The World Of

THE MUSEUM OF YACHTING
Fort Adams State Park
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Model Yachts

THE MUSEUM OF YACHTING
NEWPORT, RI

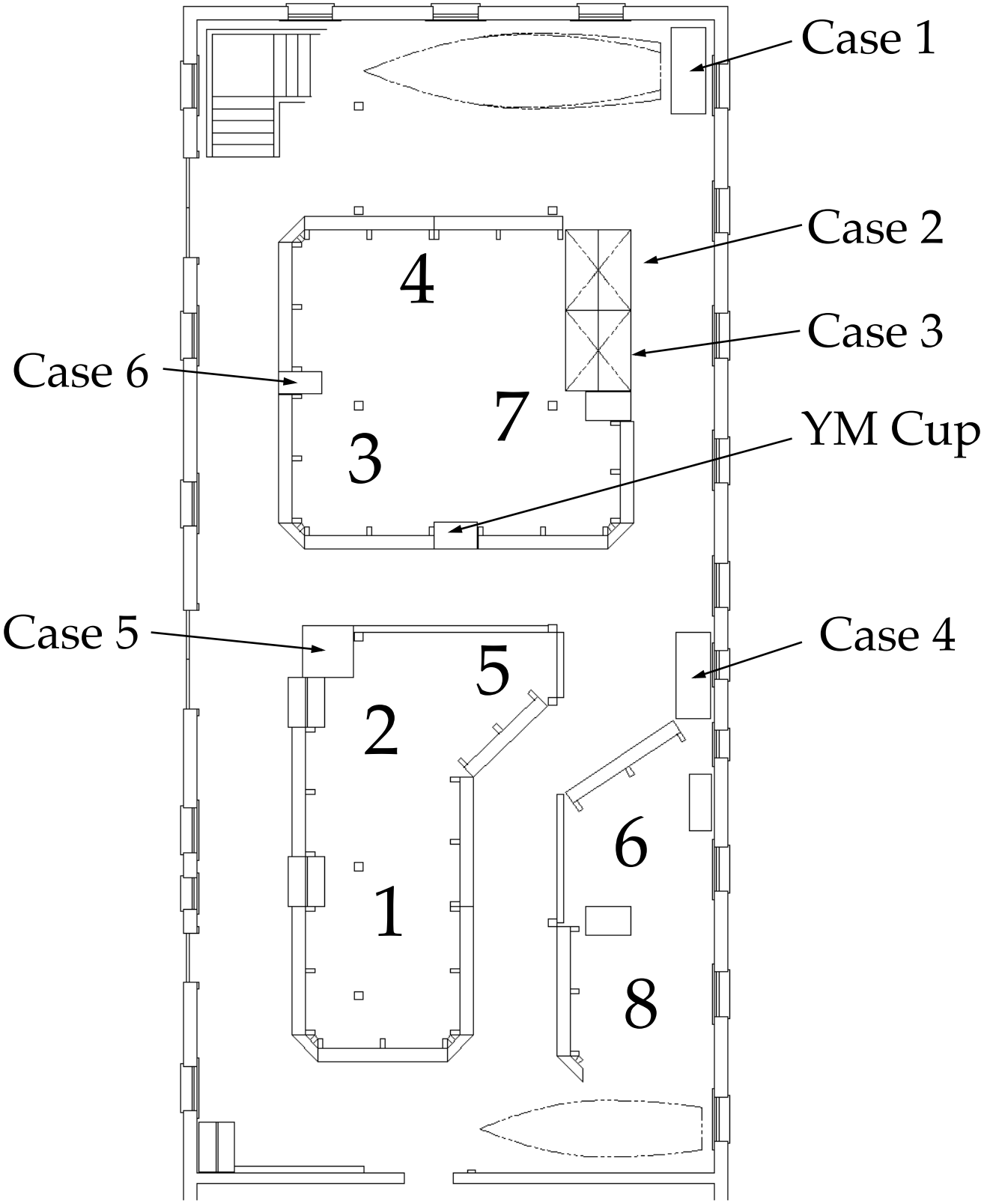
AT THE MUSEUM OF YACHTING, FORT ADAMS STATE PARK, NEWPORT, R.I.

Pond Model of sloop with Manhattan Yacht Club burgee, ca. 1895-1910. Frederick Kissan Lord Collection ©Mystic Seaport, Mystic, CT

The World of Model Yachts is the largest collection of scale model yachts ever displayed together in the world! This exhibit depicts a remarkable snapshot of yachting history featuring scale model boats of all size and description in the context of the development of full-scale sailing designs. From 9-foot J-boat models to 56" 12-Metres with America's Cup heritage this exhibit illustrates the sport of model yachting and its encompassing influence on full-scale yacht design from the 1900's to the present day.

The World of Model Yachts is presented in collaboration with the U.S. Vintage Model Yacht Group and the American Model Yacht Association

Areas of the Exhibit



The Relationship Between Model and Full Size Yachting

Since the latter 1800s, yacht designers and Naval Architects have employed models in the development of full scale yachts. The great Nathanael Herreshoff designed by carving half-hulls and yacht designs have been tested with prototype sailing models and tow tank models. Innovative model design features and material uses have even been mirrored in America's Cup racers and vice versa. Further, design theories developed for models have been applied widely in full scale yachting. Bill Daniels' 1905 method of calculating static hull balance for his *XPDNC* model showed designers how to produce a hull that did not yaw when it heeled, a technique extended by Admiral Turner's "Metacentric Shelf" design method, first documented in a 1931 *Yachting* magazine article on models. In this way, a direct relationship between sailing models and full size yachts has been well documented.

The *World of Model Yachts* exhibit was structured to educate visitors on this relationship, by citing well-known designers plying their skills in both sports. Zone 1 and several Zone 7 models were built from designs developed by Starling Burgess, Nat Herreshoff and Olin Stephens. The four large Zone 1 design panels depict the plans developed by Walter Many, N.A., for the *Emma* sloop model documented by *Rudder* magazine in 1899.

Other items provide evidence of the role of models in yachting. On the Zone 1 display panel is a 1929 photo of Nathanael Herreshoff fully engrossed in building a plank-on-frame, vane-steered model yacht. Captain Nat built three such models, with two preserved at the Herreshoff Marine Museum and the other at the Mystic Seaport Museum. Norman Skene, author of the renowned book *The Elements of Yacht Design*, devoted an entire chapter to A Class racing models and their complex design formula. This book's chapter is in the glass case next to Zone 7. Skene also collaborated with Frank Paine on the design of the 1930 J Class yacht *Yankee*. In addition, Skene was measurer for the Model Yacht Racing Association of America (MYRAA) in the 1920s. Measurement Certificates signed by Skene for Boston Model Yacht Club B and A Class models hang by Zone 7.

Zone 7 has images of the radio controlled model yachts of Ben Lexcen, designer of the 1983 America's Cup winner *Australia II*. A 1983 radio model has a winged keel like *Australia II*. Zone 7 also has a tow tank hull of the 1974 12 Meter *Intrepid* which has been converted to radio control.

Models of Full-Scale Boats

These are what most people think of when they hear the term "model yacht:" a model *of a* yacht. The models in the exhibit of this type are to a greater or lesser degree scale models of actual full size boats. "Greater or lesser" is the key phrase: because of the laws of physics, a model can never carry as much sail as her full-size prototype. Sail area is reduced by the square of the reduction in size, but ballast is reduced by the cube. A half-size model therefore has one-quarter the sail area but only one-eighth the ballast. On the other hand, model sails are closer to the water where the wind is, usually lighter.

As the result of much trial and error, scale model skippers have learned that six foot models of the typical 150 foot schooner, sloop, or cutter can by sailed successfully. This is the reason for the size of many of the models in this display.

(Above) 1891 Gloriana *Radio Control 96-Inch Gaff Sloop (#1, Zone 1). Nat Herreshoff's Revolutionary Design for 46 Foot Class Yachts. Scratch-Built 2001 with West Epoxy/Fiberglass Cloth Hull. Builder/Owner: Andrew Charters*

(Top Left) 1905 Elizabeth Silsbee *Radio Control 93-Inch Topsail Fishing Schooner (#2, Zone 1). W. Starling Burgess Traditional Full-Scale Design. Scratch-Built 2000 with West Epoxy/Fiberglass Cloth Hull. Builder/Owner: Andrew Charters*

(Top Right) 1932 Brilliant *Radio Control 54-Inch Gaff Schooner (#3, Zone 1). Olin Stephens Traditional Full-Scale Design. Scratch-Built 1997 with Planked Hull. Builder/Owner: Alan Suydam*

(Left) 1938 When & If *Radio Control 60-Inch Schooner (#5, Zone 1). John Alden Traditional Design for General George Patton. Scratch-Built 1999-2004 with Planked Hull Using Original Plans. Builder/Owner: Fred Abbe*

(Lower Left) 1920s Cabin Cruiser Radio Control 36-Inch Model (#60, Case 1). Design: Classic Raised-Deck Cruiser. Scratch-Built 2001 Using Planked-on-Frame Hull. Builder/Owner: Al Hubbard.

The Lure of the America's Cup

An obvious inspiration for scale model designers and builders has been the America's Cup and its attendant publicity. Over the years there have been individual and commercial models based on America's Cup designs, and several modern radio control classes have been inspired by America's Cup designs.

(Above) 1921 (Est.) Resolute *America's Cup Free Sailing 48-Inch Yacht (#10, Zone 3). Double Headsail Rig Like 1920s Era America's Cup Boats. Carved Hull and Fin & Bulb Keel. Owner: John Snow*

(Right) 1935-2004 Yankee III. Radio Control 36-Inch America's Cup J Class Yacht (#4, Zone 7). Scratch-Built 2003-2004 Using Carved Foam Hull. Builder/Owner: Earl Boebert

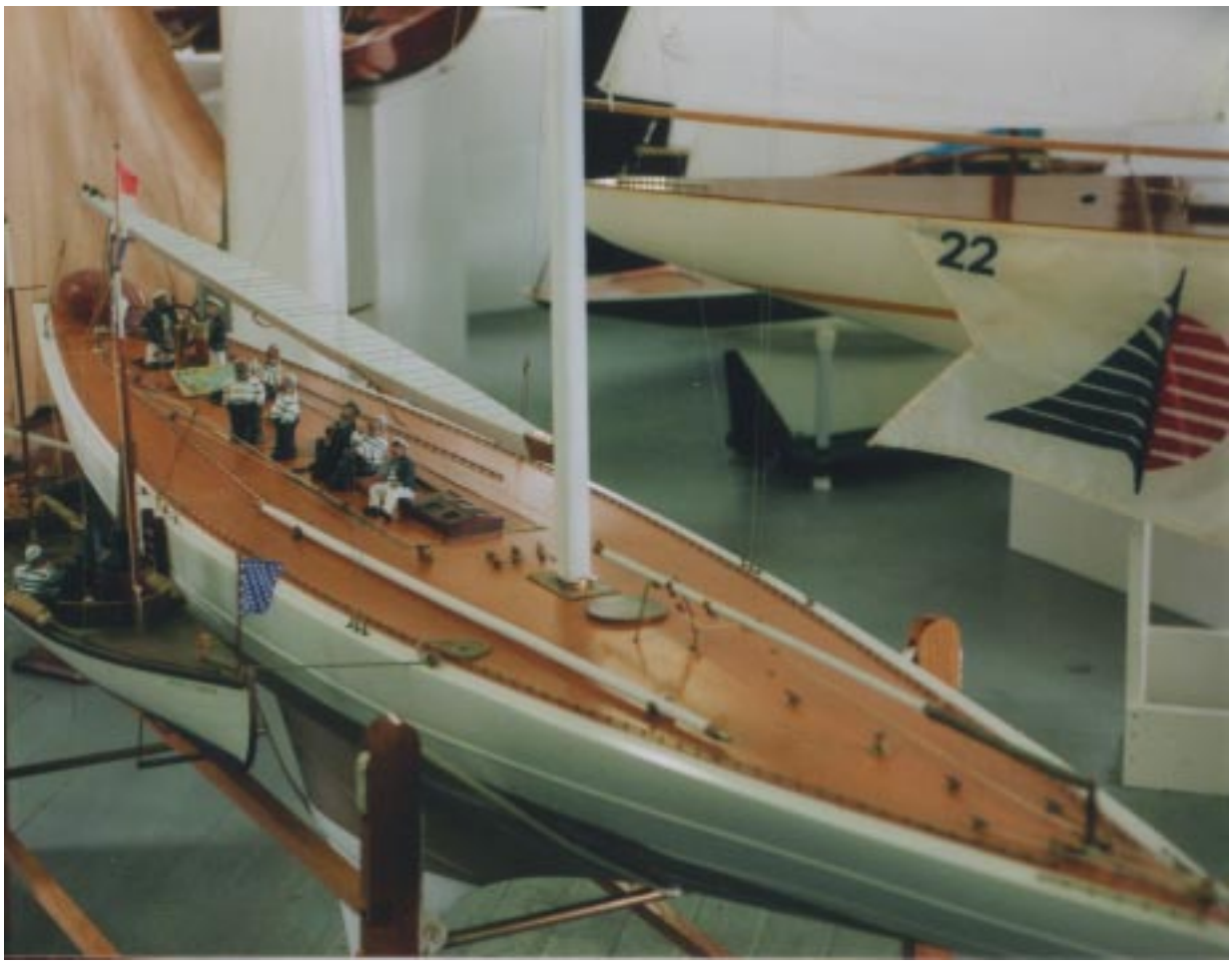
Beginner's Model Yankee III

In 1935, the J Class yacht *Yankee* was being prepared by its owner Gerard Lambert to cross the Atlantic and sail a series of races against boats in England. This regatta was planned by Lambert to mitigate the bad feelings amongst English yachtsmen that resulted from a series of incidents in the 1934 America's Cup.

With interest in this event running high in Boston, the celebrated model yacht designer John Black produced a free sailing model that he called *Yankee Jr.* This model was presented to the public in a series of articles in the Boston Evening Transcript, and plans were sold for the princely sum of twenty-five cents.

Beginning in 2001, Earl Boebert began the process of converting Black's design to radio control using modern materials. The object was to produce a boat that could be built and sailed by an absolute beginner. Thanks in no small part to John Black's design skill, the boat was a success. Being derived from *Yankee Jr.*, the obvious choice of names was *Yankee III.*

A book describing the construction of *Yankee III* is available in the bookstore or over the Web at www.swcp.com/usvmyg



1978 Enterprise *J Class Radio Control 89-Inch Yacht (#26, Zone 7). 1/16th Model of Starling Burgess Successful 1930 J Boat AC Defender. Scratch-Built with Scale Features 2000 from Fiberglass Hull. Builder/Owner: Tod Johnstone*

AMYA J Class Enterprise

The AMYA J Class has its origins in a 1/20 size, semi-scale model of the J Boat *Whirlwind*, produced by Chuck Millican in Pewaukee, WI, around 1974. These boats, like their prototypes, towered over other AMYA classes: seven and half feet long, eight foot mast height, sixty-five pounds displacement and 2500 square inches of sail. Despite the obvious difficulties of handling and transport, by 1976 almost two hundred kits had been sold. Strangely, the class declined rapidly until 1978, when a new set of rules and a fiberglass hull for *Enterprise* were produced. For reasons that no one fully understands, the new rules called for a 1/16 rather than 1/20 size model, with an additional draft of 2 inches permitted and a limit on mast height of 8 feet. The 1/20 *Whirlwinds* were "grandfathered" into the class and can still be seen at AMYA J Class events. Additional boats have been scratch built and fiberglass hulls have been produced for *Shamrock V* and *Ranger*.

This model of *Enterprise* began with the commercially available fiberglass hull and had additional detail added, using Harold Vanderbilt's' 1931 book *Enterprise* as a reference. Despite it's appearance as a static scale model, this is a fully functional radio controlled sailboat, including control of the centerboard.

East Coast 12 Meter

The East Coast 12 Meter hull was made by taking a mold off a tow tank model for the never-built 1962 12 Meter *Eagle*, Charles Morgan design #2770. The class was organized in the late 1960's and is active to this day. Hull and sail dimensions are tightly controlled but considerable freedom is given in choice of rig. This has led the class to be known as the "rig tuner's delight." Extensive experimental and analytic work has been done on the class, particularly by skippers in the Seattle area.

When the America's Cup matches were in Newport, RI, Mini-America's Cup Association (MACA) sponsored radio control model yacht regatta held off the beach near the Newport Sail Center at Fort Adams State Park, Newport. These 1974 to 1997 races were initially scheduled with the full-scale America's Cup events using East Coast 12 Meter Class models.

The MACA event concept was conceived and supported by R&R Promotions International of Fairfield, NJ. Rich Palmer of R&R was the coordinator and driving force behind this series. Success of these competitions came from using similar challenge formats to the full-scale AC races, where defender and challenger skippers were selected to represent their respective countries. Thus, the MACA was able to support a high-level of skilled competition through elimination races to then match the best East Coast 12 Meter skippers in the world. MACA Championships were scheduled during the same period that America's Cup races were held in Newport. MACA Trials with the Newport "Mayor's Cup" as its award were raced fleet-style every year at Ft. Adams to maintain interest for the future MACA events. Further, after "Australia II" won the AC matches in 1983, MACA events were then staged annually thereafter, with interest slowly declining when the real America's Cup matches were no longer held in Newport.

Finally, an important objective of the MACA races was to provide the public the opportunity to watch R/C models in these Mini regattas. These East Coast 12 Meter model races employed the same racing tactics and rules as real yachts; albeit, using smaller scale America's Cup courses. From this perspective alone, they were considered highly successful in helping to educate others on the sport of model yachting.

For more details on the original MACA events in Newport and East Coast 12 Meter yachts in general, contact George Greenhalgh at 401-245-7493 or Bygeorge18@aol.com George is the Commodore of the Narragansett Model Boat Club, which conducts regular East Coast 12 Meter model racing at Roger Williams Park in Cranston, RI.

1970 AMYA East Coast 12-Meter Class Radio Control 57-Inch Yacht (#23, Zone 4). Scratch-Built from Manufactured Fiberglass Hull with Integral Deck. Owner: Mystic Seaport Museum.

108 Inch Radio Controlled 12 Meter Intrepid

Here's what Harry Sweitzer has to say about his boat:

"The R/C model of *Intrepid* was made by me from the tow tank model of Intrepid which was given to me by a member of the West Coast syndicate that campaigned *Intrepid* in 1974 against *Courageous. Intrepid* was beaten in the trials and *Courageous* went on to win the cup. The mast is built of Sitka spruce, two pieces laminated with carbon fiber core. The model in its sailing configuration carries a lead bulb 10" below the wooden keel. "

2003 Team New Zealand Model

Built in 2000 by "AC -15 Events," and given as gifts to each of the "Family of Seven" sponsors for Team New Zealand to sail recreationally in the Viaduct Basin in Auckland. This particular boat was owned by SAP before it was donated to Sail Newport.

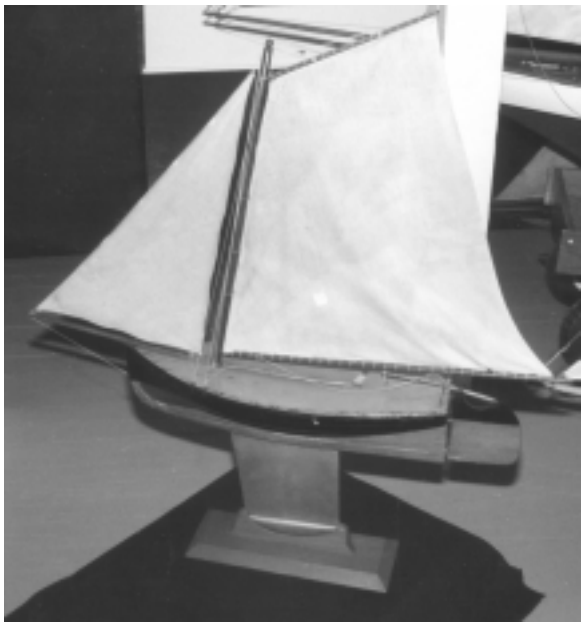
(Left Below) 1974 Intrepid *12 Meter Radio Control 108-Inch Yacht (#25, Zone 7). Sparkman & Stephens Intrepid Tow Tank Hull, Converted to Radio Control Model in 1990s. Builder/Owner: Harry "Skip" Sweitzer.*

(Center) 1995 "Newport 60" Class Radio Control 60-Inch Yacht (#27, Zone 7). Designed by Andrew Burton in 1989. Scratch-Built 1995 with Molded Hull with Deep Fin Keel. Designer/Builder/Owner: Andrew Burton of Trident Studio, The Scale Model Company, Newport; CR-914 Model Distributor.

(Right Below) 2003 Team New Zealand America's Cup Class Radio Control Yacht (#E-3, Entryway). Scale Design with Graphics of New Zealand Defender AC Boat. Owner: Donated to Newport Sail by SAP Inc.

Miniature Racing Yachts

The bulk of model yachts built throughout the history of the sport have been miniature racing yachts. That is, they are not replicas of any full scale boat but rather are designed within the limits of their own rating rules and sailed against each other in competitions just as intense as their bigger sisters. Their technical evolution is also similar, with designers pushing the limits of rating rules and builders using the latest materials and techniques of the day. We have, for example, evidence that models in the 1880's used aluminum, an exotic material of its day, and in the modern classes you will find carbon fiber, kevlar, dacron, and other modern materials. Model yachting is one of the most Corinthian forms of the sport – not only do skippers sail their own boats, they usually build them and often design them as well.



Early Days (1872-1922)

There are mentions of model yachting activity as early as 1851, when an American replica of the yacht "America" sailed against, and lost to, a British model at Birkenhead. Tyrone Biddle, a British merchant officer whose 1879 book is the earliest known work devoted to the sport, mentions sailing models in New York, Boston, and Philadelphia, probably in the 1850's and 1860's.

The earliest documentary records we have of organized model yachting come from Brooklyn, New York, where a club was formed to sail on the lake in Prospect Park in 1872. By the late 1890s there were several clubs active in the area, and the first union of clubs, called the Model Yacht Racing Union of North America (MYRUNA), was formed to foster inter-club competition. In addition, there were organized clubs in Philadelphia, Minneapolis, and San Francisco.

The MYRUNA rating rules followed the full-size yachting practice of the day. We now think of class rules as a "pass/fail" set of criteria, in which a boat is either legal or it is not. The rules of the 1890s grouped boats into rough classes based on LWL, and then applied handicaps based on the square root of the sail area. Boats ranged from 48 to 72 inches in hull length (plus bowsprit) and carried 1500 to 3000 square inches of sail area in simplified gaff rigs. Steering was by a simple sheet-to-tiller gear on the runs and loose rudder (boat balance only) on beats and reaches.

Handicapping was facilitated by the manner in which the races were run. The yachts were controlled by skippers rowing in skiffs. Races were run on a triangular course, and although the boats started together, the race was actually run against the clock. A 5 second penalty was assessed for each time the skipper touched a boat, and this and the handicap was added to the elapsed time to obtain the time actually used to score the winner. A typical race day involved as many as five heats requiring fifteen to twenty minutes of hard rowing, so the sport required a fair degree of physical fitness. Model yachtsmen were actually viewed as a something of a rough crowd in those days. One of the few places where an unmarried Victorian couple could have an unchaperoned conversation was out on the recreational lakes, and they didn't particularly appreciate being run down by an out of control six-foot model packing 3000 square inches of sail and going full speed.

(Above)1880s (Est.) "Midget Yacht Club" Free Sailing 36-Inch Gaff Yacht (#6, Zone 1). Designer/Builder Unknown. Scratch-Built with Carved Hull from Solid Wood Block. Restored by Greg Worth in 1998. Owner: John Snow.

(Left) 1896 Brooklyn Daily Eagle Perpetual Challenge Trophy - "Eagle Cup" (Case 5). Owner: Mystic Seaport Museum.

(Foreground) 1900s (Est.) Open-Water Free Sailing 123-Inch Gaff Sloop (#17, Zone 7). John Forsyth Builder; Unknown Designer. Owner: Mystic Seaport Museum, CT. (Background) 1950 Midge 36 Inch Restricted Class Free Sailing Yacht (#21, Zone 7). Bill Daniels Design with Braine Steering. Scratch-Built 1952 with Carved Pine Hull. Restored by Graham Reeves in 2004. Owner: John Snow

Skiff Sailed Model

This unfinished boat was designed for open water, skiff-sailed racing under the handicapping system described previously. It is scratch built with a planked hull, and is missing its keel, sails and rigging, and steering mechanism.

Pre-1900 Sails

Union silk is a cloth originally intended for umbrellas, and consists of a cotton warp with a silk filling. There was enough demand for the model yachting form of the cloth shown here, with the stripes woven in to simulate full scale seams, that it was produced from the 1880s until just before World War II. This suit of sails is one of three of different sizes for different wind conditions, and includes a triangular spinnaker. It is displayed with a silhouette of an 1895 model yacht designed by the marine artist Franklyn Bassford.

(Left) Pre-1900 Union Silk Sail Suit (Zone 2 Wall). Designer/Sailmaker: Unknown. Owner: Earl Boebert.

(Opposite Left) 1900s (Est.) Museum of Yachting Free Sailing 40-Inch Marconi Sloop (#8, Zone 1). Designer/Builder Unknown; Owner: Museum of Yachting.

(Opposite Right) 1910s (Est.) Catamaran Free Sailing 46-Inch Gaff Yacht (#9, Zone 2). Designer/Builder Unknown. Owner: John Snow

The Roaring Twenties (1922-1932)

By the 1920's, model yachting was covered extensively and actively promoted by Yachting Magazine, continuing the coverage given in magazines such as The Rudder, Outing, Forest and Stream, etc. The domestic classes were governed by a complex rating rule that yielded a confusing mix of boats -- a situation that was to change radically in 1932. The size and sail area ranges remained pretty much as during the previous era. Full keel hulls were almost universal, and the boats were steered by the simple and effective Braine gear, invented by a Londoner in 1904.

For a typical boat of the era, see the photograph of *Resolute* on Page 4.

The Great Depression (1932 - 1945)

In 1932, Roy Clough of the Marblehead club came up with a set of rating rules that swept away the existing complex classes. Known variously as the Marblehead, M, or 50/800 class, the rules were simplicity themselves: 50 inches LOA and 800 square inches of sail area, and a small handful of restrictions. The result was an almost perfect compromise: small enough to be carried by one person and fit in the back seat of the average automobile, but large enough to look impressive on the water; almost impossible to over-canvas, but with enough sail area to sail well in a range of winds. In short order thousands were built, and the class was quickly recognized both nationally and internationally and stayed recognized to the present day.

Hull shapes of the era quickly stabilized on the fin and separate skeg model, and the well-understood Braine gear was universally used for steering.

Model yachting boomed during the Great Depression because a boat could be built for very little cash from scrap materials, hand tools, and a little time. They could then be sailed for free in public ponds and lakes. Many of the sailing venues were constructed by the Works Project Administration as a result of lobbying by industrial arts teachers in various cities; it also probably didn't hurt that Franklin Roosevelt had been an avid model yachtsman prior to being stricken with polio.

Free sailing races were run on a "round robin" basis in which each boat competed against each other boat. Two heats, or "boards" were run, one with and one against the wind. The scoring was three points for winning the beat and two points for winning the run.

By the late 1930's there were three basic classes: the International A, the Marblehead, and well behind them in numbers, the Six Meter or "Wee Six" class. The most significant technical development was the rise of vane steering.

The vane gear for self-steering had been invented by Nathanael Herreshoff in 1875 for a model catamaran; the actual model survives, and can be seen in the Herreshoff Museum in Bristol, Rhode Island. The idea was pretty much forgotten, and then intermittently reinvented several times, up to the mid-1930s. In 1935 the Norwegian Sam Berge used one to win the Yachting Monthly Cup, and interest resurfaced with a vengeance.

Early vanes were simple devices that required retrim on changing tacks. In 1940, Ted Houk of Seattle published the results of work he and Gus Lassel of southern California had done on "self-tacking" vanes that flipped automatically over on the other tack when

turned at pondside. (Interestingly, just prior to this, Nathanael Herreshoff was experimenting with model yachts and self-tacking vanes in his retirement in Florida. His work in this area was not brought to the attention of competitive model yacht skippers at the time.) More importantly, Lassel and other skippers had been working on the sliding rig for the M Class, where the degree of mast adjustment was not limited by the rating rules as it was in the 6 Meter or International A classes.

The theory behind the sliding rig was that a free sailing boat naturally heads up into the wind as wind velocity and boat speed increases. In a boat with a fixed mast position, this is compensated for by adjusting the mast rake and jib trim, often with bad effects on sail efficiency. The sliding rig, at least in theory, allowed a skipper to set the sail trim for maximum thrust, and then simply rack the rig forward or back to get the proper "lead" or balance to enable the boat to hold its course by itself. Traditionalists were predictably outraged, and a dispute erupted between them and the "gadget makers" that lasted to the end of the free sailing era.

1933 Nat *M Class Free Sailing 50-Inch Yacht (#13, Zone 4). Restorers: Durland Brown 1994 and Greg Worth 1998. Owner: John Snow*

A small level of activity was maintained during World War II, mainly due to the efforts of Ted Houk of Seattle, whose mimeographed club newsletter circulated, and carried news, from other areas of the country. During this time sliding rigs and vanes grew in sophistication, and the most significant change in hull form was the "seal flipper" fin, jointly developed by Houk, Lassel, and Ted Thorsen. The shape of the keel was aimed at the conflicting goals of moving the Center of Lateral Resistance aft while still keeping the Center of Buoyancy forward. In addition, tow tests of inclined hulls indicated the "seal flipper" produced lower drag at the fin to hull joint, and many skippers believed that hulls with it tacked more cleanly. In any case, it dominated hull design in the M class until the end of free sailing.

Construction techniques were also pioneered by Houk in this period, in collaboration with George Pocock, an internationally famous builder of racing shells. In 1938 they began building M class hulls from cold-molded from two layers of 3/64 cedar strips. This technique can be seen on the model "Humptulips" (Boat #31).

M 1 Nat

This boat is significant because it is "M 1," the first of the Marblehead Class, designed and built by Roy Clough, the inventor of the Class. It has a double-ended carved hull and a "Marblehead" sheet-to-tiller steering gear to be used when running before the wind. A similar gear is called the "Clyde" gear in Great Britain.

Christchurch Four Foot Six

Model boating began in Hagley Park, Christchurch, New Zealand when Lake Victoria was formed in 1897. A swampy, muddy depression, the rim of which was used for penny farthing cycle racing, was graded, lined with clay and pugged by draught horses, then filled with water from various artesian bores - the club was then formed and opened the next year. The spirit of the club still lingers on from the first General Meeting held in Warner's Hotel on Friday 17 June 1898

The object of the Club shall be to provide amusement and improvement in model yachting giving all possible encouragement to the designing, construction, rigging, fitting and sailing of models of all description, also to induce members to take an interest in Naval and maritime affairs.

The Club was prolific, boats were probably based on those found in England, narrow boats, carved from

Reference Insert

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2	1905	2000	Elizabeth Silsbee	1	3
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Models from Full Scale Boats

1920s Baby Bootlegger Radio Control 39-Inch Model (#59, Case 1). Design: Classic Gold Cup Racer. Scratch-Built 2000 Using Planked-on-Frame Hull. Builder/Owner: Al Hubbard

1930s Cabin Cruiser Radio Control 36-Inch Model (#61, Case 1). Design: Typical Era Day Cruiser. Scratch-Built 2002 Using Plank-on-Frame Hull. Builder/Owner: Al Hubbard

The Lure of the America's Cup

1899 Columbia *America's Cup Free Sailing 48-Inch Gaff Yacht (#7, Zone 2). Nat Herreshoff's Successful 1899 & 1901 AC Defender Design. Scratch-Built by New York City Craftsman 1920 with Carved Hull. Owner: John Snow.*

1930s Classic Free Sailing 30-Inch Model Yacht Hull (#49, Case 2). Designer/Builder Unknown. Scratch-Built with Carved Hull. Owner: Linda Faste

This is one of the many "mystery boats" that exist in vintage model yachting. Nothing is known of this boat except that it is very likely a model of the J Boat *Yankee* and was built by a competent craftsman. The pintle in the stern suggests that it might have been equipped with vane steering. It is to avoid puzzles like this in the future that we urge owners of boats to put a note documenting them in the hull, so that future generations may know where they came from.

1973 Judy *Newport 12 Meter Class Radio Control 72-Inch Yacht (#24, Zone 4). Built 1974 from Manufactured Fiberglass Hull and Design Plans. Builder/Owner: Jack Evans*

Originally called the "West Coast 12 Meter," the origins of this class have never been satisfactorily documented. What is known is that the class originated in Southern California sometime in the late 1960's and was sailed regularly in the Newport Beach, CA area. Some accounts state that the hull was based on *Columbia Mark 3* by Sparkman and Stephens and others that the inspiration was *Constellation*. What is known is that the resultant design is large, powerful, and well able to stand up to heavy winds and rough water.

1998 AMYA Mermaid *CR-914 Class Radio Control 36-Inch Yacht (#E-2, Entryway). 1990s Era America's Cup Design with Mermaid America's Cup Graphics. Built in 1998 from CR-914 ABS Model Kit. Builder/Owner: Dave Ramos of Chesapeake Performance Models; North American CR-914 Distributor*

The CR-914 was designed in Japan by Kazuo Takei in 1986, motivated by a "Mini America's Cup Regatta" that was proposed to be held in Osaka in 1983. The design was based on the then-new International America's Cup Class – the "CR" stands for "Cup Racer" and the 914 is the length of the boat in millimeters. The boat was introduced into the United States in 1990 and an official class was formed in 1994. The early years of the CR-914 class witnessed a fair amount of turmoil both in class organization and distribution of the kits. Both of these have now settled down and the class is supported by one of the best newsletters in the AMYA.

Early Days

1894 Midget Yacht Club Race Trophy (Case 5). Owner: Marblehead Model Yacht Club

1895 Midget Yacht Club Race Trophy (Case 5). Owner: Marblehead Model Yacht Club

1900s "Balmain Bug "R/C 12-Inch Skiff Yacht (#17A, Zone 7). Based on Famous Australian 18-Footer Skiff Racers. Hull Length Only Design Rule Restriction. R/C 12-Inch Fiberglass Kit Model Built 2004. Designer: Andrew Cook. Builder/Owner: Bob Francis.

The Roaring Twenties

1929 "450 Sail Area" Class Free Sailing 40-Inch Yacht (#12, Zone 2)
Scratch-Built 1996 with Carved Hull
Builder/Owner: Ben Martin

L. Francis Herreshoff had long advocated a simple sail area rule with no other restrictions as the best way of rating yachts. In the 1920's he succeeded in convincing the Marblehead Model Yacht club to adopt such a rule, limiting sail area to 450 square inches. A wide variety of designs resulted, of which this Carroll Sweet effort is one of the most graceful. The "450 Sail Area" rule was superseded in 1932 by the Marblehead or M Class rule, 800 square inches of sail and 50 inches LOA maximum.

1920s Osprey Model 36-Inch Hull (#41, Zone 8)

Boucher Playthings Co. Commercial Design. Scratch-Built 1999 with Carved Hull from Original Boucher Plan. Builder/Owner: Ben Martin

H. E. Boucher was a Naval Architect and marine engineer who, beginning in 1905, supervised an organization called the Experimental and Model Shops where practically all the marine models made in the United States at that time were turned out. Sometime in the 1920's he formed Boucher, Inc. in New York City and produced a range of sailing, power, and static models in both kit and ready-built form. Boucher models were of the highest quality and uniformly sailed well. The company has passed through several owners and still exists today in the form of Bluejacket Shipcrafters of Maine.

1926 30 Inch Class Race Trophy (Case 5). Marblehead Children's Summer Model Regatta Award by Model Class. Owner: Marblehead Model Yacht Club

The 1920's also saw the rise of tethered powerboat racing. This sport, appealing mostly to the home machinist, began in the early 1900's using high-speed flash steam power and later evolved to internal combustion engines. A flash steam power plant is one in which water is pumped into a heated coil of tubing, "flashing" immediately into steam as opposed to being heated in a boiler. A flash steam plant does not have any reserve of stored power – if the pump stops, steam is no longer produced.

1924 Gadfly 40-Inch Steam Tether Boat (#50, Case 4). H.C. Field Builder; Single-Planked Hull. Three-Cylinder Steam Engine. Detroit MYC Race Winner 1924. Owner: Kent Lund

The Great Depression

1930s "Star" Commercial 36-Inch Kit Model with Box (#42, Zone 8). Boucher Playthings Co. Wooden Hull Kit and Components. Owner: John Snow

1930s "Star" Free Sailing 36-Inch Yacht (#43, Zone 8). Boucher Playthings Co. Kit Design from Full-Scale Star Yacht. Built in 1940s Using Kit's Pre-Carved Hull and Components. Owner: John Snow

H. E. Boucher was a Naval Architect and marine engineer who, beginning in 1905, supervised an organization called the Experimental and Model Shops where practically all the marine models made in the United States at that time were turned out. Sometime in the 1920's he formed Boucher, Inc. in New York City and produced a range of sailing, power, and static models in both kit and ready-built form. Boucher models were of the highest quality and uniformly sailed well. The company has passed through several owners and still exists today in the form of Bluejacket Shipcrafters of Maine.

1935 Corinthian Yacht Club Model Yacht Race Trophy (Case 5). Corinthian YC Award to Winner of Marblehead MYC-Hosted M Class Race. Marblehead MYC Established 1925; First Club to Race M Class Models 1930 Owner: Marblehead MYC

1936 Cheerio I M Class Free Sailing 50-Inch Yacht (#20, Zone 4). Scratch-Built 1960 from A.J. Fisher Plan with Carved Hull. Builder/Owner: Alan Suydam

Here is Al Suydam's description of how this boat came to be:

"I was just 16 years old and living on Long Island, New York in 1960, when a trip to the local public library resulted in my checking out John Black's book on model yachting. A friend and I decided it would be fun to build two models and have a race. My father helped me scale-up the plans in the book and we went to the lumber yard for the sugar pine that the book recommended. When we completed the hull, we took a trip to New York City to purchase Fisher fittings. Final fitting-out was completed with a balsa wood vane and shade cloth sails. I free sailed my model a few times in Long Island Sound before college, marriage, and a career turned it into a pretty display model. As far as I know, my friend never finished his model, as he was a year older and was off to college before we finished building.

"In 1993 I was browsing through a model magazine when I saw an article about radio control sailing models. I thought it would be fun to convert my Cheerio model to radio control. A local model shop was an advertiser in the magazine, so I enlisted their help in buying the necessary radio equipment. I used only two channels with a Futaba S-10 sail control winch with separate 6 volt power for the sails, and a standard S-148 servo controlling the rudder. At the same time I completely refinished the hull and deck and made a new set of dacron sails using 3/4 oz. spinnaker cloth from the local sailmaker.

"In its radio form this boat won the USVMYG National Regatta twice. Al has since restored the boat to its original 1960 vane configuration.

1937 Chico II 36-Inch Class Radio Control Yacht (#15, Zone 4). A.J. Fisher Design; MYRAA Class Championship Winner. Detroit School System Shop Model Since 1937. Scratch-Built 2002 with Carved Hull. Builder/Owner: Alan Suydam

1930s Free Sailing Braine Steering Gear (Case 6) Display Board Crafted by Graham Reeves, UK Owner: Graham Reeves

The most difficult point of sail for a free sailing model yacht is to run before the wind. With the boom swung to one side, an asymmetry of force is set up that must be countered by applying helm.

A variety of mechanisms were devised to solve this problem by automatically applying compensating helm on the run. The earliest of these was weighted rudders, which swung as the boat heeled. The next generation involved sheet to tiller steering of one form or another.

Finally, George Braine of England invented the Braine gear, which solved the problem in such an elegant and effective way that it dominated free sailing for forty years. It is a form of sheet to tiller steering, used only on the run, in which crossed main sheets are attached to the quadrant in such a way that increased pressure on the sail pulls against a compensating elastic and applies the proper degree of helm. The secret of the Braine gear is its dual forms of adjustment: the tension on the elastic and the placement of the sheet hooks on the quadrant, which allows the amount of compensating helm to be adjusted to a nicety.

1938 Honey 36-Inch Class Radio Control Yacht (#16) (Zone 7). Pete Peterson Designer/Builder; Based on 1930s Model Designs. Scratch-Built 2001 with Planked Hull and Custom Brass Fittings. Owner: June Pendino

1940s UK Fisher-Corby Self-Tacking M Class Free Sailing Vane Steering Gear (Case 6). A.J. Fisher-H.K. Corby Design; Scratch-Built 1955 by H.K. Corby. Sophisticated Upgrade of Simple 1940s Fisher Vane. Display Board Crafted by Graham Reeves, UK. Owner: Graham Reeves

Vintage M Class Wooden Half-Hulls Collection (Facing Zone 5). Eight Carved Bread & Butter Hulls of Notable M 50-800 Racing Designs. Collection Depicts First Forty Years of M 50-800 Design Development. Researched/ Crafted 1995 by Earl Boebert, US VMYG Historian. Owner: US VMYG

1937 Little Star *40-Inch Gas Tetherline Race Boat (#52, Case 4). Model Craftsman Magazine* Little Star *Design Plans. Harry Hastings, NY Builder; Early Plywood Hull. Homemade One-Cylinder Engine. Owner: Kent Lund*

1937 Comet *40-Inch Gas Tetherline Race Boat - Pond (#53, Case 2). Model Craftsman Magazine* Little Star *Plans. Gaza Bacsani Builder; Wood Hull. One-Cylinder Engine. Owner: Kent Lund*

1939 Tetherboat "Twin" Motor (#54, Case 4). Bob Lemp Detroit Builder. Rare Two-Cylinder, Water-Cooled Engine. Owner: Kent Lund

1940s B66 *41-Inch Gas Tetherline Race Boat - Pond (#55, Case 2). Ray Seavey Designer/Builder; Class B Model. Homemade Boat and 20CC Engine. Owner: Kent Lund*

The Eclipse of Free Sailing and the Rise of Radio Control

1947 Fluffy A Class Radio Control 80-Inch Yacht (#29, Zone 5). Bill Priest 1939 "Highlander" Design; Scratch-Built 1947 with Planked Hull. Builder/Owner: Frank Dunnebacke Jr.

1950s UK Jones Self-Tacking M Class Free Sailing Vane Steering Gear. Ken Jones Designer; Scratch-Built 1960s by Ken Jones. Display Board Crafted by Graham Reeves, UK. Owner: Graham Reeves

1946 Grandpappy 42-Inch Gas Tether Boat (#56, Case 1). Mr. Vick Builder; Wood Hull. Homemade One-Cylinder, Water-Cooled Engine and Battery. Owner: Kent Lund

1949 #39 34-Inch Gas Tetherline Race Boat - Pond (#57, Case 2). Herman Kaufman Design; 64 MPH Top Speed. Commercial "Hornet" Engine. Owner: Kent Lund

Modern Model Yachting

1970s Epic M Class Radio Control 50-Inch Yacht (#34, Zone 6). Tom Protheroe Double-Ended M Design. Scratch-Built 1977 from Protheroe Fiberglass Hull. Builder/Owner: John Garbarino

1980s Soling One-Meter Class Radio Control 39-Inch Yacht (#31). Built 1990s with Victor Model Products Molded Hull. Restored by Greg Vasileff in 2004 Owner: Jim Linville

The Soling One Meter is the most popular class in the AMYA. It is based on an inexpensive kit from Victor Model Products that can be purchased in any form from "almost ready to float" to one requiring full assembly of hull and rig. The AMYA class dates to

1972, when Jack Gregory, then Commodore of the Minuteman Model Yacht Club, searched for an inexpensive one-design boat for club events. The Victor kit was brought to his attention at a regatta and he quickly moved to both establish the class and establish a relationship with Victor Model Products to coordinate changes in the rules with changes in the kits. The result has been an almost perfect beginners one-design class: inexpensive, easy to sail, and with boats available to match the building skill of the interested skipper.

1998 US One Meter Class Radio Control 39-Inch Yacht (#47, Zone 8) Minuteman Mistress 1998 Design by Hal Robinson and Jim Linville. Built 2000 with Carbon Fiber Hull and Modern High-Tech Components. Builder/ Owner: Rich Reynolds

2000s Unfinished Minuteman Mistress US One Meter Class Planked Hull (#48, Zone 8). Balsa Strip-Plank Building Board Method for West System Finish. Builder/ Owner: Jim Linville

The U.S. One Meter is a developmental class boat. It is 39.3 inches long with 600 sq. inches of measured sail area. Materials are made optional to make it easy for manufacturers to make boats for the class. Hulls are designed to sail well in all weather conditions. The intent of the Class specifications are that anyone with a very basic knowledge of building could gain entry to the hobby with a minimum of expense.

The resulting boats are lightweight, very fast, and responsive to the controls. Due to its size and quick disassembly it is easily transported to the pond. The nonrestrictive nature of the Class rules encourages new designs and experimentation. It is a relatively inexpensive class for the beginning skipper. The yacht can be self-designed, built from plans, a purchased kit, or a complete yacht may be purchased from one of several suppliers. To help the new or experienced skipper build his own boat, several plans and a construction guide is available on the Internet by following the link on ww.amya.org

Modern Model Yacht Building Components Collection (Zone 8). 1990s High-Tech Components Using Composite Materials
- Carbon Fiber and Kevlar Hulls
- Carbon Fiber Masts/Booms, Beams, Rudders and Keel Fins
- Lightweight Mylar Sail Material
US One-Meter Plug for Molding Carbon Fiber Hull Modern Model Yacht Radio Control Steering, Sail and Sheeting Controls, Commercial Two-Function Radio Transmitter with Stick Controls, Commercial Radio Receiver, Sail Winch, Servos and Battery Pack. Owner: Jim Linville

International Racing

1930s Bostonia VII *A Class Radio Control 84-Inch Yacht (#18, Zone 7). John Black Design. Scratch-Built 1999 with Planked Hull. Builder/Owner: Fred Abbe*

Model Yachting in Education

1928 "Detroit 30" Radio Control 30-Inch Yacht (#40, Zone 8). Detroit School System Model Building Design for 75 Years. Scratch-Built 2001 with Carved Hull. Builder/ Owner: Alan Suydam

1940s Unfinished Broom IV M Class Carved Hull (#45, Zone 8). Buttocks Lift Method by Ben Martin. Owner: US VMYG.
1940s Unfinished Broom IV M Class Planked Hull (#46, Zone 8). Plank-on-Frame Building Board Method by Al Hubbard. Owner: US VMYG

John Selmer-Larson was an architect and model yachtsman in Marblehead MA, and designed several M Class yachts, all of which he called *Broom*. The two hulls here illustrate the two traditional ways of constructing a hull. The carved hull is laid up "bread and butter" style with vertical "lifts," or layers. This approach is preferred by experienced builders as it greatly simplifies the problem of achieving symmetry. The plank on steamed frame method duplicates that of traditional small boat construction.

Naskeag M Class Radio Control 50-Inch Yacht (#44, Zone 8). Thom McLaughlin's Hybrid Houk and Ballantyne Vintage M Design. Scratch-Built Planked Hull. Builder/Owner: Art Hart

Today's ultimate model yacht building courses maybe the six-day classes taught at the WoodenBoat School in Maine each summer. These programs have been ongoing since the 1990s, with this exquisitely crafted radio control model from one of these classes. The *Naskeag* M Class yacht was designed by Thom McLaughlin, who teaches the plank on frame course, in 2001. It is derived from two designs of the late 1940's: *Rip Tide*, by *Ted Houk*, and *Arrow*, by Ains Ballantyne.

Al Hart built the hull in Thom's class, and then finished the model at home.

Notes

(Left) 1930s (Est.) "Christchurch Four Foot Six" NZ Class Free Sailing 54-Inch Yacht (#19, Zone 7). New Zealand Design with Full-Battened Mainsail and Braine Steering. Scratch-Built with Planked Hull from Native NZ Wood. Restored by Christchurch MYC Members in 2004. Owner: Min Sarginson

(Right) 1933 Catamaran Free Sailing 56-Inch Marconi Yacht. (#14, Zone 4). Robert Paterson Designer/Builder; Herreshoff Amarlyiss *Design Influence. Scratch-Built Planked Hull with Centerboard and Braine Steering. Unusual Shock-Absorbing Truss System for Hulls. Restorers: T.J. Perrotti and Rob Wadleigh 1988-1990. Owner: T.J. Perrotti*

the solid, basic steering with weighted rudders and gaff rigs and topsails. The English design *Prospero* seems to have been very influential, leading the birth of the local Four Foot Six class that became the predominant class on the lake from the early 1900's until the late 1950's. The boats were usually built plank on frame with copper nails clenched over and the seams laid up with putty. The maximum beam was 18 inches, ballast and sail area was unrestricted. Early designs were beamy, full bowed ("cod fish types") and later boats appeared at 16 inches beam and less all up weight. Steering control evolved over the years to a two sheet system, one for beating with the rudder pinned into the centre of a quadrant, and the other sheet connected by lines to the unpinned tiller for running. A rubber spring guy could also put the boat about. It was essential to establish good balance to get these boats to go to where they were directed. This is still the essence of any sail boat - championship boats will sail straight, "hands off," at optimum speed.

Rigs for these boats evolved from large spreads of canvas on gaff rigs to fully battened, large roached, Bermudian rigs. Sail materials were limited to various grades of cotton from calico, bedsheets, to closely woven Egyptian cotton. Full length battens gave the sail some form of aerodynamic shape but in general the lack of science in this department held back many potential designs.

Races were on handicap, six lengths of the lake (1 mile) between set flags or buoys with limitations on the number of touches. A dinghy was in attendance to clear fouled boats as required. All racing was dutifully reported to the two Christchurch papers by the racing

secretary and appeared each Monday.

The Four Foot Six became the icon of model yachting in Christchurch.

The arrival of the Marblehead design (via the UK) and the advent of fibreglass technology saw a resurgence of the Club in the 1960's. These Marbleheads were vane or Braine gear controlled, sailed in pairs on a round robin basis.

In turn the arrival of radio control saw an evolution in design with the Marblehead class and the adoption of other classes specifically designed for RC control. The club has International One Meters, EC 12, 10 r and the most numerous J Class. This is a 48 inch replica of he J Class *Ranger* and is the most popular class sailed on the lake, well suited to our often weedy and low water lake levels.

M Class Cheerio I

In 1939 John Black published his classic *Yachting with Models*, which described the construction of his *Cheerio* M Class designs. Black was an industrial arts teacher in the Boston area. He was an avid yachtsman but his wife did not like to sail and he turned his love of sailing to model yachting, where he was an intense competitor both nationally and internationally. The *Cheerio I* design was the only pre-World War II international M Class champion, an honor Black won when model yachting was a demonstration sport at the 1936 Olympics.

This boat is typical of those sailed by members of the U.S. Vintage Model Yacht Group, in that it is a replica of a pre-1970 free sailing boat with a fiberglass hull for ease of maintenance and

1936 Cheerio I M Class Olympic Radio-Control Radio Control Yacht (#E-1, Entryway). John Black Design. Scratch-Built 2000 from Fiberglass Hull. Builder/Owner: Art Hart

1941 Humptulips M Class Free Sailing 50-Inch Yacht (#28, Zone 5). Scratch-Built by Robert Matheson. Owner: Paul Marlow

1937 Betty *36-Inch Gas Tetherline Speedboat (#51, Case 1). George Tanner, N.A., Designer; Bob Adams, Detroit Builder; Solid Sugar Pine Block. Homemade Motor with Unique Outdrive Design. Owner: Kent Lund*

radio control to enable to be sailed on ponds where access to all sides of the pond is not possible or convenient.

M Class Humptulips

Humptulips was designed by Ted Houk, and was the first boat to sport the "seal flipper" keel. It also has an early sliding rig and a simple vane gear without the self-tacking capability. The boat is constructed using the Houk/Pocock cold molded technique explained previously. The sails are made from vinyl kitchen tablecloth material.

Tether Powerboat Betty

Tethered powerboat evolution also continued during this era, with at least one national magazine running articles on boat and power plant design and construction.

The Eclipse of Free Sailing and the Rise of Radio Control (1945 - 1970)

The end of the war led to a burst of enthusiasm and establishment of a monthly magazine devoted to the sport and much optimism about the future. Unfortunately, the optimism was misplaced and the era was marked by a steady decline in participation.

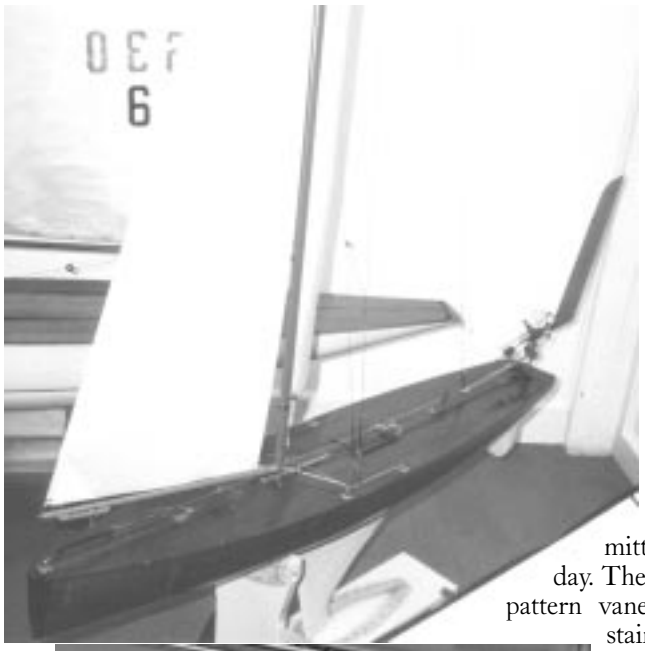
There were several factors that probably contributed to this. The "round robin" system of competing, in which each entrant sailed against every other, meant that there was a limit to the number of entrants a particular pond could support, and some established skippers grumbled about new skippers "cluttering" their events. This was complicated by the very nature of free sailing; while a novice radio skipper can, with a little care, sail in an event without causing a rash of fouls, this is much more difficult for the novice free sail skipper to do.

Competitive boats were, for their day, almost as dauntingly high tech as the M class is now. Fittings for a Braine boat are inexpensive, and if not purchased, can be made from brass using simple hand tools and soft solder. It is very difficult to build a satisfactory self-tacking vane without a drill press, and reliable sliding rigs require silver soldering, and prudent builders used stainless steel. The most easily obtained commercial vane had known problems, and other vanes were only available from individuals such Gus Lassel, limiting the supply.

The "winner take all" system of scoring was discouraging in that the scores it generated did not reflect the true differences between competitors. Someone who lost a heat by six inches received the same score as someone whose boat was so hopelessly trimmed that it turned around and went the other way: zero.

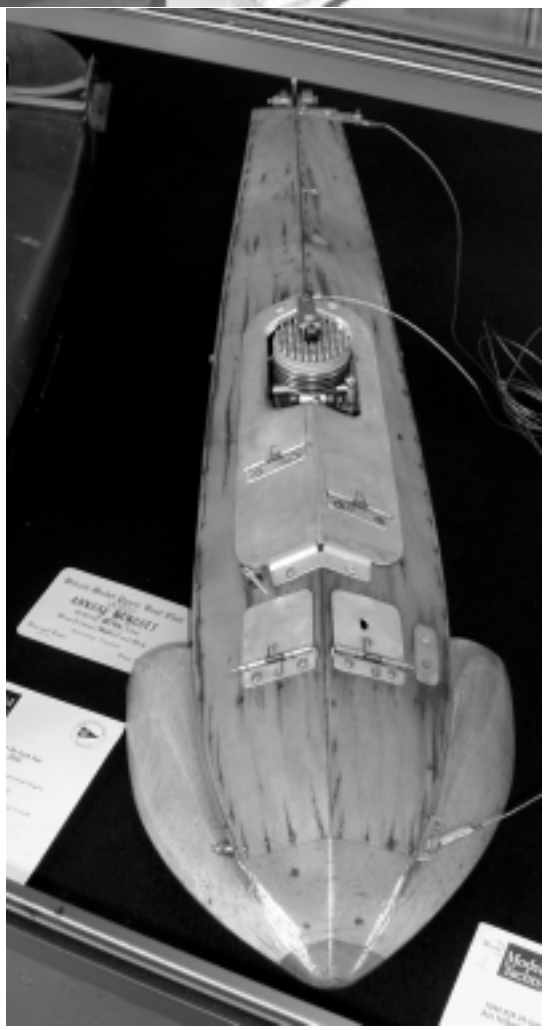
Knowledge of local conditions, important as it is in radio racing, is crucial in free sailing, where "how the wind blows" determines not only how fast your boat goes, but also the course it takes. As the various venues grew older they became more surrounded by trees and buildings and the winds became shiftier and more difficult for outsiders to gauge. The result was a decline in inter-club sailing in which each locale drew inward to itself and loyalty to the sport as a whole was diluted.

The situation was worsened when an attempt to change the scoring rules in 1949 erupted into a full-blown political storm. This caused more people to retire from the sport or turn to engine-oriented hobbies such as control-line model airplanes and tether model cars and speedboats, whose explosive growth was fueled by cheap equipment made in the multitude of small foundries and machine shops that sprung up to support the aircraft industry during World War II.



By the late 1950s the once-national sport had evolved into separate pockets of activity centered on individual clubs. One by one, free sailing clubs went out of existence or converted to radio. The sole exception was San Francisco, whose members still design and sail free sailing boats. Free sailing also continues as an active sport in the United Kingdom.

It is both sad and puzzling to read the record of the model yachting's decline while at the same time realizing that school systems in San Diego, Long Beach, and Detroit were producing many hundreds of boats, and potential skippers, every year. Even worse, from the point of view of the traditionalists, there arose the ultimate "gadget:" radio control. The existing sanctioning organization somewhat grudgingly established a DX class to cover radio racing, but their lack of enthusiasm for radio led to the formation of the upstart American Model Yachting Association, which eventually was granted the authority to be the sanctioning body for model yachting in the United States by the international sailing organization.



M Class #75

By the 1950's designers understood the importance of reducing wetted surface and skippers were becoming more adept at adjusting vane gears. These trends are shown in this model, where the fin and bulb are reduced to the greatest degree permitted by the materials of the day. The sliding rig and the Lassel-pattern vane gear are now made of stainless steel. In all, this boat exemplifies the peak of M Class development during the free sailing era in the United States.

100 MPH Broken at Last

Tether powerboat evolution also continued during this time, and the 100 mph barrier was finally crossed in 1961.

(Above) 1957 "#75" M Class Free Sailing 50-Inch Yacht (#30, Zone 5). George Bersuch Designer/Builder. Scratch-Built Planked Hull. Restored by Charles Blume 1998 for Mill Pond MYC Centennial. Owner: John Snow

(Left) 1961 Record-Setting 36-Inch Gas Tetherline Race Boat (#58, Case 2). Ed Kalfus Builder Including Homemade Engine. First Tetherboat to Break 100 MPH. Kalfus Raced Tethered Models from 1935 to 1968. Owner: Kent Lund

Modern Model Yachting
(1970-2004)

The modern era is marked by the domination of radio control. Radio control of model sailboats was attempted on an experimental basis in the early 1930's, and given a boost immediately after World War II by the availability of war surplus components. When commercial radio control components became available, model yachting was able to take advantage of the rapid evolution of consumer electronics, in which everything gets smaller, cheaper, and more sophisticated every year. There are currently over twenty classes of radio control boats being actively raced in the United States, from the simple and inexpensive Lasers to the large and sophisticated J Class.

The Star 45 Class

Driven by a long provided supply of heavy wooden hull kits from Dumas Mfg., it was only to be expected that a Radio Star 45 Class would eventually be established within the American Model Yachting Association. The first Star 45 registered with AMYA in the winter of 1970-71.

1970 AMYA "Flim Flam" Star 45 Class Radio Control 45-Inch Yacht (#22, Zone 4). Owner: Mystic Seaport Museum, CT

Early efforts at organizing the class were centered in the Mid-Atlantic area with Francis Smith appointed as Class Secretary by AMYA Secretary Ben Hogensen. Though there was interest and boat registrations began to come in, early class organizers were extremely relaxed and the class population fluctuated between 15 and 33 boats, but without an announcement of official status or any National Championship events being held. In the Winter of 1974, Rod Carr took the helm and commenced an official competition schedule which continues to this day. The Class held its first National Championship in 1975 in Washington, D.C. That event and the two subsequent ones were all won by the Class Secretary.

The Dumas kit used the 1911 William Garden Star design as a basis, but added freeboard to the hull to make up for the heavy two motored sail control unit used in the late 1960's. Ultimately, the class allowed proper scale freeboard hulls which were lighter and gave an improved performance.

As with the prototype Star, the Class gracefully made the transition to modern materials. Multi-part wooden masts gave way to aluminum, mylar sails were introduced, and fiberglass hulls became available. The aft hung, unbalanced scale rudder was replaced by a balanced spade rudder for greater agility.

The Star 45 is one of the few one-design classes in which the interested skipper can completely construct an entire wooden boat from class provided plans or outfit a fiberglass hull from one of several manufacturers.

The Soling 50 Larita

The prototype for the Soling 50 is the 27 foot Soling keelboat designed by Herman Linge of Oslo, Norway. In 1970, the owners of Vortex Model Engineering saw a Soling in Santa Barbara harbor and designed a scale model to the M Class rules. This was so successful that Soling 50's took the first three places in the M Class championships in 1972, and incidentally

Sail Number 23: 1990s Skinny *M Class Radio Control 50-Inch Yacht (#36, Zone 6). Swede Johnson M Design with Stayless Swing Rig. Scratch-Built 2002 with Johnson Fiberglass Hull. Builder/Owner: Ben Martin; 391: 1980s* Archer *M Class Radio Control 50-Inch Yacht (#35, Zone 6). Jon Elmaleh M Design with Conventional Sail Rig. Scratch-Built from Elmaleh Carbon Fiber Hull. Owner: Greg Vasileff; 454: 1973* Larita *Soling 50 Class Radio Control Yacht (#33, Zone 6). John & Laurie Converse One-Design from Full-Scale Soling . Scratch-Built from Vortex Model Engineering Fiberglass Hull. Owner: Art Hart; 870:1973* Tricks End *Santa Barbara Class Radio Control 70-Inch Yacht (#37, Zone 6). Tom Protheroe One-Design Based on 1960s Era Yacht Designs. Scratch-Built with Protheroe Fiberglass Hull/Deck; Military Drone Winch. Builder/Owner: John Garbarino; 732: 1995 RC Laser Class Radio Control 42-Inch Yacht (#32, Zone 6). One-Design by Bruce Kirby and Jon Elmaleh from Full-Size Laser Yacht. Out There Technologies LLC Polyethylene Kit. Owner: June Pendino*

spurred the development of M Class boats away from scale-like forms to the pure, high-tech racing machines of today.

By 1975, Soling 50's were not longer competitive in the M Class, but with almost 700 boats sold, they were the natural basis for a one-design class. Herman Linge gave his blessing to the class by permitting the use of the full size Soling class insignia.

Vortex Model Engineering ceased making the kits in the 1980's, and the class suffered a decline until 1998, when a new Class Secretary rekindled interest and older models were resurrected and refitted with new electronics and sails. The class is now active and strong.

Santa Barbara Tricks End

The Santa Barbara one design class is a true classic, being actively sailed forty years after it was first designed and produced. The design dates to 1964, when fleet races around the marks by radio control was a radical innovation and controls were made from modified war surplus equipment. The boat was designed by Tom Protheroe and molded hulls and decks were provided by him and Vortex Engineering until 1983. The lack of construction parts caused a decline in the class until 1993, when Hartman Fibreglass began producing class-conformant hulls. The class is now active and growing, as people are attracted to this designs timeless good looks and excellent sailing qualities in a wide range of wind conditions.

M Class Skinny *and* Archer

These two boats, plus the earlier *Epic* (not shown) illustrate the continued evolution of the M Class from 1970 to the present. The use of radio control permits the deep keels for stability. A free sailing boat can go anywhere on a pond, and it's keel depth therefore has a practical upper limit of the shallowest water in the pond – for most locations, this is fifteen to eighteen inches. Radio boats can be held to the deepest areas, a fact designers were quick to take advantage of, along with advances in materials. These models show the evolution from fiberglass over wood to carbon fiber. Sails have evolved from dacron to mylar, and the advent of inexpensive carbon fiber rods has permitted the use of stayless swing rigs, in which the main and jib rotate as a unit by means of a pivoted mainmast. This permits the entire sail area to be presented to the wind on runs downwind.

Laser

The RC Laser was designed jointly by Bruce Kirby, designer of the full size Laser, and Jon Elmaleh, noted model yacht designer. The boat was intended as an inexpensive, rugged, and easy to sail beginners model. The first RC Laser was sold in 1995, and since then over 3500 models have been sold. The boat knocks down into a convenient package for transport and has proven so rugged that it is used in rental fleets at New York's Central Park and other venues in the U.S. and Canada. The class is a very tightly controlled one design class which leads to extremely close racing at all levels of skill. It is the perfect boat for someone wants just to sail without time spent in construction and maintenance.

International Racing

In 1921, W.J. Daniels of Great Britain issued a challenge for an international race between the United States and Great Britain. The publication of the challenge letter galvanized model yachtsmen in the United States and a national organization was quickly formed. The race was held over until 1922, at which time Daniels, who was wholly unfamiliar with skiff sailing, was badly beaten on Long Island Sound.

Between 1922 and 1926, Yachting Monthly magazine of Great Britain established a set of rules which eventually became the International A Class, with racing beginning in 1924. Beginning in 1926, a series of races was run on a yearly basis between the (generally) British defender and challengers from a variety of countries, including the United States. In a way, the Yachting Monthly series was a kind of America's Cup in reverse, in which U.S. challengers would show up in England and lose year after year.

. *1926 UK MYA Yachting Monthly Cup Trophy Model Yachting's World Championship Trophy 1920s to 1950s Equivalent to the America's Cup. Owner: United Kingdom Model Yachting Association.*

In 1948 Bill Bithell of the United States finally won the International A Class race with Great Britain and the U.S. successfully defended the trophy in 1949, 1951 and again against Canada in 1953. In 1954 the MYRAA voluntarily returned the International Trophy to Great Britain.

International free sailing competition has been revived between the United Kingdom and the United States under the initiative of the San Francisco Model Yacht Club. The first races for M Class boats were held at Round Pond and Fleetwood, England in 2001. After these races it was decided to adopt a smaller and more easily transported class and in 2003 the races were held under the U.K. 36 inch Restricted class rules. An example of a 36R boat, *Midge*, can be seen on page 9.

The 2003 Challenge had eleven UK 36Rs racing in San Francisco. For more details on the biennial UK-US Challenge Free-Sail Regatta and the 36R Class in general, contact Jeff Stobbe of the San Francisco MYC at:
cjstobbe@charter.net
or Graham Reeves of the UK MYA at: ga.reeves@virgin.net

Model Yachting in Education

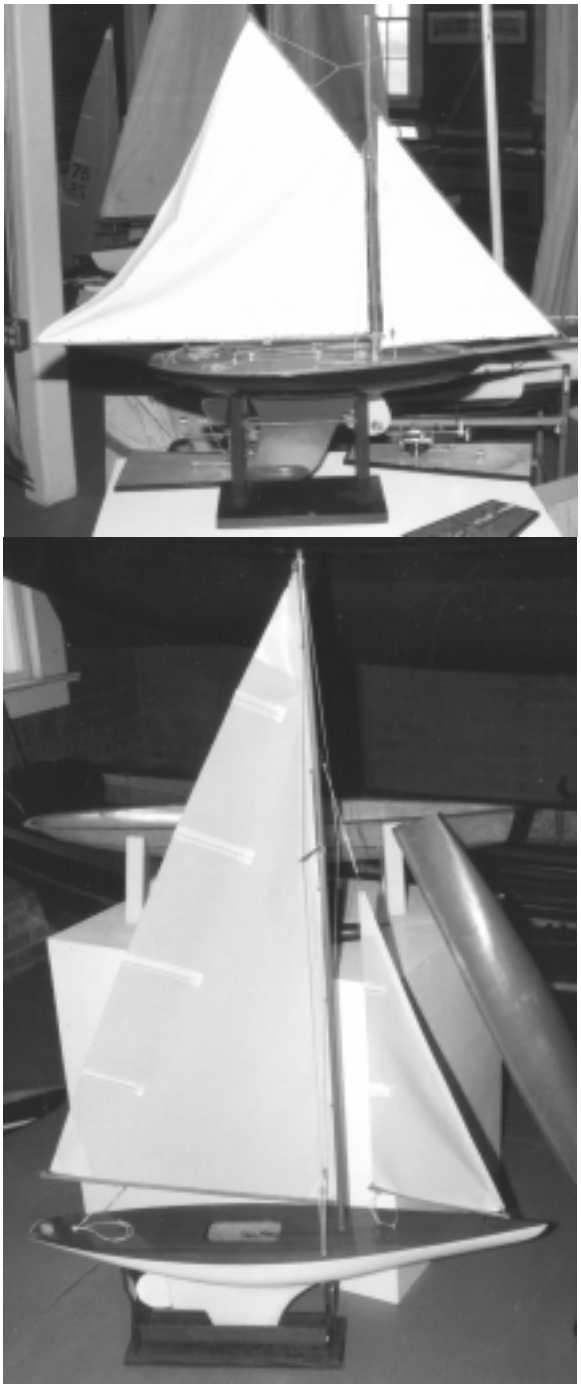
A significant movement in the 1920's and on was sparked by World War I. The WWI draft was the first time that a census and examination was made of the bulk of the male population in the country, and policy makers were pretty dismayed at what they found. The result was a wide range of educational and social reforms. In particular, the U.S. war plan revolved around a massive increase in aircraft production that could not be sustained by craftsmen trained on the apprentice system. As a consequence, a formal system of training in industrial arts was established, and a popular project was the construction and sailing of a model yacht: it was safe, enjoyable, and required a range of skills from metalworking through woodworking to sewing sails. Thousands of boats, to various designs were made, and many survive to this day; it is illuminating (and rather dismaying) to look at some of these great little yachts and realize that they were considered as something the average 9th grader should be capable of building. Many famous designers, such as John Black and Thomas Darling, were industrial arts teachers. A major program was begun in the Detroit area and several of the schools build boats, and sail a yearly regatta, to this day.

Other, private initiatives have come about, using model yacht construction to teach young people the virtues of patience and to give them confidence in their ability to construct complex systems. The Center for Wooden Boats in Seattle runs a youth program in conjunction with the public schools and based on a model used for this purpose in the 1920's. A private project aimed at church and other nonprofit groups, uses a fiberglass replica of a 1930's M Class boat to the same end.

Pirate

In 1927, Ted Geary designed a 39-inch model based on the lines of his champion R Class sloop *Pirate*. His goal was to interest youths in woodworking and sailing through models. These free-sailed *Pirate* models were then built in great numbers by school-age youth in Seattle and Los Angeles public schools. The interest in these programs is noted by the size of the 1929 *Pirate* regatta organized by Fox Case of the *Los Angeles Evening Herald*. This race attracted 300 young skippers with their scratch-built *Pirate* models to Westlake (now MacArthur) Park. Geary personally devoted hundreds of hours of his own time to teaching youngsters about sailing, designing and boat building through these models.

In 1999, as a joint venture, the Center for Wooden Boats (CWB) and Seattle Public Schools began a revival of this 75 year-old program with 15 middle-school students. This was then facilitated by the Center's purchase of the original *Pirate* sloop for restora-



1925 Montclair NJ School Program Free Sailing 32-Inch Gaff Yacht (#11, Zone 3). Design from Cavileer 1923 Book Model Boat Building for Boys. Scratch-Built with Carved Hull from Solid Wood Block. Full Restoration in 1999. Restorer/Owner: Art Hart.

1927 Pirate *Free Sailing 39-Inch Yacht (#38, Zone 8). Ted Geary Design from his Full-Scale R Class Yacht. Builders/Owners: Joe Cable & Barbara Lewis.*

tion, with the *Pirate* model plans included. The modern-day *Pirate* program has flourished, with model building courses starting each October and student scratch-built models launched each May. For most of these students, the completed *Pirate* model represents the largest and longest project they have ever undertaken.

This program also stages a regatta every June, where students engage in a series of races for the coveted "Pirate Cup". The 2003 regatta had 19 boats competing for this perpetual trophy donated by Norman Blanchard. Two deserving model builders are awarded summer internships at these regattas to work at the CWB. Also, any student that builds a *Pirate* model remains eligible to race for the Pirate Cup until they graduate from high school. Finally, the CWB is grateful to the Enersen Foundation for their grant in underwriting the construction of the *Pirate* models and the development of a manual for future Pirate model builders. Once the full-size 1920s *Pirate* R Class sloop is restored and sailing, future plans for the Pirate model program include promotion of this class to other schools and its use for yacht club junior programs.

More details on this model building program for youths are available on the *Pirate* Web site:
www.R-boat.org
Scott Rohrer can also be contacted at 206-281-8144 and
jsrohrer@marinesinsurance.com

(Above) 1928 "Detroit 24" Free Sailing 24-Inch Yacht (#39, Zone 8). Detroit School System Model Building Design for 75 Years. Scratch-Built 2003 with Carved Hull and Braine Steering. Builder/Owner: Alan Suydam. Below: The Model Skipper's Dream Shop, with Boats from Seventy Years of History

About the Museum of Yachting

The Museum of Yachting is a private not-for-profit (501c3) organization dedicated to preserving the culture of yachting by fostering education and enjoyment of its history through the presentation of vessels, artifacts, literature, events and regattas.

The Museum explores the many ways in which yachting demonstrates human achievement in the arts, technology and design. Our educational programs offer opportunities for sailors, non-sailors, adults and children alike.

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About the U.S. Vintage Model Yacht Group

The U.S. Vintage Model Yacht Group is a special interest group of the American Model Yachting Association. It is dedicated to the study, preservation, and reconstruction of both radio control and free sailing model yachts designed before 1970. It also supports Traditional Watercraft modelling. In the latter capacity it oversees an active Schooner group, assists with AMYA J Class events, and is the custodian of the International A Class in the United States.

The Group publishes a well-regarded Newsletter three times a year, offers two books and a videotape on model yacht construction, and provides full-size plans for Vintage yachts. It also holds a National Regatta once a year. Inquiries can be directed to John Snow:

Phone: 781/631 4203

Mailing Address: 78 East Orchard St., Marblehead MA 01945

E-mail to Earl Boebert: boebert@swcp.com

And on the Web at www.swcp.com/usvmyg

Left to Right on Floor: Nat (Sail Number M 1), Bostonia VIII, Honey (Hanging), Intrepid. Foreground: Chico II (Sail Number 75), Cheerio I (Sail Number 3308). Back Corner: Christchurch Four Foot Six.

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T.J. Perotti: 6, 23 (lower).

On Opening Day, the Museum was graced by a visit from Bill Bithell, the first American to win the Yachting Monthly Cup, the America's Cup of Model Yachting. Bill is shown here with the Cup , with Ranger II*, a replica of his winning boat, and Officers of the U.S. Vintage Model Yacht Group. From Left to Right: Jim Dolan, Archivist, Earl Boebert, Historian, Bill Bithell, and John Snow, President.*