

Infosheet No. 5

The history of international yachting & The *America's Cup*

The prosperity of Victorian times quite naturally led the more affluent towards leisure pursuits. One of these pursuits was sailing. Pleasure yachts became extremely popular and Queen Victoria herself became a yacht owner. The Royal family's association with yachts really started when Charles II was presented with the yacht *Mary* by the Bergmeister of Amsterdam in 1660. Between 1671 and 1677, Charles II had a further 14 yachts built at Woolwich, Portsmouth, Rotherhithe, Lambeth and Chatham. His early enthusiasm no doubt encouraged the aristocracy of the time to emulate him. By the next century (1775) yacht races were being organised regularly on the River Thames. The Royal Yacht Squadron was founded after the end of the Napoleonic Wars and yachting was established as a pleasurable pastime.

Queen Victoria inherited the yacht *Royal George* (330 tons) from her uncle William IV and sailed in her to Scotland in 1842. The Queen was "not amused" when her becalmed yacht required a tow and she commissioned a 225ft paddle steam yacht which, when launched on 26 April 1843, was christened *Victoria and Albert*, the first of a line of steam powered Royal Yachts that ended with *Britannia*, completed in 1954 and decommissioned in 1998. By 1855, the yacht had been replaced by the longer, and appropriately named, *Victoria and Albert II* (2,342 tons) to allow for an extended royal family. Regrettably, the Queen became disenchanted with yachting after the death of Prince Albert in 1861. Nonetheless, her interest in and ownership of

yachts did cause a number of her subjects to sail for pleasure. It can fairly be said that yacht building reached a high degree of development during Victoria's reign. In the 1830s, there were scarcely 100 yachts in existence, mostly based on the designs for brigs, schooners and cutters owned by the Royal Navy. A good example is the *Waterwitch*, a brig built at Cowes in 1832 for the Earl of Belfast. The Admiralty Officials were so impressed by this brig's sailing qualities that they bought her. Such brigs and schooners sometimes raced against each other but, ultimately, the cutter rig proved to be the best type for competition.

In 1875, the Yacht Racing Association, with Dixon Kemp as Secretary, was established. A series of short-lived relatively poor rating formulae advanced by this governing body led to the emergence of extreme types and very lightly built yachts. The Yacht Registration Society was formed in February 1877 under the chairmanship of the Marquis of Exeter. The committee included Ben Nicholson and Dixon Kemp. The Yacht Registration Society set about organising a formal process, including submission of plans and inspection of yachts under construction, which would ensure the progress in yacht design.

Lloyd's Register's Yacht Rules

Occasionally Lloyd's Register's (LR) Rules had been consulted but there was a reluctance to use the Rules as yachtbuilders tended to believe the requirements concerned merchant vessels only. In 1876, John Harvey, a Wivenhoe yachtbuilder suggested

that Rules for the construction of yachts should be published by LR.

Ben Nicholson wrote formally to Bernard Waymouth, Secretary of LR, and received the following reply: "We here can and do estimate you properly and will not fail to show that you are entitled to the high position you occupy as a really good yachtbuilder. And, as I have said before, if you will kindly, at an early period, let me know your views as to the requirements to meet the case of yacht owners I will try to lead the discussion in the direction you indicate, for our desire should be to carry out the views of the elite of the yacht owners and builders." The resultant *Lloyd's Register of Yachts* and *Rules for the Classification of Yachts* were instituted in 1878 and although its regulations applied only to cruising yachts until 1907, they necessarily applied to all significant designers who produced both types of yachts.

The 1884 edition was enlarged to list foreign-owned yachts and to show British and foreign yacht clubs and their addresses, even their respective flags were strikingly illustrated. The *Rules for Steel Yachts* were published in 1885.

The Yacht Racing Association established their Linear Rating Rules in 1896 and 1902. There was an enhanced incentive for yacht builders and designers to build ever lighter yachts. This was particularly significant because technological progress had made extreme light weight yachts possible. There followed a period of rapid and extreme design evolution where from year to year new yachts were out-classed and rendered useless for racing. These lightly built yachts had no future as cruising yachts once their racing lives were over. The handicap basis which the Yacht Racing Association introduced only served to exacerbate the problem.

The yacht building market was on the verge of collapse.

In 1906, Charles E. Nicholson of Camper and Nicholson succeeded in persuading a client to build a large racing yacht to the Lloyd's Register *Rules for Yachts*, formulated some years earlier. The yacht was the *Myria* (167 Thames Measurement, ✱20A1) and she showed that strength and speed could be brought together successfully. This example was instrumental in a new International Rating Committee, including the Yacht Racing Association, deciding to establish scantlings for racing yachts and make Lloyd's Register class mandatory for all racing yachts built to the International Rule (Metre class). This was introduced from 1st January 1907 throughout Europe. The Rule was to stay in force for 10 years.

Post World War I the future of yachting looked bleak until George V announced his intention to fit out his racing yacht *Britannia* (221 grt, 18A1). Soon many others were acquiring yachts and refitting them. The International Rules were revised in 1920 and 1934 and were gradually accepted by yachtsmen of the United States, the influential New York Yacht Club members and the North American Yacht Racing Union. Eventually, Lloyd's Register's scantlings were adopted along with the existing Universal Rule in the larger classes giving rise to the 12 metre and J-Class racing yachts of the 1930's. This in turn also had a considerable impact on redressing the structural inequities faced by all America's Cup challenges. 1992 saw the debut of the innovative International America's Cup Class (IACC) yachts designed to take advantage of the latest space age technology.

The America's Cup

"Who is first?" asked Queen Victoria, America has won, she was

told. "Who was second?" asked the Queen. "Your Majesty, there is no second."

Thus the America's Cup became much more than a sport. It involves national pride, high finance and even suspicion of industrial espionage. The year 2001 marked the 150th anniversary of the America's Cup. This momentous anniversary was marked by a special yacht race in Christchurch Bay, Cowes, between the last remaining J-Class yachts, Endeavour, Shamrock V and Velsheda.

What was to become known as the *America's Cup* started very innocently with the Great Exhibition of 1851. A letter was sent to a merchant in New York suggesting that a pilot boat/yacht would be a prime example of American shipbuilding and could be sent in time for the International Exhibition in London. This letter came to the attention of Commodore J C Stevens of the New York Yacht Club, who formed a syndicate and signed a contract for a pilot boat/yacht in 1850. The task of designing and building the yacht was entrusted to George Steers, son of the English shipbuilder Henry Steers, whose skill and ability was widely recognised. The result was a wooden schooner yacht of 170 tons Customs House Measurements, named *America*. She arrived at Cowes on August 1, 1851 and a challenge was immediately issued by Commodore Stevens on behalf of the New York Yacht Club, to the Royal Yacht Squadron *'to run the yacht America against any number of schooners belonging to any of the Yacht Squadrons of the United Kingdom, to be selected by the Commodore of the Royal Yacht Squadron. The course to be over some part of the English Channel outside the Isle of Wight with at least a six knot breeze'*.

Nobody accepted the offer, so a week later Commodore Stevens issued a more sweeping challenge to race *America* against any cutter, schooner or other vessel of the Royal Yacht Squadron (RYS); sticking his neck out even further, he promised to stake any sum not exceeding 10,000 guineas on the outcome. Such was the obvious supremacy of the yacht, there were still no takers. Time and tide for no man wait, and with the limited time Commodore Stevens could spend in England fast running out, he decided to enter *America* for the RYS Regatta to be held on August 22. In 1848, Queen Victoria had authorised the creation of a "One Hundred Guinea Cup" of solid silver (134oz), 27" tall for a yacht race, hosted by the Royal Yacht Squadron, Cowes. The race, open to all contenders, was to be run around the Isle of Wight over a distance of 53 miles. In 1851, eighteen schooners and cutters ranging between 47 and 392 tons entered the race, starting at 10 am and racing over one of the most complicated courses in the world without time allowance. *America* finished at 8.37 pm, winning for the New York Yacht Club the RYS trophy.

If the yachts had been subject to handicapping, the British yacht *Aurora* would have won the race by a good margin on corrected time, but then we would not have had the longest running challenge in the history of sport.

The Cup - which immediately became known as the *America's Cup* - became the property of the original owners of *America* and, after her sale, was committed to the custody of Commodore Stevens. He decided to dedicate it as a permanent challenge cup for international racing and placed it, under a Deed of Gift, into the custody of the New York Yacht Club (NYYC) as a trustee.

The Deed of Gift and Rules for Yacht Construction

The conditions outlined in the deed were straightforward. Any organised yacht club of any nation could issue a challenge but (giving the NYYC a slight advantage) the challenging vessel had to be between 30 and 300 tons; the match had to be sailed over the usual course set for the Annual Regatta of the club in possession of the Cup; and the challengers had to set the date, name the vessel and its dimensions and rig six months in advance.

In 1881 the original Deed of Gift was replaced by a more stringent one, which imposed additional limitations for the challengers. Yachts had to be constructed in the country which was to be represented, and all the vessels intending to compete for the Cup were to proceed under sail 'on their own bottoms' to the port at which the contest was to take place. In 1887 a new Deed of Gift was drawn up, the principle feature being that to obtain a match the challenging club must give 10 months notice. The competing vessels were limited in their waterline measurements and no restrictions were placed on centreboards; the number of races a challenger might demand by right was named as three, all to be sailed over ocean courses with at least 22 feet of water depth.

So began an era of international yacht racing that not only resulted in brilliantly fought contests over the years but also inspired designers to the highest form of racing development.

The first scantlings for the regulation of yacht construction were prepared in 1877 and published in 1878. Restrictions imposed on the yachts had caused a great deal of variation in design - not necessarily for the best. While the handicap of a 3000-mile ocean passage placed definite limitations on the challenger, all that

was required of the defender was that she should hold together for her first season-a short-lived blaze of glory. This undesirable development was fortunately halted by a shift of opinion favouring a stronger and more durable construction as well as a more generally serviceable type of hull. Up to and including a series of matches held in 1920, yachts of a waterline length between 69 and 95 feet for vessels with one mast and 80 and 115 feet for those with more than one mast, were eligible to enter. Handicapping via time allowances, were used to iron out any advantage which one yacht might gain over another.

The advent of the professional yacht designer at the turn of the century, together with an increased interest in racing, brought about a marked improvement in yacht construction. In 1906 and 1907 a series of conferences were held, attended by representatives of 13 countries, including the three national classification societies then in existence. Following these conferences the YRA formed the International Yacht Racing Union (IYRU) and introduced the first international rules for yacht measurement.

During discussions leading up to the 1930 Cup races, which were to be held for the first time between the great J-Class yachts, it was decided that in the interests of uniformity of construction of both challengers and defenders, all vessels taking part in future Cup races would be built in accordance with scantling Rules which had been established some years previously.

From 1937 to 1957 there was a 20-year lapse in the *America's Cup* races, largely due to the Second World War. Inevitably, the large J-Class sloops disappeared because in the post-war era they had become far too expensive and impractical to

build. Many were broken up during World War II and their keels used in the war effort where every scrap of metal was re-used.

The revival of the contest was brought about by another alteration to the Deed of Gift - this time by the New York Supreme Court in 1957. This amendment reduced the waterline length to 44 feet and welcomed a new type of competitor to the races, the smaller 12-metre boats. The restriction that vessels had to sail across the Atlantic to the race on their own bottoms had to be dropped - after a transatlantic crossing a 12-metre boat could end up looking pretty sick!

There is some confusion about exactly what is a 12-metre boat. A 12-metre yacht is not 12-metres long; the figure is derived from a formula. It's an IYRU rating but it has little to do with the length. The contending boats are all roughly 19-29 metres long, overall. The actual formula to establish the 12 metre rating is:

$$\frac{L + 2d - F + \sqrt{S}}{2.37}$$

Where L = length in metres
d = girth difference
F = freeboard
S = sail area in square metres

The ensuing ten matches in the 12 metre class from 1958 to 1987 were notable for the evolution in design and material technology of the yachts, from the early vessels built of wood, through the lightweight aluminium vessels and the fibre reinforced plastic (FRP) vessels in 1987. Then 1992 saw the debut of the innovative International America's Cup Class (IACC) yachts designed to take advantage of the very latest space age technology.

After a detailed study during construction by surveyors, their final official duty is to carry out a Confirmatory Classification Survey. This is peculiar to the yachts taking part in the *America's Cup* races and is traditionally undertaken just before the start of the races. The purpose of this survey is to ensure that no unauthorised alterations have been made between completion of construction and the commencement of racing so that the vessel's rating validity is retained.

The Challengers

After the excitement of 1851, the American Civil War intervened and it would be another 19 years before the race would again be held, when the British *Cambria* was defeated by the American *Magic*. Since then, except during times of war, the race has been held at fairly regular intervals.

Many valiant attempts were made to wrest the *America's Cup* from the defenders and there are many interesting personalities wrapped up in the history of the *America's Cup*, including the Earl of Dunraven, Sir Thomas Lipton, Sir Thomas Sopwith, Harold Vanderbilt, Alan Bond, Ted Turner, Dennis Connor and Peter Blake.

Sir Thomas Lipton was the sole contender for the Cup for 30 years from 1899 to 1930. Hoping to capture the trophy for Ireland's Royal Ulster Yacht Club, he commissioned a series of five special craft, all baptised *Shamrock* - and all defeated. At the age of 80 he was planning the construction of a sixth *Shamrock* when his death put a halt to his great ambition.

Sir Thomas Sopwith built the beautiful *Endeavour*, and issued his challenge through the Royal Yacht Squadron in 1934. This race was one of the most controversial with a 'luffing' incident between *Endeavour*

and the defender *Rainbow*. The Committee decided that *Endeavour* had fouled *Rainbow* and the Americans retained the title once more.

The spirit of oneupmanship that prevails over the races is incredible. The contending yachts are cloaked in secrecy that would be the envy of the CIA or MI5, and it is this air of mystery that enhances the excitement surrounding the *America's Cup*. The divulgence of any design details would give the competitors a tempting chance to use the information and emulate the design of a rival. Precautions are taken to ensure that the plans, designs and yachts are kept under the strictest security measures at all times. Many unconventional designs have emerged over the years and some have caused controversy.

Two very notable cases in point were the British challenger *Lionheart* in the 1980 series and *Australia II* in the 1983 series. *Lionheart* had a 'bendy' mast - the top section of the mast was made of glass fibre and foam, which could bend therefore offering a larger sail area at the top of the mast where it is quite an advantage under certain wind conditions. This was challenged by the French and Americans but allowed. By the following season the rules had been changed, not to disallow a bendy mast but based upon the sail area allowed. This meant that no matter how much your mast bent, as the sails now had to be cut in a certain way, all of the benefits of a bendy mast had been removed.

Controversy rose again in the 1983 challenge when it was revealed that *Australia II* the yacht which was to wrest the *America's Cup* from the Americans, had an unorthodox keel designed by Ben Lexcon. Surveyors inspected the keel and were satisfied that there was nothing untoward about its design which should

preclude it from competing - it was simply a very good idea. As the surveyors pointed out they are not actually interested in the shape of the keel or its hydrodynamics, they are interested in the weight distribution and the keel's centre of gravity so that the keel bolting arrangements can be approved.

And of course *Australia II* won the *America's Cup* from the Americans breaking a 132 year record.

Since 'Tommy' Lipton's time the stakes have escalated dramatically. For example the syndicates in the 1987 series of *America's Cup* races spent more than £100 million on their 30 hopeful contenders. It can take approximately 500 races through the Louis Vuitton Cup elimination series to decide which of the contenders will end up as the official Challenger for the *America's Cup*. A similar defender's series of elimination races will decide which boat will be the official Defender.

All contenders in the challenger's elimination races compete in three round robin tournaments. Winners score one point in the first tournament, five in the second and 12 in the third. The four best scoring boats meet in a semi-final race and then the two winners race each other for the honour of being the official Challenger.

The Challengers, 1851 – 2013

1851	<i>America</i> (USA) defeats the British fleet to win the Hundred Guinea Cup	1958	<i>Columbia</i> defeats <i>Sceptre</i> (GB)
1870	<i>Magic</i> (USA) defeats <i>Cambria</i> (GB)	1962	<i>Weatherly</i> defeats <i>Gretel</i> (Australia)
1871	<i>Columbia</i> and <i>Sappho</i> defeat <i>Livonia</i> (GB)	1964	<i>Constellation</i> defeats <i>Sovereign</i> (GB)
1876	<i>Madeleine</i> defeats <i>Countess of Dufferin</i> (Canada)	1967	<i>Intrepid</i> defeats <i>Dame Pattie</i> (Australia)
1881	<i>Mischief</i> defeats <i>Atalanta</i> (Canada)	1970	<i>Intrepid</i> defeats <i>Gretel II</i> (Australia)
1885	<i>Puritan</i> defeats <i>Genesta</i> (GB)	1974	<i>Courageous</i> defeats <i>Southern Cross</i> (Australia)
1886	<i>Mayflower</i> defeats <i>Galatea</i> (GB)	1977	<i>Courageous</i> defeats <i>Australia</i> (Australia)
1887	<i>Volunteer</i> defeats <i>Thistle</i> (GB)	1980	<i>Freedom</i> defeats <i>Australia</i> (Australia)
1893	<i>Vigilant</i> defeats <i>Valkyrie II</i> (GB)	1983	<i>Australia II</i> (Australia) defeats <i>Liberty</i> (USA)
1895	<i>Defender</i> defeats <i>Valkyrie III</i> (GB)	1987	<i>Stars & Stripes</i> (USA) defeats <i>Kookaburra III</i> (Australia)
1899	<i>Columbia</i> defeats <i>Shamrock</i> (Ireland)	1988	<i>Stars & Stripes</i> (USA) defeats <i>New Zealand</i> (New Zealand)
1901	<i>Columbia</i> defeats <i>Shamrock II</i> (Ireland)	1992	<i>America</i> (USA) defeats <i>Il Moro di Venezia</i> (Italy)
1902	<i>Reliance</i> defeats <i>Shamrock III</i> (Ireland)	1995	<i>Black Magic</i> (New Zealand) defeats <i>Young America</i> (USA)
1920	<i>Resolute</i> defeats <i>Shamrock IV</i> (Ireland)	2000	<i>Black Magic</i> (New Zealand) defeats <i>Luna Rossa</i> (Italy)
1930	<i>Enterprise</i> defeats <i>Shamrock V</i> (Ireland)	2003	<i>Alinghi</i> defeats <i>Team New Zealand</i>
1934	<i>Rainbow</i> defeats <i>Endeavour</i> (GB)	2007	<i>Alinghi</i> defeats <i>Emirates TNZ</i>
1937	<i>Ranger</i> defeats <i>Endeavour II</i> (GB)	2010	<i>BMW Oracle</i> defeats <i>Alinghi</i>
		2013	<i>Oracle Team USA</i> defeats <i>Emirates TNZ</i>

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