candidates who had served a specified number of years in sailing ships. At the turn of the century, the North German Lloyd decided to provide sailing ships for the training of its own officers and built the *Herzogin Cecilie*, a four-masted steel shipentine of 3,242 gross tons register, in 1902 at the Rickmers yard at Bremerhaven. This vessel was built to sail well, carry good cargoes, and be a worthy member of the German mercantile marine. She was a lofty ship and carried a total canvas spread of 56,000 sq. ft. Steam capstans and halliard winches were intentionally omitted from her equipment, as she carried a large

number of cadets, and no labor-saving devices were desired on a ship whose prime reason of existence was the training of boys and young men to be seamen. On her maiden voyage, the vessel carried a captain, 4 officers, 2 schoolmasters, a surgeon, 15 paid hands (which included the stewards and petty, or warrant, officers), 6 third-year apprentices rated as able seamen, and 59 other apprentices, or cadets. On this voyage, she ran from the Lizard to Montevideo in 53 days; thence to Portland, Ore., in 66 days, returning from Astoria to Falmouth "for orders" in 105 days. In 1904 she went from Dungeness to San Francisco in 112 days, in 1908 was 78 days from Beachy Head (England) to Adelaide, and in 1910 ran from Mejillones to the Scilly Isles in 63 days. When the first World War broke out in 1914, the *Herzogin Cecilie* was on a nitrate voyage, and she was interned at Coquimbo on the West Coast of South America. After hostilities ceased, she was allocated to the French and sailed from Antofagasta in October 1920 for Ostend, where she was damaged upon arrival by running into the quay. Shortly thereafter, the ship was bought for £4,000 by Capt. Gustav Erikson and went under the Finnish flag.

Besides building the *Herzogin Cecilie*, the North German Lloyd bought the ship *Albert Rickmers*, which had been built by the Rickmers yard at Bremerhaven in 1894, and renamed her *Herzogin Sophie Charlotte*. After World War I, this ship was handed over to the British Shipping Controller, and in 1923 she was sold on the Baltic Exchange, without reserve, for £1,500. Captain Erikson, of Finland, the buyer, renamed her *Penang*. Another German cadet ship, the three-masted ship *Grossherzogin Elisabeth* of 1,260 tons, was built by Tecklenborg, of Wesermunde, in 1901, and she remained under German colors throughout the war. In 1926 the German Training Ship Union placed an order with Tecklenborg for a ship of the same size and type as the *Grossherzogin Elisabeth*, and the new ship, built to accommodate 180 cadets, was named the (*Schulschiff*) *Deutschland*. The German Training Ship Union and the Association of German Shipowners also made arrangements in 1927 with the firm of Laeisz, of Hamburg, engaged in the nitrate trade between Chile and Germany, by which four of its sailing ships were fitted with accommodations and carried 40 cadets each.

Before the first World War, the full-rigged three-masted ship *Prinzess Eitel Friedrich* was built in Germany as a training ship for merchant marine cadets. After the war, she was handed over to France and laid up at St. Nazaire. In 1929 the Polish Government bought her, installed a Diesel motor, renovated the ship, and fitted her out to serve as a training ship for 100 Polish cadets, renaming her *Dar Pormorza*. In 1931, after a visit to the United States, the ship made a passage from New York to Copenhagen in 27 days.

In 1933 the auxiliary steel bark *Gorch Foch* was built by Blohm & Voss, Hamburg, for the training of merchant marine cadets. This vessel of 1,330 tons was equipped with a 400-H.P. engine capable of driving her at a speed of 8 knots per hour and was electrically equipped throughout. In 1936 the steel bark *Horst Wessel* of 1,500 tons was built by Blohm & Voss, Hamburg, for the training of German merchant marine cadets.

In 1929 the full-rigged steel ship *Laënnec* of 2,259 tons, built at St. Nazaire, France, in 1902, was serving the North German Lloyd Company as a training ship under the name *Oldenburg*. This ship was acquired in 1930 from German owners by the Finnish Government for use as a schoolship and renamed *Suomen Joutsen*.

As late as 1936, the Germans appreciated to such an extent the advantages of training their cadet officers in sail that the North German Lloyd Company, of Bremen, purchased the four-masted auxiliary steel shipentine *Magdalene Vinnen* of 3,476 tons gross and 3,017 tons net register, which had been built in 1921 by Krupp at Kiel, Germany. The Germans made a training ship out of her and renamed her the *Kommodore Johnsen* after the old and respected commodore of the North German Lloyd fleet of transatlantic express steamers. This vessel had a sizable Diesel engine for auxiliary propulsion, electric light plant, and steam appliances for working ship. She measured 329 ft. long, 48 ft. 2 in. beam, and 26 ft.

8 in. depth of hold, with a mainmast 179 ft. long, a main yard 100 ft. long, and double topsails, double topgallant sails, and a royal yard 48 ft. long. With the North German Lloyd operating the training ship *Kommodore Johnsen* in commerce, under canvas, the Hamburg American Line acquired the old Belgian training ship *L'Avenir* from Capt. Gustav Erikson, of Finland, refitted her to accommodate cadets, and renamed her *Admiral Karpfanger*. This vessel, when carrying grain from Australia to Europe, "went missing" in 1938, and none of the 60 persons aboard, mostly cadets, was ever heard of again.

The Belgians, for many years, operated two sailing ships for the training of merchant marine officers. An old British ship, *Linlithgowshire*, renamed *Comte de Smet de Naeyer*, permanently moored at Ostend, gave about a hundred cadets a preliminary course in seamanship, following which they were drafted to get experience on the seagoing Belgian training ship *L'Avenir*, a four-masted steel shipentine of 2,738 gross and 2,074 net tons register, with a deadweight capacity of 3,400 tons. She had been built by the Rickmers yard at Bremerhaven in 1908 for the Association Maritime Belge. This vessel had accommodations for 60 cadets. Her usual runs were between Antwerp and Florida, although she made occasional passages to Australia. *L'Avenir* was bought in 1932 by Capt. Gustav Erikson, of Finland, for use in the Australian grain trade. Apparently, this ship was later sold by Erikson to the Hamburg American Line to be used as a training ship in sail for young officers for its steamships. As before mentioned, this vessel (renamed *Admiral Karpfanger*), on a grain passage from Australia to Europe with 60 crew and cadet officers aboard, was posted missing in October 1938.

The small auxiliary steel barkentine *Mercator* of 770 tons was built at Leith, Scotland, in 1932 for the Association Maritime Belge to replace the much larger shipentine *L'Avenir*, which had been sold after serving twenty-four years as a training ship. It was said before World War II: "The *Mercator* makes a summer cruise every year in European waters while preparing the first year cadets of the Navigation School of Antwerp. About October, usually, she sails on a long cruise with a complement of students who have terminated their two years' course and who have been graduated. She also takes several apprentice-sailors." In 1936 the *Mercator* ascended the Amazon River as far as Manaus. She was powered with a 500-H.P. Diesel engine.

The Finnish training ships *Fennia* and *Favell* were British ships, built in the early 1890's, and were bought before World War I to be used as cadet ships for the sea training under square-rigged canvas of Finnish merchant ship officers. Both vessels engaged in deep-sea trade. The *Fennia* was dismasted off Cape Horn while carrying coal from Cardiff to Valparaiso in March 1927 and was towed into Port Stanley (Falkland Islands). The cargo was salvaged, and the hull, which was sound, was converted into a hulk.

The Norwegian Training Ship Association managed the cadet ship *Sorlandet* of 577 tons, which, built in 1927 for Mr. Skjelbred, a leading shipping man of Norway, was presented by him to an institution of Christiansand for the training each year of boys for the Norwegian merchant marine. This little ship carried no cargo, and the boys undergoing training had a five-month course on her, after which they were drafted to one of the deep-sea ships of the Norwegian merchant fleet. Aboard the *Sorlandet*, the cadets did all the ship's work, were divided into watches, and all had their stations and duties. The little full-rigged steel ship made deep-sea runs and in 1933 visited the World's Fair at Chicago, going by way of the St. Lawrence River and the Great Lakes.

The Swedes, like the Germans, holding that sailing ship experience was necessary before an applicant could obtain an officer's certificate, bought the British three-masted ship *Dunboyne* of 1,428 tons (built in 1888) from the Trans-Atlantic Company at Gothenburg in November 1923. The Swedish Government fitted her out as *Af Chapman* for the training under canvas at sea of 200 boys.

A French marine training organization, known as the Societe des Navires-Ecoles, founded by the leading shipowners of France, obtained from the French Government after World War I the German four-masted shipentine *Pola* of 3,100 tons, which had been built by Blohm & Voss at Hamburg in 1916. This ship, renamed the *Richelieu*, was conditioned by the French for the training of cadet officers in square sail at sea. In 1925 she carried grain from Australia to Liverpool, and following a lay-up at Brest, she went to Baltimore to load pitch for L'Orient. When the cargo was nearly all aboard, an explosion occurred in one of the holds, which killed two stevedores, injured about thirty persons, and caused the vessel to sink. The unfortunate ship was lost, and she floated only long enough to give the crew and cadets time enough to get away.

In 1931 the Italian Government built at Castellammare, Italy, the two auxiliary steel full-rigged training ships *Cristoforo Colombo* and *Amerigo Vespucci*. These ships were sisters of 3,543 tons (length 249 ft., beam 51 ft., depth 24 $\frac{3}{4}$ ft.), and each had two Diesel-driven generating units, driving a single screw, capable of giving the vessels a speed of 10 $\frac{1}{2}$ knots under oil power alone and a radius of action of 6,000 miles at a cruising speed of 8 knots. It is evident that these ships were built to train cadets for the Italian Navy in the working of sail at sea.

In 1937 the Portuguese Government owned the *Sagres* and operated her as a training ship. This vessel was a steel bark that was built at Glasgow in 1904 for the Asiatic Steam Navigation Company, of Liverpool, and named *Maharaja*; she was later named the *Maharani* and still later, before she was acquired by the Portuguese, was the Japanese bark *Zuisho Maru*.

In 1930 the ship *Ares* was reconditioned and fitted out as a training ship to accommodate 50 Grecian merchant seamen cadets.

The four-masted steel shipentine *Lauriston* of 2,453 gross tons, built by Workman, Clark and Company at Belfast, Ireland, in 1892, after changing hands several times, was bought by Soviet Russia in 1919 and in 1925 was refitted as the training ship *Tovarisch*. Shortly after, she was at Port Talbot, England, where the master left the ship, and she was taken back to Leningrad by a woman. During 1928, when en route for Buenos Aires with a full complement of cadets, she collided with and sank an Italian steamer off Dungeness, England. The Russian-owned vessel was severely censured for her behavior during and after the accident, following which she sailed to the Black Sea and stayed there.

The Argentine Republic had built in 1897 at Birkenhead, England, a fine steel, wood-sheathed and coppered full-rigged three-masted sailing ship of 2,750 tons displacement, fitted with auxiliary steam power. She was built as a training vessel, with accommodations for 400 men and boys. This ship, named *Presidente Sarmiento*, carried an armament of four sizable guns, had a Bevis feathering propeller, and did most of her cruising under sail alone. However, it is claimed that she did "15 knots under steam"—a statement that is doubted unless the ship was traveling under full sail with a strong favorable wind and used her engine merely to add a little more speed to a fast-moving vessel. The *Presidente Sarmiento* visited England in 1902, 1918, and 1925 for the Naval Reviews.

In 1933, Vickers-Armstrong, Ltd., of Barrow-in-Furness, England, built the auxiliary steel four-masted barkentine *Almirante Saldanha* for the Brazilian Government to be used in the training of Brazilian cadets. This sailing vessel had four yards on the fore, and on the other three masts she had fore-and-aft sails, with standing gaffs. She was of 3,325 gross tons register and was a high-sided vessel. In 1934 she traveled 9,800 miles at sea with cadets; in 1935, 21,156 miles; and in 1936, 22,400 miles.

The Chileans, feeling the need of training some of their countrymen in the handling and operation of ships at sea, fitted out the training ship *General Baquedano*, which was in service in the late 1930's.

The *Taisei Maru* was an auxiliary twin-screw four-masted steel shipentine of 2,439 gross tons, built by the Kawasaki Dockyard Company, Ltd., at Kobe, Japan, in 1904 for the

Tokyo Nautical Naval College, Japan, for the training in square-rigged sail of merchant marine officer's cadets who had finished navigation courses in the nautical schools ashore. The ship, which was 277 ft. long, $42\frac{3}{4}$ ft. beam, and 24 ft. depth of hold, crossed royals above double topsails and double topgallant sails and was a fine-looking square-rigger with steam auxiliary power.

In 1924 the Mitsubishi Dockyard Company, Ltd., at Kobe, Japan, built the auxiliary twin-screw four-masted barkentine-rigged steel training vessel *Shintoku Maru* of 2,519 tons (length 280 ft., beam 44 ft., depth $26\frac{1}{2}$ ft.) for the Department of Education, Institute for Nautical Training of Tokyo, Japan. This vessel was intended "for the sail training of merchant marine officer's cadets who have finished navigation courses in the nautical shore schools." Originally fitted with single standing gaffs on the main, mizzen, and jigger masts, she was changed in 1929 to carry double standing gaffs. In October 1935, during a violent typhoon, the *Shintoku Maru* reported "a roll of 56 degrees to starboard." In 1936 it was recorded that up to that time the vessel had made twenty-four training cruises to California, Hawaii, New Zealand, Australia, and the South Sea Islands, covering in all 235,000 miles.

In 1930 the Kawasaki Drydock Company, Ltd., of Kobe, Japan, built the steel training ships *Nippon Maru* and *Kaiwo Maru* to the order of the Department of Education, Institute for Nautical Training of Tokyo, "for the sail training of merchant marine officer's cadets who have finished navigation courses in the nautical shore schools." The term of training cadets was "usually one year," and the cruise was divided into two or three voyages aggregating seven or eight months. "According to the season of the year, the ships sail in home waters or the North or South Pacific." These Japanese training ships were sisters of 2,284 tons (length 260 ft., beam $42\frac{1}{2}$ ft., depth of hold $21\frac{1}{4}$ ft.) and were rigged as four-masted shipentines, this work being done by Ramage & Ferguson and Company, Ltd., of Leith, Scotland. Auxiliary propelling power consisted of twin screws driven by Diesel engines, and it is said that the motors were of 1,200 H.P. and drove the vessel, without sail, at a speed of $11\frac{1}{2}$ knots per hour. This auxiliary power was supposed to be used only in making or leaving port. During the years 1930-1936, the *Kaiwo Maru* made fourteen long training voyages and many short passages and, it was reported, was 995 days under weigh and covered 105,505 miles. Of this distance, 86,085 miles were covered in sailing $89\frac{1}{2}$ days and 19,420 miles in $103\frac{1}{2}$ days. This speed figures an average of exactly 4 knots per hour under canvas and 7.8 knots per hour under power (which is very different from the stated full power speed of $11\frac{1}{2}$ knots).

The Training of Officers for the Merchant Marine in Deep-Sea Square-rigged Sail

Basil Lubbock, the British marine historian, in *THE LAST OF THE WINDJAMMERS* (Vol. II, Part II, published 1929), makes an excellent plea for the training in deep-sea square-rigged sail of officers of the mercantile marine; but he has omitted to mention that the United States, like Britain, does not require such training on the part of applicants for officer's certificates. Lubbock says in part:

The finest square-rigged deep-water sailing ships afloat to-day are the foreign training ships. The Dutchmen and Dagoes, the Souwegians and Finns, and even the Greeks, all recognise the value of sail

training, and have sailing ships going deep water for this special purpose. It is only the British who allow steam trained apprentices to become officers in their Mercantile Marine.

Most of the shipowners, and even some of our shipmasters, pretend that steam trained apprentices are good enough for the job of navigating our present-day ships, but our modern shipowners are nothing more or less than financial wizards, masters of organisation who, with but very few exceptions, have fought their way to the top of vast business combines from the office stool of the poorly paid shipping clerk. Those shipowners who have had a sea training can be counted on the fingers of one hand, and it is only they who can appreciate the necessity for a harder training than that given to an apprentice in a well found steamer.

This harder training, as is recognised by the Germans, and all other seafaring nations, can only be found in the ship of masts and yards. I do not think that the all-round seamanship, nor even the invaluable sea-sense, which are obtained by a training in sail, are by any means the most important advantages gained over a training in steam, but it is the splendid character-making traits of self-reliance, presence of mind, alertness of brain, quickness of decision, and endurance of physical stress and nerve strain which are the priceless fruits of the hard times and knocking about experienced in life at sea under sail.

My contention is that the safe, easy life of a steam trained apprentice is no testing of a boy likely to become an officer, who in future years may have thousands of lives in his charge, and who, by a want of decision, a lack of grit, or a breakdown of nerve, may sacrifice those lives in a few moments of heartrending tragedy. . . .

If it is hard for a man to tell himself how he will behave under certain strains and stresses, it is still harder for his employer to know, and the only safeguard for that employer can be the knowledge that the man has come through a training which has thoroughly tested out the qualities necessary to fight those grim opponents, wind and sea. . . .

A seaman signed on as one of the crew of a modern steamer generally knows but little or nothing about the sea in the sense of an old A.B. and shellback of square-rigger days. His work is chipping rust, painting, cleaning, washing decks, etc., and he is, in fact, usually "unskilled labor" employed at sea. What he knows of handling hawsers, dropping and raising the anchor, lowering boats, operating winches, etc., he picks up at sea, and after years of service in steamships, he is essentially a landlubber. The days have passed when young officers experienced only in steam are helped by old fore-castle hands brought up in square-rigged deep-sea sail, and both the deck hands and young officers are pathetic at times in their ignorance. Cadets (or apprentices) are seldom trained in the essentials of practical seamanship, and what they have not learned and do not know, they cannot teach. The United States, with its splendid history in sail and its outstanding traditions, should have found it easy to train cadet officers in square-rigged sail; but because of false economy and politics, it chose the easy way, with the result that the United States is one of the most backward of all maritime nations in the practical training of marine officers—both mercantile and naval—and in the caliber of the crews of its vessels. To build and operate sizable deep-sea square-rigged sail (preferably with auxiliary power) for the training of cadet officers for the mercantile marine and to operate square-riggers in trade on the Seven Seas would have cost money, but it would have been money well invested in the national interest. However, a country that

A training in sail means a training in endurance, which certainly cannot be said of steam. . . . Sail handling in bad weather is nothing more or less than a fight between man and the elements. . . . One cannot help but gain strength of wind and muscle [health], as well as strength of spirit, in such a contest. . . . The safe, easy drudgery which makes up the life of the steamship seaman can always be suddenly overset by the breath of the storm wind, by the unforeseen accident, or by such enemies as fire and ice, and then the qualities of resolution, resource and endurance, which can only be produced by sail training, are badly needed. It may be argued that the training given to an apprentice in steam is sufficient for his needs, but what is this training beyond ship cleaning, bridge work and perhaps navigation? . . .

The reason usually given for the abandonment of the training squadrons and the brigs in the Royal Navy was that it was impossible to give every officer and rating a course in them, and the same argument has been put forward by shipowners to explain why they have made no attempt to preserve sail training in the Mercantile Marine. But the fact is that it is entirely a matter of expense. Rather than put their hands in their pockets our shipowners are ready to put up with officers who, although they may be scientific navigators and very knowledgeable on such subjects as mechanics, are not full-fledged seamen in the real sense of the word, nor yet in a great number of cases, A1 subjects in the matter of health. . . .

In making this plea for sailing ship training, . . . one cannot help feeling a bit sore when one sees that even such a demented nation as Russia recognises the value of sail training. The fleet of training ships, both naval and mercantile, is now [1929] a very fine one indeed, but not a single one of them hoists the British [or the American] flag.

has consistently refused to encourage, foster, and protect its foreign trade merchant marine could hardly be expected to spend money to train either officers or seamen to operate such vessels in the national interest.

After an appropriation was made by Congress at the urging of some "old-fashioned" marine authorities who sensed the value of training in deep-sea sail for the country's budding naval officers, the U. S. Navy built the square-rigged sailing ship *Chesapeake* at Bath, Maine, in 1898-1899 to be attached to the U. S. Naval Academy at Annapolis and, it was said, "used in training cadets in the operation of square-riggers at sea." This sounded like a step in the right direction, but the actual results were ludicrous. The Bureau of Construction and Repair of the U. S. Navy Department had its draftsmen make the plans of a vessel to be propelled by sail alone and built of steel, with the underwater hull sheathed with wood and coppered as if she were intended to go on long voyages to remote parts of the world, where dry-docking facilities for cleaning and painting the ship's bottom would not be available. The hull—entirely void of grace, with high sides, a heavy boxy stern, and an elongated bow that looked as if it had been stretched out to try to catch up with a ridiculously long jib boom—was 175 ft. long, 37 ft. beam, 27 ft. 9 in. deep and at a draft of 16 ft. 6 in. had a displacement of 1,192 tons. The vessel (rigged at the Navy Yard and not at Bath, Maine) had a lower course, single topsail, single topgallant sail, and royal on each of her three masts and thus qualified as being a full-rigged ship; she also carried tremendous head sails (foresail, jib, and flying jib). The name of the vessel was later changed to U.S.S. *Severn*.

This little naval training ship was built by a nation that, since its birth, had led the world in the design, construction, and operation of sailing vessels and in the practical quality, speed, and beauty of its ships—both mercantile and naval. The draftsmen in Washington responsible for the design of the *Chesapeake* had had no experience in the designing of sailing vessels, and the naval constructor in charge, feeling quite self-sufficient (and evidently unsympathetic toward the project), made no attempt to bring practical sailing ship designers, builders, and operators into the picture as consultants. The accumulated experiences of a century were ignored, a tremendous reservoir of plans and models of wonderfully successful square-rigged ships was also ignored, and the result was a most amateurish design of a very ugly little ship that, with justice, was called "a national disgrace." To add to the irony of it, the *Chesapeake*, whose plans were approved by the ranking officials of the Navy Department, was built by contract at Bath, Maine, "The City of Ships," where had been built the very finest and most successful deep-sea wood square-riggers throughout the last half of the nineteenth century, where had been launched the first ship built in America and the last wood square-rigger, and where was then being constructed America's only fleet of deep-sea steel square-riggers, which were to see service on the Seven Seas to the end of the era of sail. The *Chesapeake*, as was to be expected under the system of training of naval cadets in effect at Annapolis, became a sort of toy of the academy. She was never taken seriously as a training ship on which the cadets would be taught to operate square-rigged sail on a deep-sea ocean voyage. The old established system of book instruction went on unchanged at Annapolis, and for a while the cadets took a brief summer vacation or a sort of yachting cruise in protected waters. As a training ship to teach the country's coming naval officers the practical operation of deep-sea square-rigged sail, the *Chesapeake* was a joke and merely another instance of the waste of taxpayers' money. As an aesthetic creation, the vessel was an insult to the memory of the American designers and builders of a vast fleet of the world's most beautiful and efficient ships, dating from the privateers of the War of Independence and the War of 1812 through the pre-clipper, packet, clipper, and post-clipper ship eras to the "Queen of the Down Easters," built at Bath, Maine, in 1884.

The German and French Nitrate "Clippers"

The West Coast of South America is a long, arid, inhospitable stretch of shore line facing the South Pacific; it is void of vegetation, has no good, safe harbors, and during the not uncommon storms, tidal waves, and earthquakes is a dangerous coast for shipping and particularly for wind-propelled vessels. Its first export trade was in silver mined inland by Indians under Spanish domination and shipped by galleons to Spanish possessions such as the Philippines. Later, copper ore was transported from the interior to the coast, at first tediously and with difficulty on the backs of llamas, and shipped to Europe, and the "little Welsh copper ore barks" became prominent in the handling of it. Principally on the Chinchas and other Peruvian islands, guano was dug by Chinese coolies, working under pitiful and very unhealthy conditions, and shipped on vessels that, commencing in the early fifties following the California Gold Rush, were clamoring for any kind of return cargo on their Cape Horn voyages to the Pacific. The guano, which is a substance composed chiefly of the excrement of sea fowl and which had accumulated through the ages, solidly packed to great depths (50 to 200 ft.), was found of great value as a fertilizer and was in demand in North Atlantic markets. Finally, the West Coast became the loading station of nitrate mined in the great salt desert of Tarapaca; whence it was transported by pack mules and donkeys in the early days, with the animals suffering and having a short life due to the shortage of food and water, for no vegetation, springs, streams, or wells were on the trails. In later years, the nitrate was carried from the mines to the coast by rail; in some cases the material was loaded into cars and run from the heights to the lighters on a mono-rail by means of a wire cable. None of these natural and available West Coast of South American products could be considered as desirable for ships looking for first-class cargoes to transport, but when nothing better could be found, economic conditions required that even the best of ships handle these commodities. There came a time when the finest merchant sail was not only glad to handle the originally despised Peruvian and Chilean products but also fought bitterly for cargoes and for privileges and rights in the trade.

For many long years, British sailing ships outnumbered those of any other nationality on the West Coast of South America, but they were generally slow second-raters, participating in an inferior trade. No British or American shipping firms thought well enough of the Chilean nitrate trade and of its possibilities to specialize in it; this was left for Reederei F. Laeisz, of Hamburg, Germany, and Antonin Dominique Bordes, of Bordeaux, France. Bordes and Le Quellec were in the shipping business from 1847 to 1868, and upon Le Quellec's death, Bordes carried on alone and proved himself to be an able, self-reliant, and farsighted man of courage in the shipping world. From the early days of the firm, its relatively small wood ships had carried mixed cargoes and passengers from Bordeaux to Valparaiso, but in those days they could not get full cargoes of nitrate for the return passages and often took months to pick up sufficient freight of any kind for a return cargo. Following Bordes' getting full control of the business and when the market value of British sail and construction prices were low, the French shipping man had built in six different British yards eleven iron ships of from 681 to 735 tons and four iron barks of from 581 to 683 tons. These iron sailing vessels were all launched during the period from December 1868 to the end of 1870 and were added to a fleet of six small iron vessels built in France (1866-1870), one iron ship built at Glasgow in 1860, and nine French-built wood ships. Seven of the nine were small (364 to 709 tons; built during the period 1849-1867), but two were sizable—the *Chili* of 1,277 tons, built in 1856 (sold in 1883), and the larger *Victorine* of 1,621 tons, launched at Bordeaux in 1858 (lost in 1875).

With this large fleet of iron and wood ships, Bordes gave much attention to the possibilities of nitrate to solve his problem of return cargoes for his fleet of West Coast ships, worked on the lightering and stevedoring problems, and in 1870 imported the first cargo of nitrate into France "for the benefit of French agriculture." During the period 1872-1876, Bordes built eighteen wood ships of from 608 to 1,022 tons at La Roque and Bordeaux, France. In 1874 he built the iron ship *Valparaiso II* of 1,239 tons at Glasgow and, in 1879, the iron ship *Victorine II* of 1,217 tons at Dundee. By the end of the seventies, the Chilean nitrate trade was increasing by leaps and bounds. In 1882, after thirty-five years in the West Coast South American business, Bordes ordered his first ship of over 2,000 tons, the four-masted iron shipentine *Union* of 2,139 tons, which was built by Russell & Company on the Clyde. A. D. Bordes, in that year, took his three sons into partnership, and the firm became Ant. Dom. Bordes et Fils.

On May 28, 1883, A. D. Bordes, the founder of the business, died. He had built up a great and profitable trade, and his sons, benefiting greatly by his shrewd and farsighted development work and knowing well their father's views and plans, carried on. Depots for the storage and sale of nitrate were established at Bordeaux, La Rochelle, Nantes, Dunkirk, and at strategic interior distribution points in France. The Bordes firm continued to build sizable vessels for its nitrate fleet, and Thomson's Glasgow yard launched for it the *A. D. Bordes* of 2,230 tons in 1884 and the *Perseverance* of 2,511 tons and *Tarapaca* of 2,408 tons in 1886. (The *Perseverance* "went missing" in 1892, and the *Union* and *Tarapaca* were sent to the bottom by the Germans in 1914 and 1917, respectively.) In 1888 the *Cap Horn* of 2,608 tons and *Dunkerque* of 2,987 tons were built by Russell on the Clyde for the Bordes firm, and in 1889 it obtained the *Nord* of 2,905 tons from the Barclay, Curle yard.

In 1890 the Bordes sons, while exhibiting the enterprise and initiative of their father, threw his caution aside and ordered the first five-masted sailing ship ever built in the world to be constructed for them at the Henderson yard on the Clyde. This ship, especially designed for the carrying of nitrate, was named the *France*, and particulars of her are given elsewhere. With four steam winches at each hatch, the *France* discharged 5,000 tons of coal and loaded 5,500 tons of nitrate at Iquique in eleven days. She carried a crew of 46 all told and sailed well considering her model fullness, but was rather crank and always required careful handling. In January 1897, the *France* brought up in Dungeness Roads on her way to Dunkirk to discharge, and while lying motionless at night, with a riding light and a lantern hung over her stern, she was rammed and considerably damaged by the British cruiser H.M.S. *Blenheim*, which sought to steam at a speed of 13 knots between the two lights showing on the *France*. The *Blenheim's* command claimed that he mistook the lights for those on fishing boats. The French had cause to criticize severely both British seamanship and British justice; for in court, Lord Esher ruled that "the riding light forward was necessary and sufficient, and the stern light [placed to protect the big ship from being run into astern] a source of error." Of course, the British Admiralty, the defendant in the case, concurred in the ruling, and the command of the H.M.S. *Blenheim* was not court-martialed or officially censured. In 1901 the *France*, bound to Valparaiso with a cargo of English coal, capsized and was lost at sea with all on board.

After the adding of the *France* to the fleet, the Bordes sons built no more ships for several years; but fourteen British ships were bought during the balance of the century, most of which were small and only four of over 1,500 tons. The largest were the four-masted shipentine *Melita* of 2,658 tons (renamed *Marthe*) and the *Knight of St. Michael* of 2,055 tons (renamed *Pacifique III*). During the latter part of the nineties, the French sailing ship bounty (of 1 franc 70 cents per gross ton per 1,000 miles) was in effect, and this government subsidy gave the Bordes firm "a mighty shove forward" and, it is said, "slowly put her foreign rivals out of business." Building bonuses figured on gross tonnage also greatly encouraged

the construction of French sailing ships in France. The first Bordes ship to benefit by this bonus was the *Dunkerque* of 3,338 gross tons (only 2,498 net tons), built by La Porte at Rouen in 1897, and while this vessel was being constructed, the French ship *Marguerite Molinos* was built at Havre for the Societe des Voilers Francais, of which records are available showing the extent of benefit that flowed to the owners through the operation of the French building and navigation bounties. The vessel was a three-masted bark of 2,005 gross tons, which cost her owners only 515,082 francs (or 257 francs per ton), as the government paid the builder 130,325 francs (or 65 francs per ton). During her first year of service, the *Marguerite Molinos* made three passages, on which she made a profit for her owners of 244,230 francs. This was equivalent to 47.4 per cent of the total net cost of the ship to them and can be set forth as follows:

| No. of Passage | Cargo | From | To | Freight Revenue in Francs | Mileage |
|---|--|---------------|------------------------|---------------------------|---------|
| 1 | Coal | Cardiff | San Francisco | 51,875 | 13,551 |
| 2 | Wheat | San Francisco | Havre | 91,875 | 13,627 |
| 3 | Coal | England | Majunga, Madagascar | 29,605 | 7,743 |
| Total of 3 passages made in one year..... | | | | 173,355 | 34,921 |
| Expenses; deduct from Freight Revenue: | | | | | |
| | | | <u>Francs</u> | | |
| | Interest on borrowed capital..... | | 10,095 | | |
| | Management charges | | 5,333 | | |
| | Bonus to captain..... | | 3,350 | | |
| | Expenses on passages..... | | <u>29,375</u> | | |
| | Total expenses | | 48,153 | 48,153 | |
| | Net operating profit for year..... | | | 125,202 | |
| | French navigation bounty..... | | | 119,028 | |
| | Total profit to shipowners for year..... | | | 244,230 | |

French navigation bounty at 1.70 francs per ton per 1,000 miles is 1/10 of 1 per cent of 34,921 x 1.7 x 2,005 or 119,028 francs.

The Bordes ship *Jacqueline* of 3,017 gross and 2,434 net tons was built at La Seyne during the first part of 1897. On her maiden voyage, which was with a cheap cargo of tiles out to Australia and thence across the Pacific to the West Coast of South America, where she loaded with nitrate for home, she was paid a French navigation bounty of 160,000 francs for her nine months' work. Therefore, it is not surprising that a British authority said: "Under such conditions French sailing ship owners could afford to be indifferent about such small matters as bad freights." Lubbock, the British historian, in THE NITRATE CLIPPERS, says: "It was declared that out of 10,500,000 francs allotted as sailing ship bounties during the first 59 months the bounty had become law, that is up to the end of 1897, the great [Bordes] firm had received nearly two-fifths of it" (or a nice "little" present from the French Government of some 4,200,000 francs to protect and encourage the use in foreign trade of deep-sea French merchant sail). However, Bordes et Fils asserted that it cost six and a half million francs to maintain and run the enormous fleet and that the navigation bounty received represented only about one-sixth of this total amount.

The first order of the Bordes firm for the building of bounty ships in France was placed in 1895 with the Ateliers et Chantiers de la Loire at Nantes, which launched the four-masted steel shipentine *Madeleine* in January 1896, the *Caroline* (lost in 1902) in May, and the *Montmorency* in June of the same year. These ships were sisters (322 ft. long, 45 ft. beam, and 25 1/2 ft. depth) and measured 3,010 tons gross and 2,375 tons net register. In the first part of 1896, the Bordes sons also built at La Seyne the *Wulfrun Puget* and *Perseverance* (submarined by the Germans in 1917) of similar size at the plant of the Forges et Chantiers de la Mediterranee, and between October 1896 and June 1897 the La Seyne yard also launched

for them three more ships, built from the same plans and model, which were named the *Rhone*, *Antoinette* (lost in 1918), and *Jacqueline*. In March and June 1897, respectively, there were launched at Nantes for the Bordes sons the two 3,094-ton sisters *Loire* and *Atlantique*, which make a total of eleven big 2,990- to 3,338-ton four-masted steel shipentines (aggregating 33,600 tons) built by the Bordes firm under the French navigation (and building) bounty laws and launched during the eighteen-month period January 1896-June 1897. Thus did the French maritime subsidies affecting both construction and operations promote French shipbuilding as well as French shipping. Yet the Bordes company was ever on the lookout for bargains in British-built ships and in 1899 bought the two Clyde-built four-masted steel shipentines *Cape Clear* and *Cape York* of 2,129 gross tons. In the same year, the Bordes sons added to their fleet the big three-masted bark *Seine*, built by La Porte at Rouen, which was a bounty vessel with 2,630 tons gross and 1,587 tons net registered tonnage—a spread between the gross and net measurements of 1,043 tons. This was the result of building under the bounty law; i.e., to get the largest possible gross tonnage in relation to the net. These French bounty-built ships had a long poop, forecastle, and midship bridge house that together totaled up to an unusually large percentage of a vessel's length of hull or more moderate length of poop and forecastle, with about a 10-ft. hull break. The *Cape Clear* "went missing" in 1900, the *Seine* was lost the same year, and the *Cape York* was lost in 1905.

Following the turn of the century, A. D. Bordes et Fils built the following fine sailing vessels as bounty ships in French yards:

| Name of Vessel | Type | Built (launched) | Tonnage | | Builder | End of Vessel |
|----------------|---------------------------|------------------|--|-------|--|--|
| | | | Gross | Net | | |
| MARTHE | 4-masted steel shipentine | 1900 (Dec.) | 3,119 | 2,432 | Chantiers de Normandie, Grand Quevilly | Sunk by German submarine, 1917. |
| VALENTINE | 4-masted steel shipentine | 1901 (Apr.) | 3,120 | 2,433 | Chantiers de Normandie, Grand Quevilly | Sunk by German cruiser, 1914. |
| ADOLPHE | 4-masted steel shipentine | 1902 | Cargo capacity of 3,910 tons of 1,000 kilos each | 2,462 | Dunkirk | Lost in 1904. |
| ALEXANDRE | 4-masted steel shipentine | 1902 | | 2,462 | Dunkirk | Lost in 1903. |
| RANCAGUA | 3-masted steel ship | 1902 | 2,719 | 2,315 | St. Nazaire | Destroyed by Germans, 1917. |
| MADELEINE II | 3-masted steel ship | 1902 | 2,852 | 1,875 | St. Nazaire | Destroyed by Germans, 1917. |
| QUILLOTA | 3-masted steel bark | 1902 | 2,559 | 2,073 | St. Nazaire | Destroyed by Germans, 1917. |
| ANTONIN | 4-masted steel shipentine | 1902 (Sept.) | 3,071 | 2,662 | Dunkirk | Sunk by German cruiser SEEADLER, 1917. |
| VALPARAISO | 4-masted steel shipentine | 1902 (Nov.) | 3,081 | 2,664 | Dunkirk | Sold in 1927. |

Later, the Bordes firm bought the French bounty-built three-master *Reine Blanche* (ship) of 1,854 gross tons (sold in 1923), the *Admiral Troude* (ship) of 1,949 tons, and the *Brenn* (bark) of 2,300 tons, the latter two vessels being sunk by German submarines in 1917. The great French nitrate firm bought nine well-known British windjammers between 1905 and 1910, including the *Andorinha* of 3,440 tons (built in 1892), which was the largest vessel in the fleet while she flew the Bordes house flag, and the *Muskoka* of 2,357 tons (renamed *Caroline*), a clipper modeled ship that was claimed by many shipping people to be "the fastest steel sailing ship ever built."

Bordes et Fils continued to buy French-built sailing ships until just before the outbreak of World War I. The last purchases of note were the *General Neumayer* of 1,858 tons (sold

in 1923) and her sister, the *Cambronne* (captured by Von Luckner and sent into Rio with 287 prisoners aboard); *Europe* and *Asie* of 2,839 tons (the *Europe* was another German submarine victim in 1917, and the *Asie* was lost in 1919); *Belen* of 2,202 tons (renamed *Jeanne d'Arc* and sold in 1923); *Emilie Siegfried* and *Ernest Siegfried* of Havre (3,104 tons); and the *Sainte Marguerite* and *Sainte Catherine* (renamed *Blanche* and *Seine*), which were evidently the last ships to come under the Bordes flag before the declaration of war. (The *Blanche* was another victim of a German submarine in 1917, and the *Seine* survived to be sold in 1923.)

The following statement, compiled from statistics given by Basil Lubbock in *THE NITRATE CLIPPERS*, shows the rise to prominence of the Bordes firm from 1870 to the outbreak of World War I:

| Year | Number of Sailing Nitrate Carriers | Effective Cargo Capacity in Tons of 1,000 Kilos | Year | Number of Sailing Nitrate Carriers | Effective Cargo Capacity in Tons of 1,000 Kilos |
|------|------------------------------------|---|---------------------------|------------------------------------|---|
| 1870 | 15 | 16,830 | 1895 | 31 | 73,930 |
| 1875 | 34 | 39,335 | 1900 | 38 | 119,560 |
| 1880 | 40 | 45,765 | 1905 | 35 | 123,070 |
| 1885 | 41 | 51,975 | 1910 | 42 | 150,100 |
| 1890 | 31 | 62,550 | 1914 (outbreak of war) | 46 | 163,160 |

When the war began, the firm of Ant. Dom. Bordes et Fils was at the peak of its greatness and, it is said, "at the height of its prosperity." The war, however, ruined the business and either destroyed or depreciated and scattered its ships and practically drove the firm from merchant sail. The line suffered terrific losses from enemy action during the war, and twenty-two sailing ships totaling over 50,000 tons fell victims to the Germans during 1914-1918 (also the only steamer—the *Magellan* of 6,265 tons). The four-masted shipentine *Union*, sunk by a German cruiser in 1914, was the first casualty. Attempts by the Bordes sons to re-establish themselves after the war met with but little success, so they began to sell their surviving ships in 1923 (in which year a number of their older vessels were disposed of); the *Dunkerque* and *Loire* were sold in 1924, the *Atlantique*, *Montmorency*, *Wulfrun Puget*, and *Rhone* in 1926, and the *Valparaiso* (the last ship built by the firm) in 1927. An "economic war-deflated" France had no money to pay bounties to sailing ships. At the commencement of the thirties, the Bordes firm operated half a dozen steamers on the high seas, and the once highly prized and voluminous French-Chilean nitrate business was handled in a modest way under the title of *Compagnie Francaise d'Armement et d'Importation de Nitrate de Soude*.

Whereas Antonin Dominique Bordes, of Bordeaux, France, started earlier than the Germans in the development of the Chilean nitrate trade, it was really Reederei F. Laeisz, of Hamburg, who speeded up the mining and lightering of nitrate and demanded fast passages and rapid turn-about of ships in West Coast South American waters. Lubbock says:

It was Herr F. Laeisz who really brought the spirit of hustle into the easy-going nitrate trade. He it was who required his captains to make racing passages. He it was who required his agents so to drive the West Coast stevedores that his ships were invariably discharged and loaded in a quarter of

the time taken by those of any other firm and any other nationality. Herr Laeisz also owed a great deal of his success in the nitrate trade to the wonderful lighterage organisation which he built up in the nitrate ports.

In the early seventies, Laeisz bought the little iron bark *Flottbeck* of 537 tons, which he renamed *Professor*, and the wood bark *Henriette Vehn* of 647 tons; but about the same time the great "P" Line of nitrate carriers ("clippers") started with the full-rigged iron ship *Polynesia*, built at Hamburg in 1874. Like Bordes, the Germans used small vessels in the nitrate trade for many years, and whereas Laeisz bought many iron barks from the British,

which he renamed *Pluto*, *Poncho*, *Paquita*, *Puck*, etc., it was not until the mid-eighties that he built a vessel of over 1,200 tons. In 1885, Blohm & Voss launched the iron bark *Plus* of 1,230 tons for the Laeisz "P" Line of nitrate clippers, and this "big" vessel was followed by the *Potrimpos* of 1,273 tons and *Prompt* of 1,445 tons in 1887 and the *Pamelia* of 1,442 tons in 1888. Laeisz also acquired three smaller barks of about 1,000 tons, which had been built by Blohm & Voss in 1883-1885. It was during the period 1889-1891 that Laeisz built his first sizable full-rigged three-masted steel ships. They were all of about 1,700 tons and were built in Germany: two named *Palmyra* and *Preussen (I)* by Blohm & Voss at Hamburg, two named *Parchim* and *Pera* by John C. Tecklenborg at Geestemunde, and the *Pampa* at Rostock. From the very first, the "P" Line ships gained a reputation for speed, but the Laeisz "big new five," put in service in the first part of the 1890's, were small compared with the four-masted shipentines built by the Bordes firm, of Bordeaux, in the 1880's. These included the *Dunkerque* of 2,987 tons, *Nord* of 2,905 tons, and *Cap Horn* of 2,608 tons, built during 1888-1889. It was while Laeisz was boasting of his "magnificent new steel 1,700-ton all-German ships—built and building" that Henderson at Partick on the Clyde in Scotland, on September 2, 1890, launched for A. D. Bordes et Fils the mammoth full-rigged five-masted ship *France* of 3,800 tons, which had a stated deadweight capacity of 6,200 tons.

It was not until 1892 that Laeisz built his first four-masted shipentines approaching 3,000 tons, and in that year Tecklenborg built for him the *Placilla* of 2,895 gross and 2,780 net tons and the *Pisagua* of 2,906 gross and 2,763 net tons. In late 1894, Laeisz ordered from Tecklenborg, of Geestemunde, a five-masted steel shipentine to be "larger, better and faster" than the British-built and French-owned five-masted ship *France*, which was then operating in the Chilean-French nitrate trade. The result was the "mighty German *Potosi*" (described elsewhere), launched in July 1895, which the Germans, after her maiden voyage, proclaimed "completely outclassed the *France*." On her initial run, the *Potosi* went out to Iquique in 73 days, was 20 days discharging ballast and loading 6,000 tons of nitrate, and made the passage home to Cuxhaven in 77 days; but during the last four days of this time, she was behind a tug, as the *Potosi* was having hard work beating up the Channel and called for steam to get her to port more quickly and safely. The *Potosi* made twenty-seven complete round voyages, all in the nitrate trade, under the German flag and was a good paying vessel. Commencing her twenty-eighth voyage on July 4, 1914, from Hamburg, she reached Valparaiso September 23 after a passage of 81 days (reported as 74 days from the Lizard), where she remained for the duration of the war. In 1918, Laeisz sold the big vessel to Vinnen, but under the terms of peace the Germans (and Chileans, who had taken possession of her) had to turn her over to France. The Bordes firm had a chance to get possession of the big five-poster, at a low price, but it did not want her; so Gonzales Soffia & Company, of Valparaiso, acquired title, reconditioned and renamed her *Flora*, and sent her to Hamburg with a load of nitrate, where she arrived March 30, 1925, after a slow passage of 110 days. Returning to the West Coast, the *Flora* (ex-*Potosi*) loaded 5,800 tons of patent fuel, coal, and coke at Cardiff and sailed July 13 for Mejillones. When 65 days out, an Argentine steamer reported her as in Lat. 45° S. Atlantic, Long. 66° W. and "on fire and heading for land." She anchored at Comodoro Rivadavia on September 18 and was destroyed by explosions and fire in October, assisted by shell fire from an Argentine cruiser. When under the German flag, the *Potosi* carried a crew of 41 men all told, excluding apprentices, who generally numbered 3 or more; of this number, 30 were sailors (usually 16 A.B.'s and 14 O.S.'s).

In 1902, seven years after the launching of the *Potosi*, Tecklenborg built for Laeisz his second five-poster; but this vessel, the mammoth *Preussen (II)*, which became known as "the Pride of Prussia," was a full-rigged ship of 5,081 gross tons (4,788 net tons) and the only five-masted sailing vessel ever built that was square-rigged on all masts. The *Preussen* was a big carrier, with a stated deadweight capacity of 8,000 tons, and a good sailer. She made

thirteen complete round voyages, the eleventh of which, surprisingly, was around the world taking case oil out from New York to Yokohama (May 27-September 16, 1908); returning, she loaded nitrate at Taltal and Tocopilla for Hamburg. Commencing Voyage No. 14, the *Preussen*, while proceeding down the English Channel under full sail during the night of November 10, 1910, was in collision with the Newhaven-Dieppe steamer *Brighton*. Both vessels suffered damages, and eventually the *Preussen* drifted ashore near Dover. Whereas most of her cargo was saved, the ship herself became a total wreck and broke her back, and what the elements did not destroy had to be blown up.

Laeisz's experiences with the *Potosi* and *Preussen* were such that, despite the fact that they were generally considered highly successful vessels, their owner had no desire to build and operate any more "big 5-posters"—either shipentine- or ship-rigged; but he affirmed that the most practical vessels for the Chilean-European nitrate trade were "3,000-ton four-masted barques" (i.e., shipentines). In the nineties, Laeisz had acquired two British-built four-masted steel shipentines. The *Pitlochry* was built for him in 1894 by Stephen, of Dundee, Scotland, and in 1899 the *Drumrock* was bought by him from the British "Drum" Line and renamed *Persimmon*. The year following the construction of the *Preussen*, Tecklenborg, the builder of the big ship, launched the 3,000-ton *Pangani* for the "Flying P Line," and Blohm & Voss, of Hamburg, built the *Petschili*, a shipentine of similar size and type. In October 1905, Blohm & Voss launched for Laeisz the *Pamir*, another 3,000-ton four-masted shipentine, and in 1911 built the 3,100-ton sisters *Peking* and *Passat*. Laeisz bought from the British the case oil carriers *Arrow* of 3,084 tons and *Radiant* (bark) of 1,971 tons in 1911 and renamed them *Parma* and *Perim*, and between 1907 and the outbreak of the war in 1914, he also purchased the following ships for his nitrate fleet: *Argo* of 2,118 tons (renamed *Peiho*) and *Fitzjames* of 1,946 tons (renamed *Pinnas*). Four German and two Italian sailing vessels were also acquired during this period, and they became the *Ponape* (2,344 tons), *Pirna* (1,789 tons), *Pommern* (2,423 tons), *Penang* (2,039 tons), *Pinguin* (2,102 tons), and *Pelikan* (2,103 tons).

World War I cost Laeisz his entire fleet. The first vessel to be taken was the *Ponape*, captured by the British in 1914. After the war, the *Parma* and *Peiho* were allocated to the British; the *Potosi*, *Pinnas*, and *Passat* to the French; the *Perim*, *Pamir*, *Peking*, and *Pirna* (renamed *Pinus*) to the Italians; the *Pommern* to the Greeks; and the *Penang* to Danzig. Laeisz courageously attempted a "come-back" after the peace and bought back the *Peiho*, *Parma*, *Pamir*, *Passat*, *Pinnas* (lost in 1929), and *Peking* from the new owners, who had but little, if any, use for the vessels and preferred money to merchant sail. The *Priwall* (3,185 tons), one of two ships that Blohm & Voss had been building at Hamburg during the war, was finished for Laeisz in 1920. (The second of the ships, the *Pola*, which was completed, was taken over by France as part of reparations payment and became the French training ship *Richelieu*.) By 1922 the famous "P" Line of nitrate clipper carriers was once more in existence.

In 1926, Laeisz built the *Padua* at Tecklenborg's Wesermunde yard, and this latest-built German nitrate ship was a four-masted steel shipentine of 3,064 gross and 2,678 net tons (length 320½ ft., beam 46 ft., depth of hold 25½ ft.). This vessel is interesting because she embodied the features that Laeisz desired, based on his very extensive experience in the Chilean nitrate trade. The *Padua* crossed royals above double topgallant and double topsails, and her lower yards were 96 ft. long, with the royals 48 ft. long. She had double standing spanker gaffs. All her masts and spars were of steel, with the lower and topmasts in one piece. She had a spike jigger mast and a spike bowsprit. The ship had a topgallant forecastle 31 ft. long, a poop 53 ft., and a bridge house and deck running from side to side of the vessel about midships that was 65 ft. long, with a deckhouse above abaft the mainmast. The *Padua* carried 4,800 tons deadweight, and accommodations were arranged on her for 40 cadet officers to be thoroughly trained in sail while the vessel was engaged in deep-sea trade.

By 1932 even Laeisz could not operate his fleet of ships and make money notwithstanding subtle and camouflaged national support, so he laid them up. The *Peking* (3,191 tons) was sold to the Arethusa Training School of London, England. The *Pamir* (3,020 tons) had been bought by Captain Erikson, of Finland, in 1931, who had bought the three-masted ship *Penang* (2,019 tons) and the four-masted shipentine *Pommern* (2,376 tons) in 1925, as these vessels had become too small for the trade. Erikson acquired the *Passat* in 1932 and the *Pestalozzi* in 1933. Among the nitrate vessels taken over by Erikson were the *Ponape* (2,342 tons), built in Italy in 1903, which the shipbreakers got possession of in 1936, together with the *Parma* (3,084 tons), built on the Clyde in 1902, which damaged herself on a stone quay at Glasgow and had to be scrapped. However, the German Government was not willing to see the end of the Chilean-German nitrate trade with windjammers, and it insisted on the recommissioning of the *Padua* (3,064 tons; built in 1926) and the *Priwall* (3,185 tons; completed in 1920) under a definite and substantial subsidy.

Of all the maritime nations, only Germany and Finland continued to cling to sail after World War I, and Germany alone built real deep-sea square-rigged sailing vessels after 1918. The last sailing ship fleet in Germany was the Laeisz "Flying P Line," which operated sailing ships between Hamburg and Chilean nitrate ports. In 1928, Laeisz possessed a fleet of seven fine sailers ranging from the full-rigged ship *Pinnas* to the famous four-masted shipentine *Padua* (built 1926), but all were disposed of prior to 1933, mostly to Captain Erikson of the Aland Islands, Finland, except the four-masted "barques" *Padua* and *Priwall*, which continued to be operated under special government subsidy.

In July 1937, J. Ferrell Colton, in *LAST OF THE SQUARE-RIGGED SHIPS*, wrote: "It is common knowledge that the square-rigged sailing ship has seen its day and served its purpose and now is seen no more, with but few exceptions, on the waters of the globe." Referring to a list of windjammers still in service at that time, "the survivors of that glorious era, soon to be only history," he wrote:

Many of these are fine vessels of a past generation, serving now under other names and in other trades than those for which they were intended, while others are specimens of the latter day sailing ship, the highest development in man's use of wind as a means of propulsion. The great steel 4-mast barks [shipentines], built chiefly to the order of Herr F. Laeisz of Hamburg for use in the highly competitive nitrate trade from the West Coast of South America to Germany around Cape Horn each way are the most striking examples of the modern full-built cargo carrier [excluding the big, ponderous "5-posters" fitted with auxiliary power], designed both for the sake of economy and the rapid transportation of large cargoes. Of these G. J. H.

Siemers' *Kurt* now *Mosbulu* [U. S.-owned from 1917 to 1935, but laid up in 1928 as unprofitable to operate], F. Laeisz's *Padua*, *Pamir*, *Passat*, *Peking* now *Arethusa* and *Priwall* with their large regular tonnages, topgallant forecastles and poops, their steering done from a double wheel located on a midships bridge (house) housing all officers and crew, with a secondary wheel located over the steering quadrant aft, their fore, main and mizzen mast measurements alike with lower and topmasts in one piece with spike jigger masts and having double standing spanker gaffs, all masts, yards, and spars of steel and standing rigging of steel wire [with turnbuckles] are typical types of this development.

The Chilean nitrate trade was the last deep-sea service for which sailing ships were built. The Alaska salmon fisheries and packing business was an industry rather than a trade in a deep-sea commercial sense, and it used only old ships that were past their usefulness in trading on the Seven Seas. The Finnish movement of wheat from South Australian to European markets was planned and carried forward by Capt. Gustav Erikson, of Mariehamn, Aland Islands, Finland, by the use of generally worn-out ships that could be "bought cheap" and manned with a minimum of expense by Scandinavian youths. It was merely a post-war sort of patched-up trade made to salvage ships and keep them in service (making one voyage a year) as long as (1) they would float, (2) cheap boyish crews could be induced to man them or merchant marine cadets pay a premium for a chance to gain experience, and (3) Australian wheat could be obtained and would pay a freight rate to European markets that, considering high insurance rates, would warrant shippers' taking a chance on old, poorly kept-up wind-

jammers and afford a profit on the risky ventures to Captain Erikson. These vessels were manned by Scandinavian youths, with salt water in their blood, an emotional interest in the sea, and a desire to make voyages in big windjammers before the end of sail, or by young men willing to pay a premium to get the deep-sea square-rigger experience required for certain merchant marine officer's certificates. The transporting of nitrate from Chilean ports on the West Coast of South America to Europe (generally France and Germany) in sizable steel square-riggers was a legitimate trade and one that windjammers handled satisfactorily for many years both before and after World War I.

In 1904, G. J. H. Siemers and Company, of Hamburg, built the four-masted shipentine *Kurt* of 3,116 gross tons on the Clyde for the Chilean-German nitrate trade, and she, with her sister, the *Hans* (later the *Mary Dollar*), was well equipped with labor-saving devices and with motor winches at each hatch to facilitate fast discharging and loading. Before World War I, the *Kurt* made ten outward passages to the Pacific, seven with coal from Wales to Chile and three with coke from Hamburg to Santa Rosalia, Mexico (on the Gulf of Mexico). On the first nine voyages, the ship carried nitrate from Chile on the homeward passages; but on her tenth voyage in this trade, part of the outbound cargo of German coke had to be delivered at Portland, Ore., so the owners decided that, after discharging, she would return from Puget Sound with wheat. Because of the outbreak of World War I, the *Kurt* took refuge in Astoria, Ore., in September 1914 and was interned. In 1917, when the United States entered the war, the vessel was taken over by the U.S. Shipping Board, renamed *Dreadnaught*, and used in Pacific Ocean commerce. From 1922 the vessel was privately owned under the American flag and named *Moshulu*. She engaged in the Pacific lumber trade until 1928, when she was laid up as "unprofitable to operate." In 1935 she was acquired by Captain Erikson for use in the Australian grain trade. Siemers' four-masted nitrate shipentine *Kurt* was still afloat and in service in 1937, as were the following Laeisz vessels of the "Flying P Line" of Chile-to-Hamburg nitrate carriers:

| Name of Vessel | Rig | Built | Tonnage | | Dimensions in Feet | | | End of Nitrate Service |
|----------------|---------------------|-------------------|---------|-------|--------------------|------|-------|------------------------|
| | | | Gross | Net | Length | Beam | Depth | |
| PESTALOZZI | 3-masted bark | Germany 1884 | 1,057 | 967 | 206 | 34 | 19½ | 1914 |
| POMMERN | 4-masted shipentine | Scotland 1903 | 2,376 | 2,114 | 310½ | 43½ | 24½ | 1914 |
| PENANG | 3-masted bark | Germany 1905 | 2,019 | 1,743 | 265½ | 40¼ | 24¼ | 1914 |
| PAMIR | 4-masted shipentine | Germany 1905 | 3,020 | 2,777 | 316 | 46 | 26¼ | 1931 |
| PEKING | 4-masted shipentine | Germany 1911 | 3,191 | 2,851 | 322 | 47 | 26½ | 1932 |
| PASSAT | 4-masted shipentine | Germany 1911 | 3,183 | 2,870 | 322 | 47 | 26½ | 1932 |
| PRIWALL | 4-masted shipentine | Germany 1914-1920 | 3,185 | 2,834 | 323 | 47 | 26¼ | World War II |
| PADUA | 4-masted shipentine | Germany 1926 | 3,064 | 2,678 | 320½ | 46 | 25½ | World War II |

Basil Lubbock, the British marine historian, in *THE NITRATE CLIPPERS*, says that the great German "P" sailing vessels of Reederei F. Laeisz and "their French rivals, the checker-sided nitrate barques of Ant. Dom. Bordes," were "worthy to be compared with the very best of our [British] sailing ship lines at the height of our shipping prosperity," and he adds:

Indeed there is no doubt that our sailing ship managers could have learnt a great deal from these two foreign firms, the one French and the other German. In fact, one must confess that they pretty well succeeded in ousting British ships from one

of their most paying trades. Indeed by 1914 British ships were clean out of the running in the West Coast trade. I should not like to say whether A. D. Bordes or F. Laeisz came first, but have little hesitation in asserting that it was a case of the rest

nowhere, with regard to their rivals on the West Coast, whether they were British or any other nationality. If statistics could be compiled showing how much Welsh and Tyne coal was carried round the Horn to the Chilean ports by Bordes ships from first to last, I think it would somewhat astonish the British free trader. Indeed I think Messrs. A. D. Bordes would be the first to acknowledge that their success in business would not have been so spectacular if the ports of Cardiff, Port Talbot and the Tyne had been closed to them.

The ships of Bordes and Laeisz nearly always loaded outward direct to the West Coast by way of

Cape Horn. But right up to the outbreak of war in 1914 there was a big sailing ship fleet of all nationalities carrying coal across the Pacific from Newcastle, N.S.W., to the nitrate ports of Chile. This was one of the last strongholds of British sail.

British sailing ship owners had had the mortification of seeing themselves ousted from the Calcutta jute trade, the Australian wheat trade, the California grain trade and even the lumber trade; and at the present day [1932] not a single British sailing ship remains even to take a share in the annual race home round the Horn with Australian wheat.

Referring to the South Pacific traverse from Newcastle, N.S.W. (a British colony), to South American West Coast ports, Lloyd's Shipping Index shows that during the last six months of 1912, there were 106 sailing ship departures from the coal port of Newcastle for West Coast ports. These ships sailed under the following flags:

| Nationality | No. of Ships | Nationality | No. of Ships | Nationality | No. of Ships | Nationality | No. of Ships |
|-------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|
| British | 39 | Norwegian | 20 | Russian | 6 | Swedish | 2 |
| German | 23 | French | 10 | Italian | 5 | Danish | 1 |

In addition to the 39 ships sailing under the British flag, 35 of the ships sailing under the flags of other nations not only were British-built vessels but also had originally sailed under the British flag. It is of interest to note that during this same six-month period (July 1-December 31, 1912), 59 vessels carried lumber from West Coast North American to West Coast South American ports, but only an occasional vessel loaded nitrate for the return run north. Of the 59 lumber-laden vessels, 52 were Americans, 3 Chileans, 2 Peruvians, 1 Italian, and 1 German, and all the 6 ships operating under the Chilean, Peruvian, and Italian flags were old British square-riggers. Of the 52 American vessels, only 1 was a square-rigged ship (the *William H. Smith* of 2,003 tons, built at Bath, Maine, in 1883); the balance were "fore-and-afters" (49 four-masters and 2 five-masters), with several of them carrying yards on the foremast and being of a multiple-masted barkentine rig that had become popular in the Pacific coasting lumber and coal trades.

*Capt. Gustav Erikson, of Finland, and His Australian Grain
Square-riggers—the Last Chapter in the History
of Deep-Sea Merchant Sail*

World War I (1914-1918), with its wholesale destruction of shipping of all kinds, dealt a tremendous blow to the thinning ranks of deep-sea sail, and when hostilities ceased, "shipowners all over the world literally tumbled over themselves in their eagerness to rid themselves of windjammers and to change over to steam or Diesel." When American clippers were driven from the Cape Horn service by old age, by the effects of hard, steady driving and the turbulent nature of that trade, or by economic competitive conditions, many of them were sold and ended their days in the North Atlantic. The Baltic nations, ever looking for bargains in marine carrier bottoms, were a market for ships to carry forestry products. For

long years, Norway, Denmark, and Finland picked up ships that could be "bought cheap" and that were believed to be sufficiently strong and seaworthy to be operated, without driving, for a few more years. In the last days of sail, it was a shrewd, economy-minded shipowner, Capt. Gustav Erikson, of Mariehamn, Aland Islands, Finland, who collected and operated under his simple house flag and the national colors of Finland by far the largest fleet of square-riggers in the world and, as far as number, size, and past reputation were concerned, the most impressive group of windjammers that had ever sailed the seas under one management. Erikson was not a builder of ships but a searcher for fairly good, old ships that he could buy at a low price and use for several years. When they became casualties of the sea or were so conspicuously worn out that they had to go to the shipbreaker, he would have wiped out the initial cost of the investment, plus the expenses of small essential repairs and upkeep that he was willing to make, and made a nice profit for himself after operating with unprecedentedly and painfully low expenses. To keep his ships moving when the era of sail was past as far as legitimate building, owning, and operation of windjammers were concerned, Erikson had to be an extremely economy-minded man; for, to survive, he had of necessity to be a penny-pincher and a scalper. In fact, he was merely a salvager of square-riggers, which he kept moving in trade at sea instead of sending to the shipbreakers for the recovery of metal used in their construction.

Whereas Captain Erikson was interested with small ships in the Baltic timber and West Indian log-wood trade, when he commenced at the close of the first World War to acquire big steel square-riggers, he looked for a possible long-voyage service for such vessels and found the Australian grain trade the most promising for his field of operations. In 1928 twenty-five square-riggers were engaged in the Australian-European grain trade. A movement of cargoes from Australia by sail, which had been virtually abandoned for steam, had come back under "unusual economy conditions." At first, many of the ships carried lumber from the Baltic to either Australia or other Southern Hemisphere markets and returned (generally to England) with wheat, but outgoing freights became more difficult to secure as the years rolled by. Most often, the outward passage to Australia had to be made in ballast, and such runs are all "out-go and no in-come." Of late years, the Australian wheat movement to the European market as carried by windjammers was in the hands of ships that did not consider any item such as "depreciation" when figuring their cost of operation or, to a large extent, the matter of wages. This trade was used by cadet training ships, supported by either government or steamship company funds, and the canny Captain Erikson capitalized to the full the demand of Scandinavian countries that seamen applying for an officer's mercantile marine certificate must have had at least two years' training on a sailing ship. In early 1939, it was said that "berths in Erikson's grain fleet are sold for as much as \$200." At about the same time, from Sydney, Australia, came word that the *Abraham Rydberg* (ex-*Star of Greenland* and ex-*Hawaiian Isles*), a four-masted steel shipentine that was under the Hawaiian and United States flag for thirty-seven years (1892-1929) and then a Swedish-owned vessel, being operated for the training of Swedish merchant cadets, "has ten British cadets aboard who pay £40 apiece for their training" on this square-rigger engaged in the Australian wheat trade. It was also stated in the Australian press, just before the outbreak of World War II, that the signing-up of new cadets on the Baltic-owned wheat ships was becoming increasingly difficult and that unless such premium-paying cadets, who served as the crew, could be obtained, the trade would have to be discontinued by the windjammers.

In the Continental press of 1937, under the caption "The Last Flutter of White Wings," appeared an article on the Finnish windjammers in the Australian grain trade, which said in part:

Capt. Gustaf Erikson, of Finland, has been struggling during the late twenties and the thirties of the twentieth century to maintain a fleet of 4-masted windjammers in ocean trade. Each year of late these vessels have sailed from Mariehamn in the Aland Islands off the coast of Finland—their

home port—usually in ballast, for their voyage to Australia, via the Cape of Good Hope. They put in at Copenhagen, Denmark, for sea stores and provisions and to take up passengers. The outward passage usually takes between 90 and 100 days, and for the homeward passage from Spencer Gulf, loaded with grain and generally sailing [eastward] via Cape Horn, they usually take between 100 and 120 days.

Captain Erikson's fleet are steel built. . . . *L'Avenir* has been passed by Finnish authorities for carrying passengers and can accommodate up to seventy. Of the others, *Viking*, *Pamir*, *Passat*, etc., plan to carry between eight and twelve paying passengers. No special provision, apart from berths, is provided for them; they receive the same food as the officers and are usually signed on as deck hands, even if they are women.

Each year following 1928, there were casualties and retirements in the Australian-European grain fleet of sailing craft. In 1934 the three-masted bark *Lingard* was deemed unfit for use and was laid up by Erikson (she was later sold to the Norwegians for a floating club ship). In 1935 the *Grace Harwar*, a three-masted ship of 1,877 tons, built on the Clyde in 1889 and said to be "the last of the full-riggers" in the trade, was condemned and sold for scrap. In 1936 the *Parma* was badly damaged by collision with a stone quay at Glasgow and had to be scrapped, and the *Ponape*, proving no longer profitable, was sold to ship-breakers. During that same year, the *Herzogin Cecilie*, the pride of the Erikson fleet, nearing the completion of a grain passage, ran ashore near Falmouth and broke her back. In 1938 the four-masted shipentine *L'Avenir*, bought by Erikson in 1932, had to be disposed of, as, it was said, she no longer could be operated at a profit in the Australian wheat trade "because of small capacity."

The *Herzogin Cecilie* (before referred to as a prominent German training ship) was a four-masted steel shipentine of 3,242 tons gross register, built in 1902 by the Rickmers yard at Bremerhaven for the North German Lloyd. She was interned during World War I, allocated to France following the peace, and later bought by Captain Erikson, of Finland. It is claimed that the *Herzogin Cecilie* (which had a total canvas spread of 56,000 sq. ft.) won the grain race from Australia to England eight times and had made a splendid run when she piled up on the rocks near the port (Falmouth) where she had to go "for orders" as to final destination for discharge. No lives were lost. After staying grounded for three months, she was refloated, but was found to be damaged to such an extent that the cost of repairs was deemed prohibitive. When she was lost in the spring of 1936, the British marine press referred to the *Herzogin Cecilie*, then thirty-four years old, as "the handsomest and largest square-rigger in the world."

In the Australian-European grain "race" of 1937, Capt. Gustav Erikson had eight big four-masted steel shipentines and three three-masted steel barks, and in this year he was fortunate in being able to charter several of these vessels to take a load of Finnish timber to South Africa on the outbound passage to South Australia. The following is a list of the sailing vessels owned by Erikson in 1937 or that had been owned by him and in that year were still afloat and not laid up. Twelve of these vessels (the larger ones) were supposedly in the Australian grain trade, but one of them, *L'Avenir* (built in Germany in 1908 as a Belgian training vessel), was about to be disposed of as unprofitable to operate. Two of the barks (of from 1,057 to 1,229 tons) were in the West Indian log-wood and general trade, and a third (of 1,039 tons), which had been engaged in this trade, had been disposed of. One wood bark of 827 tons was being used in timber trade to London, and a little German-built wood barkentine was a handy coaster and Baltic general trader.

These great surviving "canvas-backs" of the ocean are not insured and their sailors, who are mostly apprentices, are paid only from two to ten dollars each per month. The captain himself undertakes many varied jobs besides navigating his craft. There are no stewards or stewardesses on board and the skilled operations usually undertaken on liners by the ship's doctor, purser, engineer or chief steward are part of the lot of the captain of these wind-jammers.

Captain Erikson seeks to maintain himself in the trade with a fleet of old and generally discarded white-winged sea birds by capitalizing the spirit of adventure in operation and this as it applies to passengers and crew as well as to business risk without carrying any insurance and by utilizing convenient book-keeping void of debits such as the usual legitimate fixed charges, depreciation, etc.

| Name of Vessel | Rig | Built | Gross Tonnage | Year Bought by Erikson | Trade | Remarks |
|-------------------|---------------------------|---------------|---------------|------------------------|--|---|
| LAWHILL | 4-masted steel shipentine | Scotland 1892 | 2,816 | 1919 | Australian grain | Sold by Britain to Finland in 1914, when twenty-two years old. |
| KILLORAN | Steel bark | Scotland 1900 | 1,817 | 1923 | Australian grain and general | Sold by British to Erikson when twenty-three years old. |
| ARCHIBALD RUSSELL | 4-masted steel shipentine | Scotland 1905 | 2,354 | 1924 | Australian grain | Last square-rigger built on the Clyde and last in British yards for British owners. |
| OLIVEBANK | 4-masted steel shipentine | Scotland 1892 | 2,795 | 1924 | Australian grain | Ex-CALEDONIA. Scuttled on fire, 1911; sold Norwegians, 1913. |
| LINGARD | Steel bark | Norway 1893 | 1,039 | 1925 | Baltic timber and West Indian log-wood | Ex-WATHARA. Laid up, 1934. Bought by Norwegians, 1936. |
| PENANG | Steel bark | Germany 1905 | 2,019 | 1925 | Australian grain | Ex-ALBERT RICKMERS. Laeisz nitrate trader. Later owned by Germans and Finns. |
| POMMERN | 4-masted steel shipentine | Scotland 1903 | 2,376 | 1925 | Australian grain | Ex-MNEME. Laeisz nitrate trader. Owned by Greece after war. |
| WINTERHUDE | Steel bark | Germany 1898 | 1,972 | 1925 | Australian grain and general | Ex-SELMA HEMSOTH. Ex-MABEL RICKMERS. |
| VIKING | 4-masted steel shipentine | Denmark 1907 | 2,952 | 1929 | Australian grain | Built as a training ship for the Danish merchant marine. |
| PAMIR | 4-masted steel shipentine | Germany 1905 | 3,020 | 1931 | Australian grain | Built for Laeisz and nitrate trade and reacquired by him from Italy in 1922. |
| L'AVENIR | 4-masted steel shipentine | Germany 1908 | 2,738 | 1932 | Australian grain | Built as a Belgian training ship for the merchant marine. |
| ELÄKÖÖN | Wood bark | Finland 1920 | 827 | 1932 | Timber (Denmark to London) | Condemned in 1929. Repaired, but laid up in 1931-1932. |
| PASSAT | 4-masted steel shipentine | Germany 1911 | 3,183 | 1932 | Australian grain | Built for nitrate trade and Laeisz, who bought her back from France in 1922. |
| PESTALOZZI | Iron bark | Germany 1884 | 1,057 | 1933 | West Indian log-wood and general | Ex-CLAUDIA. Laeisz nitrate trader, 1888-1920. Sold to Danes. |
| KYLEMORE | Steel bark | Scotland 1880 | 1,229 | 1934 | West Indian log-wood and general | Ex-SUZANNE. Under British flag forty years; then sold to Danes. |
| MOSHULU | 4-masted steel shipentine | Scotland 1904 | 3,116 | 1935 | Australian grain | Ex-KURT. Siemers nitrate trader. Ex-DREAD-NAUGHT. Owned in U.S.A., 1917-1935. |
| ESTONIA | Wood barkentine | Germany 1921 | 475 | 1937 | Baltic | A small Baltic general trader. |

In 1936 a British marine authority published a list of the largest and best-known square-riggers afloat. Omitting the old British composite-built tea clipper *Cutty Sark* (launched on the Clyde in 1869), which is merely being preserved and is in no seagoing condition, and also the Swedish training ship *Af Chapman* and the German (*Schulschiff*) *Deutschland*, the list consists of twenty barks, three-masted ships, and four-masted shipentines, of which sixteen

were under the Finnish flag, owned by Capt. Gustav Erikson, and two each under the flags of Germany and Sweden, respectively. One of those owned by the Swedes was the *Abraham Rydberg*, a deep-sea trading training ship, and the other, the *C. B. Pedersen*, which also carried a crew of Swedish cadets, was sunk in collision off the Azores in April 1937. The two vessels under the German flag, the *Padua* and the *Priwall*, were continuing to operate in the Chilean nitrate trade under a substantial government subsidy. At that time, it was said: "The great fleet of French 'bounty' barques and the 'slow coach' Plate traders sailing out of Genoa have passed on." However, several training sailing vessels were still afloat and also several small craft engaged in coastwise and short-distance sea passages in special trades. A description of the few square-riggers still afloat in 1936 has been concluded with the statement: "As the old deep watermen pass on to their last haven, either through shipwreck or at the vandal hands of shipbreakers, it is certain that they will never be replaced, as sail is not now a feasible commercial proposition. And so that most wonderful sight in the world, a square-rigger in all her majestic glory of snow-white billowing canvas, will vanish forever from off the high seas." A British tabulation in 1938 of "The World's Ocean Going Square-rigged Sailing Fleet" gives twenty sizable vessels of over 1,000 tons. Of these, Finland owned twelve (including one training ship, the *Soumen Joutsen* of 2,259 tons); Germany five (three were training ships, and only one of these three made long sea voyages); Sweden one (the *Abraham Rydberg*, a training ship merchantman manned by cadets); Portugal one (the old iron bark *Olinda*, built on the Clyde in 1877); and Chile one (the iron bark *Guaytecas*, built at Sunderland, England, in 1884 and used in the local coasting trade). It is apparent that the Australian grain trade and Capt. Gustav Erikson's vessels in that service were responsible for keeping windjammers engaged in long-voyage ocean work for many long years and for maintaining a fleet of square-riggers in any kind of ocean service after 1928, when the Alaska Packers Association laid up its sailing vessels and turned to steam.

In the winter of 1938-1939, doubts were expressed in Australia as to whether or not there would be any movement of wheat from that continent to Europe, or any "Grain Race," in 1939. However, the available windjammers had nothing else to do, and they arrived at South Australia anchorages without having charters, waited for business, and before long were acting as warehouses and receiving wheat for transport to England. The conditions that generally operated against the sailing ship in competition with the steamer were turned to the advantage of the windjammers in the South Australian wheat trade. The ships operated by Erikson were all old vessels, "bought cheap." The cost of maintaining a crew in accordance with the Erikson system has been proclaimed "the lowest in the world," and time at the loading port was deemed unimportant to the Erikson windjammer—something that cannot be said for a steamer. Quentin Pope wrote from Sydney, Australia, in early 1939 as the last of the Australian "Grain Races" was getting under way:

The wheat is shipped from small country ports which have neither grain elevators nor wharves. Vessels must anchor a mile at sea and take on cargo from barges, a slow process. Loading may last a month or six weeks, according to the rapidity with which grain can be collected from the surrounding territory. The operating costs of a steamer would make such a lengthy wait impossible.

The farmer prefers the windjammers because they give him great savings in rail freight costs on wheat which otherwise would have to be sent to the nearest big port. He finds, too, that grain is cheapest at harvest time, and if his crop was shipped by steamer he might find it advisable to pay storage on it for some months until prices improve.

The windjammer avoids this by becoming a floating granary which cannot be tapped until the first glut of the market has passed and steadier, and maybe higher, prices have arrived. Speculation in grain is unending and it is usual for a cargo to be sold and resold four or five times while it is on its way from Australia, a voyage which may take from 90 to 200 days.

These are the basic reasons for the survival of the white-canvas fleet. The windjammer also quotes lower rates than the steamers, but the difference is not great enough to turn the scale in their favor. Higher insurance rates must be paid on cargo shipped by sail and this reduces the margin.

The windjammers in the Australian-European "Grain Race" of 1939—the last one before World War II put a stop to such passages—numbered thirteen and consisted of the Erikson

four-masted steel shipentines *Archibald Russell* (2,354 tons), *Lawhill* (2,816 tons), *Moshulu* (3,116 tons), *Olivebank* (2,795 tons), *Pamir* (3,020 tons), *Pommern* (2,376 tons), *Viking* (2,952 tons), and *Passat* (3,183 tons) and the three-masted steel barks *Winterhude* (1,972 tons) and *Killoran* (1,817 tons), or ten Erikson vessels in all, eight four-masters and two three-masters. The other windjammers in the "race" were (1) the four-masted steel shipentine *Padua* (3,064 tons), built in Germany for Laeisz and the nitrate trade in 1926 and subsidized by the government; (2) the *Kommodore Johnsen* of 3,476 tons, a four-masted steel shipentine fitted with an auxiliary engine, built in 1921 by the Krupps at Kiel, Germany, and acquired by the North German Lloyd in 1936 for use as a training vessel to make commercial long-distance voyages under canvas; and (3) the *Abraham Rydberg*, a four-masted steel shipentine, owned in the Hawaiian Islands and the U.S.A. from 1892 to 1929 and then sold to the Swedes as a training vessel for Swedish merchant cadets while making commercial voyages on the Seven Seas. Of this entire fleet of thirteen windjammers making the last of the grain runs from Australia to Europe, all the privately owned and nonsubsidized merchantmen were the property of Capt. Gustav Erikson, of Finland, and the only other countries represented by tonnage in this concluding 1939 run were Germany (two vessels) and Sweden (one vessel).

In *THE LAST OF THE WINDJAMMERS*, Basil Lubbock, the British marine historian, says:

There is no time in these days for the leisurely contemplation of natural beauty, nor patience for the study of an out-of-date craft. The younger generation seem to be entirely absorbed in four over-mastering interests—speed, mechanics, vibrations, and the flying ball. Under the head of speed can be listed every kind of competitive racing; under mechanics all the grubby delights of the oilcan, the sweat rag and the tool bag; under vibrations all the pleasures of song and dance; and under the flying ball all those games of skill from cricket to croquet, from football to fives, which the British race has introduced to the world. The young man of to-day will grow enthusiastic over a new valve or a new alloy, but he cannot realise the delight of his forebears in juggling with those irresponsible forces, wind and wave, which is the art of handling sail.

In the good old days the Briton valued . . . [certain] arts above all else, and . . . [one was] the art of the shipmaster. . . . Art can be taught up to a certain point but no further, and that is where it differs from science. No cleverness of brain or dexterity of finger can make a great painter or musician, and it is the same when you come to deal with the ship. . . . Whether you are handling a fiddle, . . . a tiller, . . . or a paint brush, you need certain almost indefinable qualities of character to be really successful; and if you lack these qualities you remain a piano thumper, a paint dauber, [and] a wrecker of ships. . . . Though the man who controls the engine-room telegraph of a modern leviathan navigating in narrow waters must needs be a superb judge of speed, the supreme art of the old-time master mariner has been lost to the world.

It has been well said: "The ocean knows no favorites. Her bounty is reserved for those who have the wit to learn her secrets, the courage to bear her buffets, and the will to persist through good fortune and ill, in her rugged service."

In Frederick Wight's *THE CHRONICLE OF AARON KANE*, we read of the American wood sailing ship, and the query is made: "Is there anything made by man that he can love as he does a ship? The zest of driving her in the bitter weather, of running an easting down in high and savage latitudes, of feeling the trustworthy push of the trades, of the vexed naggng through the doldrums. . . ." Moreover, we are told authoritatively and sympathetically by one who knows that to the American seafarer of the nineteenth century there was "the hunger of speed and power, and the love of this living weapon, the ship"—the wood deep-sea square-rigger.

In a tribute to American wood Down Easters and their builders by Capt. William W. Bates, who as U.S. Commissioner of Navigation in the eighties and nineties of the nineteenth century sought to give proper recognition to American sailing ships, we read:

The building of ships excites the energies of entire communities. Throughout the wide range of human industry we shall search in vain for a physical employment better calculated than shipbuilding

to arouse the emotions of men, to lift up, broaden and enlarge the minds of nations. There is a community of interest, of pride and ambition, of admiration and patriotism clustering around the build-

ing of ships, that defies descriptive expression; that is as deep as human sympathy, as wonderful as the career of man, and wider than the boundaries of civilized life. . . . It is because the successful ship is a trial of the finite with the infinite, a measuring of man's capacity with the omnipotence of deity,

that we glory in the thought of ships. It is because by skill and labor, using the grand materials provided by nature, a human prodigy, built to ride the seas, can defy the ocean and its angry waves, that we laud and cheer the noble ship.

In Talbot-Booth's *SHIPS AND THE SEA*, a British marine handbook that quite naturally in 1936-1938 devotes but little space to windjammers, appears the following: "The sailing ship was and still is perhaps the most beautiful thing originated and made by man; she is a living thing in the way that no modern power-driven vessel can ever be, and for beauty of appearance she can never be equalled, but there is no denying that the seaman's life was hard in those days. Those, however, who say that romance and glamour died with the sail ship are wrong—surely such qualities are spiritual rather than material."

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