

The
Model Yacht



*Vintage
Boats*

Journal of the U.S. Vintage Model Yacht Group
Volume 21, Number Two

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The Model Yacht

Summer 2020

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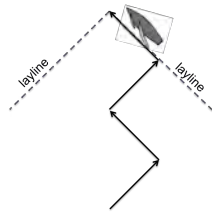
FDR adjusting the sails on one of his many pond boats. He taught his children to sail using pond boats.

Membership Renewals:

The annual membership fee will be due and should be renewed with the publication of the first newsletter of the calendar year. Please reference "Membership" on page 34 for the dues amounts. Please use the form that accompanies this issue of *The Model Yacht* to complete your membership renewal.

The Layline

By John Stoudt



*Definition: A **layline** is a straight line (or bearing) extending from the next mark to indicate the course a boat should be able to sail on the one tack in order to pass to the windward side of the mark.*
(vsk.wikia.com/wiki/Layline)

This issue of the journal has some very interesting articles about vintage boats. These include information on the Jacrim Seaworthy Boats, an Early Skipper (Bill Bithell), a Malay Jong, Rating Rules for Model Yachts, The Great Schooner Society, Stay at Home Sailing, a Self-Righting Catamaran Model, the Vintage Power Boat, and Gadgets and Gizmos: A Paint Stand. I think you will find them very informative.

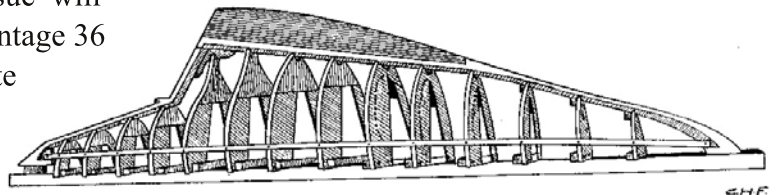
Future Issues and Articles

We are organizing future journals based on themes. Each issue, whenever possible, will feature some aspect of model yachting. This issue is Vintage Boats; our current planning is looking at designating the following issues to these themes:

- Volume 21, Number 3 – Restoration
- Volume 22, Number 1 – Construction Techniques
- Volume 22, Number 2 – Early Venues

The **Restoration** issue has articles planned on Finishing the Hatch Cover (final in the series), Model Yacht Restoration – Decision Making, Restoration of an A Boat, Sanding and Finishing, Gadgets and Gizmos – A Mobile Work Stand, Busman's Holiday (M boat restoration), Restoration: A Boat Without a Keel, and Get Your Boy One (for Yourself).

The **Construction** issue will feature Deriving a Vintage 36 Model from a Favorite Vintage Marblehead Design, Skeg and Rudder Installation,



Britannia – A Balancing Act, Gadgets and Gizmos – Sanding Fixtures, Building Odyssey, Vane Gears – Guying, Svea Project – Part 3, and The Cutter in Deal.

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The **Clubs and Venues** issue will take a look at other cities, their clubs, and the locations where model yachts were sailed. In the past we have covered Spreckles Lake, Conservatory Waters, and Redd's Pond but have not given much attention to other locations and clubs. Articles in this issue will feature Boston, Chicago, Seattle, Philadelphia, Bell Isle (Detroit), Mill Pond (Port Washington, Long Island), and Washington, DC.

In doing our research we have discovered that there is very little information available. Maybe we are looking in the wrong place. If you know something about or have information on an early venue or club, please send it along to us for review and possible inclusion in this upcoming issue.



Articles about early skippers will appear from time to time from Cliff Martin. I suspect we will hear about the likes of Ains Ballantyne, John Black, E. A. Bull, Roy Clough, W. J. Daniels, Ted Houk, Sr., and A. R. “Gus” Lassel, just to mention a few. So keep your eye out for information about our model yachting pioneers.

As always, other subjects will be covered as information comes available and we assemble each journal. If you have ideas for themes and articles for the journal we would be glad to hear from you. We are always looking for articles. Write something up and send it to me (jstoudt309@mail.com) and Jeff Beck (beck.jeff@gmail.com).

Vintage Power Model Yachts

I have been in touch with some individuals who have built and/or are collectors of model power yachts. There are some pretty amazing boats out there, some of them very early and mechanically amazing. We will from time to time have an article about these boats. I have asked Peter Kelley, who is an avid collector of these boats and is very knowledgeable, to be our model power boat coordinator. You can contact him directly at (pdkelley@sympatico.ca) if you have any questions or information you would like to share.



A Member Benefit

The US VMYG has digital copies of all back issues of our newsletter/journal available. If you are a member of the US VMYG, you can follow the directions on the website to acquire PDF copies for free. There is an index that will assist you in finding specific articles with information you have an interest in. Non-members will be able to purchase individual copies of back issues of the newsletter/journal using the same index.



A special thanks to Ken Young for completing the task started by Earl Boebert, of developing an index of articles in our newsletters/journals.

COVID-19

This pandemic has draped a pall on much of what we do today. The US VMYG is following the guidance provided by the AMYA and local governing bodies. We will monitor conditions constantly and will make decisions about events based on conditions and guidance.

Mini-Conference

Would you attend a mini-conference attached to the national regatta? This would be the day prior to racing and include a series of presentations on topics of interest to us. We would invite a knowledgeable vintage model yachtsman to deliver a one-hour talk about something related to what we do. This may not occur this year due to the circumstances, but it is in the planning stages. I would like to know if you would attend and if you have a topic you would like to present or have a topic you would like presented.

Regional Events

We have been discussing with the regional coordinators the importance of having regional events focusing on vintage model yachts. Planning was beginning but has been put aside at this time because of the public health emergency. But your regional coordinators would love to hear from you. Their contact information is in the front of this issue and on our website. Contact them with thoughts and ideas.

Jim Linville's Pickup and Delivery Service (tongue in cheek)

Jim drives all over the country to sail his boats – I mean all over the country. Often his friend Herb Dreher is in the van with him. You should see the back of his van when he is loaded down with boats and stuff. If the US VMYG has a pickup and or delivery to make we contact Jim. If you do not have a critical time frame Jim will make it work, visiting friends and his niece along the way. BTW his niece lives 2 miles from my house. Jim often stops with plans, magazines, boats and other things donated to the US VMYG. For this we are eternally grateful – Thank you Jim!



2020/2021 National Regatta Update

By John Stoudt

Nothing pains me more than to write this. The initial indications (before COVID-19) were telling us the turn out for this year's National Championship Regatta was going to be bigger than last year. Many factors and conversations have led to the decision to cancel this year's regatta out of concern for our ability to protect the individuals who would be attending the event. Although the venue has extraordinarily little walk up traffic, there were a lot of individuals present last year including skippers, spouses/significant others, race committee members, and spectators. Including a 101-year-old enthusiast who built his first Marblehead in the mid-1930s.

I have spoken with many individuals far and wide to come to this decision. Most have indicated they are leery of traveling and participating in such an event. Other factors that have contributed to this decision include:

- The ramped increase in COVID-19 on a nationwide basis, including in Pennsylvania.
- Pennsylvania is requiring quarantining of individuals who come from many different states into Pennsylvania.
- Other states are requiring their state residents to quarantine if they leave their state and return.
- Some individuals have controlled travel bans in their area.
- A concern that the retirement community adjacent to the lake on which the event will be held might lock down again if cases rise. This would place the lake off limits.
- Individuals have concern about using hotels and restaurants.
- We would have to curtail activities such as the picnic and banquet.
- It would be difficult to safely provide lunches, drinks etc. at the event.
- While we would have portable toilets at the event, they are some of the hardest places to keep clean under the circumstances.
- Medical experts who have been consulted recommend against it.

We have no way of knowing how conditions will change prior to our event in mid-October. The organizing and planning that goes into an event such as this takes time and work by the local committee. We cannot wait any longer to make this decision and be able to pull off a quality event.

Therefore, we have no choice but to postpone this year's National Championship Regatta until October 7-10, 2021 (tentative). It will be held at Tel Hai Camp and Retreat Center, 1101 Beaver Dam Road, Honey Brook, PA 19344.



Barnacle

An Unexpected Find – Have you been looking for a fine grain cork that can be used for bow bumpers?

Well, have we a suggestion for you – a cork yoga pillow block. These are made from a very tight grained cork, are approximately 3- by 6- by 9 in blocks, and relatively inexpensive at \$20.00 to \$25.00. An internet search will find them available from several sources.



Membership Highlights

Author Tom Alessi, Membership Secretary and Treasurer

Membership by Category

As of June 30, 2020, US VMYG has a total of 233 members. The includes approximately 60% regular memberships, 35% life memberships, and 5% complimentary memberships.

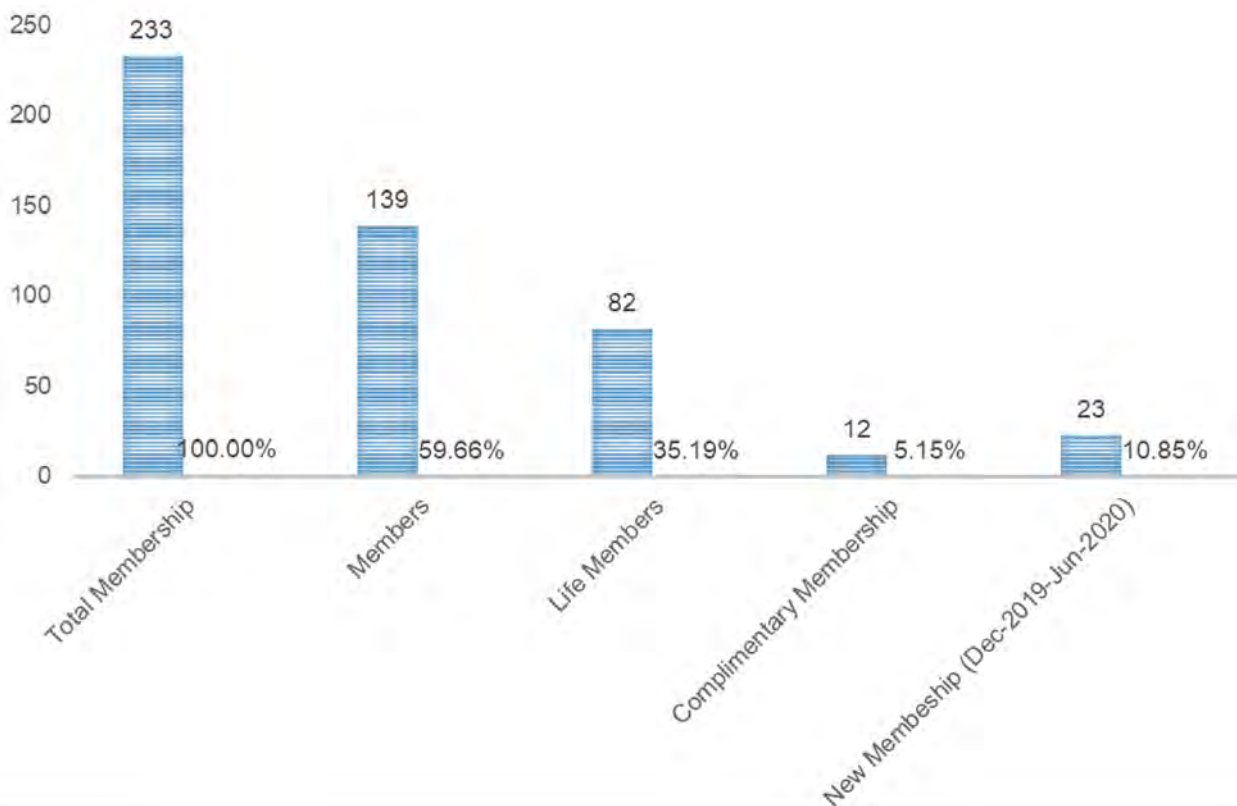
In the past 7 months we have increased our membership by nearly 11%.

Membership Journal Preference

The majority of US VMYG regular members prefer to receive the journal by email, and most life members prefer a hard copy. Whatever their preference, all members I have heard from have a positive opinion of the quality and content of the Journals issued over the past year and half.

Membership by Geographic Location

- Australia: 2
- Great Britain: 5
- Canada: 3
- US
 - Southwest: 25
 - Northwest: 17
 - South Central: 5
 - North Central: 26
 - Southeast: 25
 - Mid-Atlantic: 58
 - Northeast: 62
 - No Address Provided: 5



NOTE: Do not miss out on the next issue of *The Model Yacht* and other member benefits. There are individuals who have not renewed. Please do so at your earliest convenience. Thank you!

WANTED! WANTED! WANTED!

I am doing research for a book and exhibit on the Detroit Public Schools Model Yacht Program. For 75 years, students between 6th & 9th grades built 18', 24", 30", or 36" long sailboats to an A.J. Fisher or Sharpie design, in shop class. I want to buy, copy, or borrow photos, movies, awards, paper work, ribbons, articles in papers or magazines, parts, or boats in any condition. Anyone that wants to recount their experiences, would be most welcome! Any help or referrals are also greatly appreciated!



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I have 2 groups on Facebook:

 [DPS Sailboats & AJ Fisher](#)
and [Model Pond Yachts-
Detroit Public Schools & A.J. Fisher](#)

File: DPS-SailboatFlyer2X-4.ai/.jpg

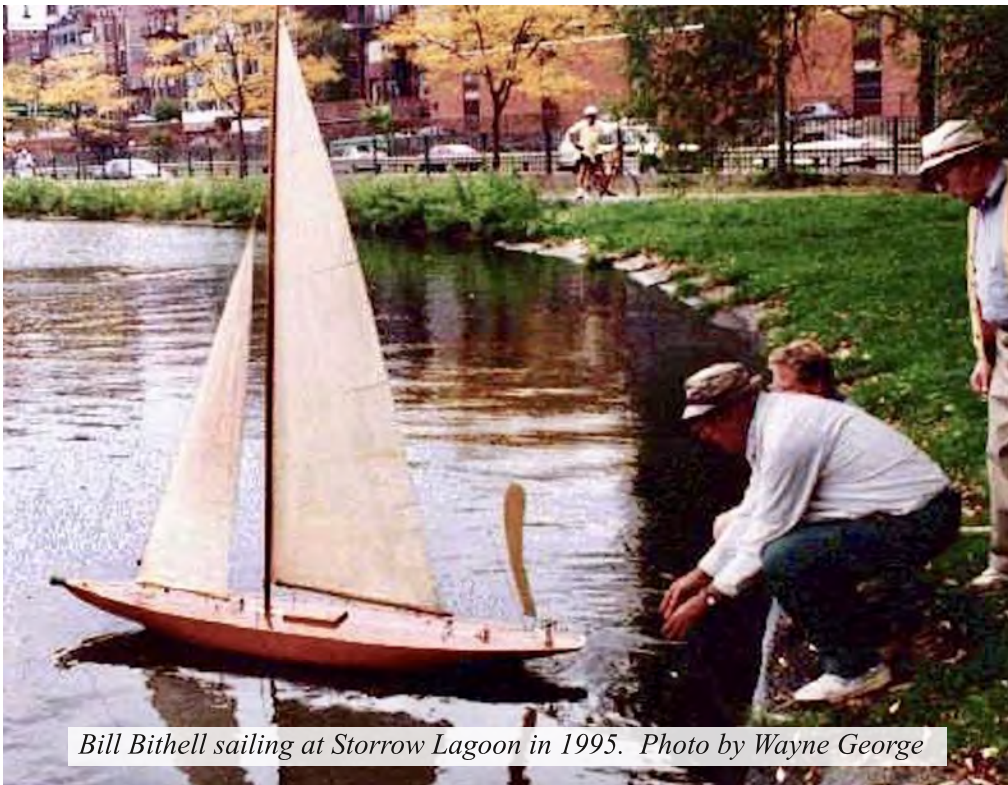
Early Pond Yacht Skippers: Part 2

William G. Bithell

Author Cliff Martin

Welcome back to the second part of a series about early pond yacht skippers. In this installment I have decided to write about an individual who lived and was well known in the northeastern part of the US and was also very well known internationally. That individual was Bill Bithell.

As is the case with many of the early skippers, detailed information about Bill Bithell's early life is somewhat hard to come by, and some of the available detail was not consistent from source to source. What we do know is that Bill attended the Massachusetts Institute of Technology (MIT) and graduated in 1932. He was known to be a member of the Boston Model Yacht Club,



Bill Bithell sailing at Storrow Lagoon in 1995. Photo by Wayne George

which sailed in Boston's Storrow Lagoon. Storrow Lagoon is almost directly across the Charles River from MIT and right next to where the Boston Esplanade and concert "Hatch Shell" are now found. If you have ever watched the 4th of July concert from Boston on television, you've seen the Hatch Shell.

In those days, Bill had a reputation as an excellent builder and a championship skipper. He found early success using H.E. Richardson's great "A" class model yacht design and ultimately that class became the most prevalent of the early yachts that Bill campaigned. {Editor's Note: We all know that a good design is a huge asset to a skipper, but to be a winner that design has to be built with care and precision, and then sailed very well.}

Bill competed successfully not only in the Boston area and around the US but also internationally, competing in championship regattas in England and Germany. He also had the honor of sailing at the 1936 Olympics, in Germany, where model yachting was being presented as a demonstration sport.

Charley Williamson wrote a very interesting article about Bill for the US VMYG, which you can find on the US VMYG website. It details Bill's trials and tribulations leading up to his winning the British Yachting Monthly Cup (1948–1949). Bill was sailing his A-Class *Ranger*, and until his win, the BYM Cup had been an elusive prize for US skippers.

In the early days of vane sailing, skippers needed helpers to either row the dinghies used to chase the yachts if they were sailed in a harbor or to help launch, retrieve, and manage the yachts if they were sailed on a pond. These helpers were often referred to as "mates".

Well known skippers of the time were very collegial and at different times Bill had some mates who were championship skippers in their own right: among others there were John Black, Fred Pigeon, and Ains Ballantyne. Bill also took his turn as helper and was John Black's mate when John sailed his Marblehead *Cheerio* to a win in 1936. Figure 2 shows *Ranger* and its vane rig.

Bill mentored many skippers in his day. He also made and sold excellent model yacht sails and model yacht fittings that were not available through any



Fig. 2. *Ranger* being measured

other source. John Snow, past President of the US VMYG, recounts that he got his first set of cloth sails from Bill. John remembers Bill Bithell well and works to continue his legacy as a role model and mentor.

Bill Bithell is remembered and memorialized with the Bill Bithell Cup regatta held every year at Redd's Pond in Marblehead, MA. John Snow is usually RD for that regatta. For those of you who are interested in sailing in the Bill Bithell Cup regatta, go to the Marblehead Model Yacht Club web page and check out the date.



Photo Steve Buczko

*Left to right: Jim Dolar, Earl Boebert, **Bill Bithell**, and John Snow
at the "World of Model Yachts" exhibit held in 2004 at the Museum of Yachting in Newport, RI.*

*In the foreground is the UK MYC Yachting Monthly Trophy
which was Model Yachting's World Championship Trophy from the 1920's to the 1950's.*

Behind it is a replica of Ranger II, the boat Bill sailed to win that trophy (1948-1949), a first for a U.S. skipper.

The replica is currently housed at MIT in the Hart Museum.

The exhibit was the largest collection of scale model yachts ever displayed together in the world.

A Little History & The Pond Boat Story

Author Bob Jones

A Brief History

Today “Pond Boat” and “Pond Yacht” are used to refer to any model or toy boat that looks like it could float. Pond boats have been made as both models and toys. There are Egyptian drawings more than 3,200 years old that show small boats with oars, paddles, and sails. Egyptian petroglyphs and drawings on pieces of pottery depicted boats of many types, and model boats have been found in the tombs of Pharaohs and Kings.

Early boat builders used models as plans, and by the time America was settled, half-hulls and scale models were used extensively for building ships. These boat builders and designers also spent some time making model boats for their children. I have owned examples of these: some with clockwork motors and some intricately built sailboats.

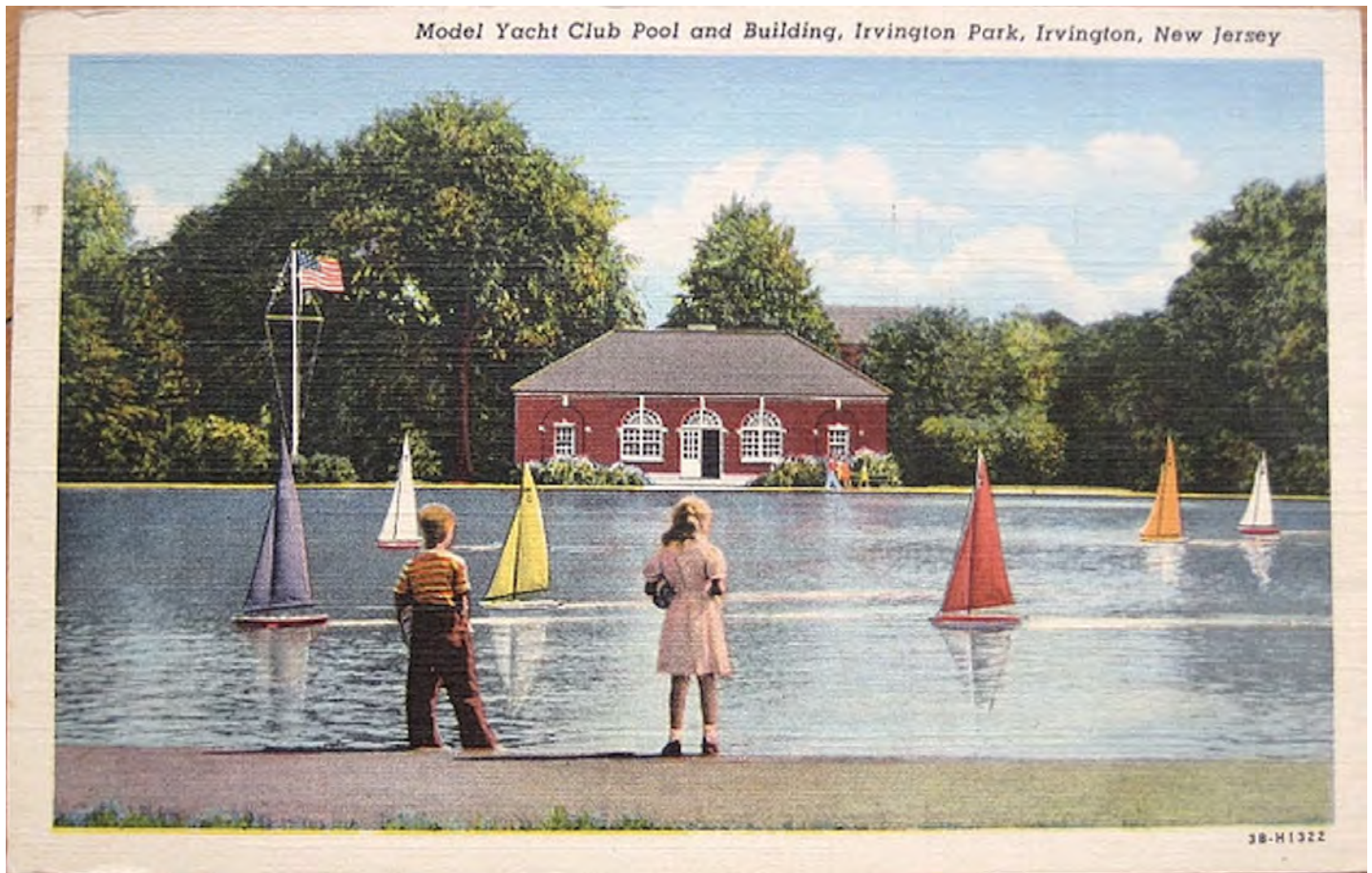
Sailing got a lot of press coverage starting in 1851 when the schooner America easily won the “Hundred Guinea Cup” on “The Queen’s Course” around the Isle of Wight. In that same year, *The Illustrated London News* documents a model yacht in full sail on the Serpentine in Hyde Park. A coincidence? Probably not! This event became known as the America’s Cup and the trophy was held by the United States until 1983. Late in the 19th century the Model Racing Union of North America was formed. The boats were complicated



Early sailing in Central Park, New York City

and heavily canvassed, with a 6-ft boat carrying 2200 of sail. They were essentially miniature versions of full size boats. Most of this early model yacht sailing was based around New York City.

We have examples of complete models, half hulls, and early photographs from these early days of model yacht sailing. They were sailed by men, women, and boys on ponds, lakes, parks, rivers, and harbors all around the world. Crowds of people would gather in New York’s Central Park to watch huge gaff-rigged model boats at the turn of the century.



Prior to World War I there were American handmade boats of all kinds: sail, steam, and windup. Windup boats had clockwork motors; some boats had complete steam boilers with steam engines, and many more were sailboats. Sailing clubs started to form, and classes started to develop. The Class “A” models were large boats, up to 85 in long, with masts 9 ft high. These boats were scale models of full sized boats and were built after the turn of the century. Most of these were gaff-rigged as was the configuration popular in that era.

Many American manufacturing companies got into the same business and began making similar American toys. These are highly collectable today and very costly. Some of these American companies were Bliss (1832), Schoenhut Company (1872), Wilkins Toy (1890) which became Kingsbury

Manufacturing (1919), J Chein (1903), Keystone (1911), Mengle (1920s), and Jacrim Manufacturing (1921). There were hundreds more that have disappeared. I have a model of J. P. Morgan’s 1891 SS Corsair with a working live steam engine, complete with boiler for steam as well as provision for sails built by an unknown skilled craftsman. These boats were sailed on ponds while the owner followed in a rowboat to retrieve and turn the model because there was no way to control them from the shore. In Europe many toy boat companies copied famous battleships, ocean liners, and cargo ships of the day and were generally more detailed.

During the Depression years, the US Government set about to create jobs through the Works Progress Administration (WPA) and built many parks with ponds designed for model boating. In the 1930s,

Roy Clough of Marblehead, MA, designed the first Marblehead (50/800) class model yacht. A manual arts teacher named John Black further refined this class boat and wrote *Yachting with Models*. The original rule was 50 in long and 800 in² of sail, which has evolved only slightly over time. This class boat became an international sensation with thousands being sailed worldwide.

Today we have relics of the past that have been found in attics, barns, garages, basements, trash piles, and other storage areas. Many have been destroyed by play and age. They can be carefully restored by cleaning and touch up or complete repainting; either can keep the original flavor of the model. The windup motors can be oiled, and the sailboats can have new sails and rigging. This does not totally devalue the toy. These restored toys rescued from oblivion will only increase in value over time.

Lately there has been a resurgence of copies of all kinds of toys both mechanical and sail. These have been crafted and copied from old-time toys and can be very attractive. Many times these are sold at prices close to the price of genuine antiques. Some are called pond boats, but were never on a pond and cannot sail as there is no ballast (keel weight) like a real pond boat. They are for display purposes only. An antique boat is a much better value than a copy and definitely should cost more! The new boats (display models) probably will not increase in value over time.

Manufactured Boats

For many years collectors have been buying and selling toy boats and sailboats with the label Jacrim, Keystone, and Seaworthy labels on them. These boats were manufactured in Massachusetts by a company started by two MIT graduates.

The Jacrim Manufacturing Company was the brainchild of Chester Rimmer and Arthur Jackson. These two graduates of the MIT class of 1921 started a company in 1922 with the financial assistance of Arthur's uncle Charles H. Jackson. He contributed \$10,000 to the company which registered in 1924 with the state of Massachusetts



Seaworthy Defender. Photo Bob Jones



Jacrim Label. Photo Bob Jones



Seaworthy label. Photo Bob Jones

in the city of Malden. Rimmer was listed as treasurer, and his other brothers were the other officers. These older brothers were coopers and cabinet makers by trade. There is no mention of Jackson as he left the company to pursue engineering around 1925. This was precipitated by the company takeover by Keystone Manufacturing. Around the same time Isadore Marks was president and Benjamin Marks secretary. Chester Rimmer remained as treasurer. The other Rimmers took jobs in various Marks companies. The Seaworthy label did not designate a different company but rather a trade name of a line of boats within Jacrim/Keystone.

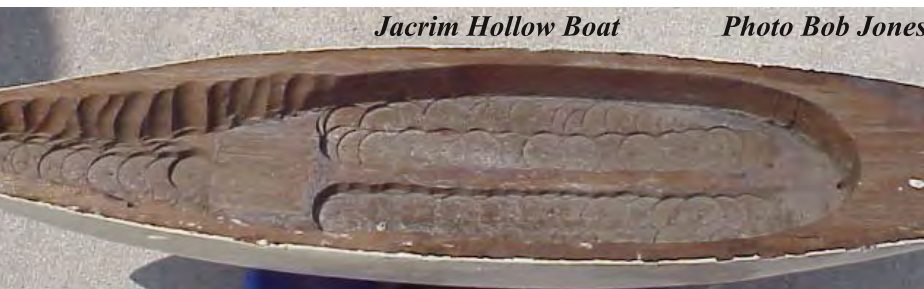
Jacrim boats were “Really Hollow” model boats. As Keystone production increased and hand shaped boats gave way to machine cut boats, many of the Seaworthy features were eliminated. This was due

to cost cutting efforts. The product line was 12–36-in sailboats, spring motor-driven motor boats from 18- to 30-in, battery boats, rubber band-driven boats, Tom Thumb boats, forts, doll houses, furniture, “Ride Em” wagons, and other toys. By 1938 the war toys appeared and continued through the 1940s. The production continued through 1957 when Chester Rimmer retired.



Photo Bob Jones

Where to get your boat serviced.



Jacrim Hollow Boat

Photo Bob Jones

You could even get your boats serviced!

Please go to the history page of the US VMYG website for more information about Manufactured Boats. You may also contact Bob Jones at: seaworthy1924@yahoo.com.

Barnacle



A Great Finish – Do you want a waterproof finish and a beautiful patina on your bright work? Waterlox Original Tung Oil finish can give you both. This product is a resin-modified Tung oil-based wood finish. The Tung oil provides the best penetrating and drying qualities available while the resin allows the coatings to form a film that is both water-resistant and elastic. This product is great for the bright work on your model yacht. Multiple layers of this product provide for a beautiful, durable, long lasting finish with a wonderful patina.

MODEL YACHT RACING ASSOCIATION 1921 ~ OF AMERICA ~ 1945

The object of this Association is to encourage and promote the designing, building, and racing of model sailing yachts, and to establish uniform rules and regulations for the conduct of the sport.

Model yacht clubs in the United States or possessions having a roster of not less than ten members are eligible for membership in M. Y. R. A. A.

Annual dues are ten dollars. Applications for membership shall be made in writing to the National Secretary, and shall be signed by the Commodore and Secretary of the applicant club, stating the number of members the applicant club has, and accompanied by the fee of ten dollars, as dues for the calendar year, to be returned if the application is rejected.

A model yacht competing in any National Division or Invitation Regatta must be registered in the M. Y. R. A. A.

Member clubs are grouped in divisions, the Eastern, Mid-western, and Pacific, and are units forming the M. Y. R. A. A. Each division has its own regional officers and divisional championship races. The National Association has the direct charge of the National Championships and other National Races, and promulgates Rules and Regulations for the conduct of the sport.

YOU SHOULD JOIN THE M. Y. R. A. A. BECAUSE YOU OBTAIN

Protection of its Constitution, Regulations, Sailing and Rating Rules.

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A greater satisfaction from the time and substance expended and the experiences gained.

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Latest National and Local news.

Instructive and informative articles.

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Up-to-date plans of successful yachts of all classes.

A broad exchange of aesthetics, scientific, and practical ideas and information.

Photo reproductions of yachts in action and their skippers and their haunts.

Columns devoted to the general discussion, new ideas suggestions, and comments.

SUBSCRIPTION, ONE YEAR, \$1.50

This has been reproduced from Volume 1, Number 1 (March, 1945) of *Model Yachting Monthly*.

Rating Rules *for* Vintage Models

Author and photos John Henderson
Illustrations US VMYG Archives

This article was conceived when a few of us spent some winter hours looking through plans for vintage models including 10-raters, A-class boats, and other designs that fall within the US Vintage Model Yacht Group's purview. These designs were based on rating rules that embodied our hobby's early attempts to rate disparate models. Not surprisingly, the approaches to rating these early models paralleled those of full-size yachts of the same era. Our casual discussions morphed into an examination of some of the history of our hobby and the evolution of model boat design.

Any essay on this subject will start by saying that the purpose of rating rules is to allow fair competition among boats of different sizes. Any honest writer will acknowledge the many rating rules that have been implemented over many years, especially for full-size boats, each with the same stated goal, and each trying to fix the ways in which its predecessor failed. And we're not done yet. This succession of rating rules has been accompanied by impassioned arguments among skippers who were certain that their racing results, as established by whatever current rating rule, did not fairly represent their own actual sailing skill. One of the misadventures of my younger years was service on a regional rating committee for full-size boats. I probably haven't heard all of the arguments, but I've got lots of stories of sailing fantasies.

Rating rules attempt to quantify and balance the speed-producing aspects of a design against those that generally slow it down. The big factors are waterline length, sail area (both of which tend to increase speed), and displacement (which tends to diminish speed). The various rules have combined these factors in ways that range from quite simple to quite complicated. For example, "length" is not as straightforward as it seems, because the actual length of the waterline when the boat is heeled might be different from the "designed" waterline, and some rules try to quantify this effect.

Some comments:

- 1) "Rating rules", for the purposes of this article, do not include rules such as those defining the Marblehead class. Marblehead rules do not supply a "rating"; rather, they simply define the boat—*i.e.*, it must have LOA of 50 in and a sail area of 800 in², plus some other limits on draft, garboard shape, etc.
- 2) Some of us have raced full-sized boats under the Performance Handicap Rating Formula (PHRF) system. That rating system is not the same as the "rating rules" that we will discuss here. PHRF attempts to assess boat speed potential based on observations of racing results, not on actual measurements of the boats. The "rating rules" that we discuss here are based on measurements.

Early Rules: Length and Sail Area

The 10-Rater Rule

In the 1880s, a very simple length-and-sail area rule was proposed:

$$\text{Rating} = \frac{\text{LWL} \times \text{Sail Area}}{6000}$$

where LWL is the designed (load) waterline in inches and sail area is in in².

This rule (with appropriate measurement units) was adopted for both models and full-size boats. For a 10-Rater model, the equation above calculated to 10 using English units of inches, meaning that the dimensions of a legal 10-Rater model, when entered into this formula must result in a number no greater than 10. Note that this same length-sail area formulation is still used today for modern 10-Rater models, but it is re-stated in metric units. The general formulation anticipates larger (or smaller) models, perhaps 15- or 20-raters, but I do not know whether they ever evolved.

Note that overall length is not measured, which encourages very long bow and stern overhangs among those who hope to increase the waterline length when the boat heels. Likewise, neither beam nor draft is measured, and I think early designs to this rule tended to be shallow, flat hulls with deep keels. Displacement is not measured either, although there is some indirect control via the length and sail area effects on rating and practical stability.

On its face, a simple rule like this would appear to encourage boats with a very short waterline and a huge sail area, at least for light conditions, but the evolution of the class actually followed “healthier” trends. The class is still active today, especially in the UK. For 10-Rater designs of the “vintage” era,

there is discussion in E.W. Hobbs’ book *Model Sailing Boats*. He even includes a table (for the arithmetically challenged?) showing the trade-off between length and sail area, ranging from an LWL of 30” with associated sail area of 2000 in² up to an LWL of 60” and sail area of 1000 in².

An example of a boat designed to the 10-rater rule is given in Fig. 1.

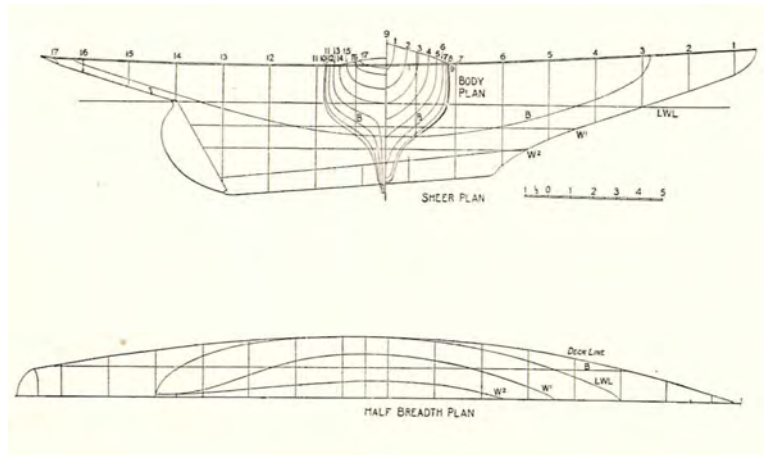


Fig. 1: Lines drawing for a typical vintage 10-Rater

The Seawanhaka Rule

There were other versions of length-and-sail area rules, especially for full-size boats. An example of note was developed at the Seawanhaka Yacht Club, with the formula:

$$\text{Rating} = \frac{\text{LWL} + \sqrt{S}}{2}$$

By taking the square root of the sail area and summing (rather than multiplying) in the numerator, this rule (unlike the 10-Rater rule) is expressed in units of length. This rule was used for the America’s Cup from 1893 until 1903—a time period that includes *Columbia*, the author’s model, shown in Photo 1.

Comparing the 10-Rater and Seawanhaka formulas shows that the 10-Rater rule treats length more gently than Seawanhaka. Working through some specific examples will show that, for the same length increase, one would have to reduce the sail area more under Seawanhaka in order to preserve the rating. Perhaps this explains why the 10-Rater formula has encouraged long boats and has avoided temptation to make excessively beamy boats. There is more discussion of these points in a book by Dixon Kemp called *A Manual of Yacht and Boat Sailing*.



Photo 1: Model of Columbia, designed by NG Herreshoff to the Seawanhaka Rule

International Rules (sometimes called “Meter-Boat Rules”)

In the early years of the 20th century, there was a move to promote more “seaworthy” boats than the designs encouraged by the length-and-sail area rules. Specifically, heavier and somewhat beamier boats with fuller underbodies, “slacker” turns to the bilge, and a much less “fin-like” keel were encouraged. 12-meter yachts (and 6-meter yachts) were built to these rules. (Interestingly, according to Wikipedia, the 5.5-meter class of full-size yachts follows a design rule quite similar to our A-Class model rating rules.)

The lines of an example International Rule boat are shown in Fig. 2, which can be compared with Fig. 1 to reveal the obvious differences in hull shape. The lines in Fig. 2 are actually those of a typical 12-meter yacht.

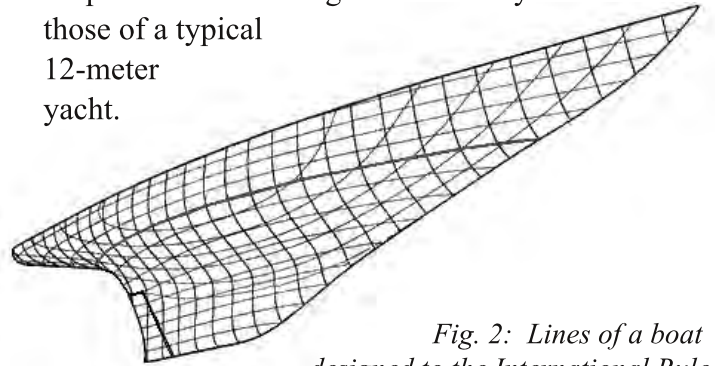


Fig. 2: Lines of a boat designed to the International Rule

According to Hobbs’ *Model Sailing Boats*, the 1908 formulation of the International Rule was:

$$\text{Rating} = \frac{1}{2} \left[L + B + \frac{G}{2} + 3d + \frac{\sqrt{S}}{3} - F \right]$$

where:

L = waterline length (more or less – there were some modifications from the straightforward dimension)

B = beam

G = chain girth (stretch a chain from gunwale to gunwale around the keel)

d = difference between chain girth and actual (“skin”) girth measured by following the surface of the hull

S = sail area

F = freeboard (as measured in a specified and detailed procedure)

I guess that the girth and freeboard measurements were added to promote what were regarded as “wholesome” designs. In particular, the chain girth measurement was a new addition that penalized (eliminated, as a practical matter) fin keels.

For a 12-meter boat, the formula would have to work out to a number no greater than 12 meters. (Note that 12 meters is not the length of the yacht.) This rule evolved a bit during the heyday of the 12-meters, but the rule structure and basic concepts remained, as did the general boat shape that the rule was meant to encourage. (And here I do not allow myself to be side-tracked into a discussion of the famous winged keel.)

The difficulties of measuring a model’s conformance to this rule are manifest. The AMYA’s two 12-meter classes are essentially one-designs, which circumvents the problem of measuring every model.

“A” Class Rating Rule

For our vintage boats, I will use the formulation of the A-Class rule from 1957, which is expressed in English units of inches and pounds (the modern version of the A-Class rule is metric, but equivalent). Accounts of the history of this class indicate that it was intended to produce models that would act very much like full-size boats and could be used as a guide to design developments. The A-Class models were intended to be 1/6 size (*i.e.*, 2 in. = 1 ft.)

of yachts whose length did not exceed 6 meters (19.68 ft). Some historical accounts (e.g., Hobbs) refer to this as the “18-footer Class”, although versions h the attentive reader will note that 18 feet only equals 6 meters for large values of 18.

The rating formula for the A-Class is:

$$\text{Rating} = \frac{L + \sqrt{S}}{4} + \frac{L \times \sqrt{S}}{12 \times \sqrt[3]{D}}$$

where:

- L = load waterline length modified by the “quarter beam length” measured at ¼ of the beam at the load waterline
- S = sail area
- D = displacement in cubic inches (weight in pounds multiplied by 27 for salt water)

There are also some explicit limitations on displacement, draft, freeboard, projections or hollows in the hull, and sail plan height, with rating penalties for exceeding the limits.

This rule included displacement explicitly. In the previous rules, displacement was controlled only indirectly, by the practical limitations imposed by length, beam, sail area, and stability. I suspect that this inclusion of displacement in the denominator of the rating equation encouraged somewhat heavier boats than, say, the 10-Rater rule. In fact, A-Class models do tend to be rather heavy. This increase in displacement shows clearly in the deeper underbody of the A-Class design, as revealed by comparing the lines drawings of Figs. 1 and 3.

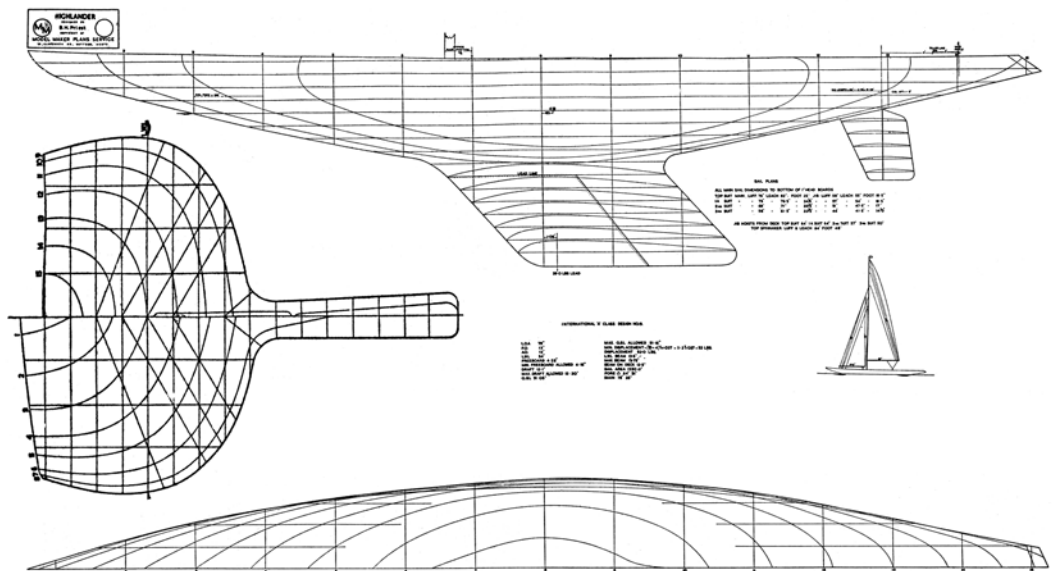


Fig. 3: Example Vintage A-Class design.”

Some measurement difficulties—mostly related to the use and determination of the quarter beam measurements—are likely. The modern A-Class in the UK has a detailed measurement procedure specification, which I understand can take a few hours to complete. I suspect that the difficulties of designing and measuring new boats designed to this rule explain why US VMYG activity in the A-Class is confined to already-existing, older models, which have presumably been “certified” sometime in their past.

By all accounts, A-Class rating rules produce boats that sail well and look good. At winds appropriate to their 1/6 scale size, they produce wave trains and heel angles that correspond to those of full-size yachts.

American Universal Rating Rule

Various other rating rules were developed in Europe and America. The “American Universal Rule” came to our attention when we were investigating the provenance of a design in our archives done by Thomas Darling in 1926. See Fig. 4.

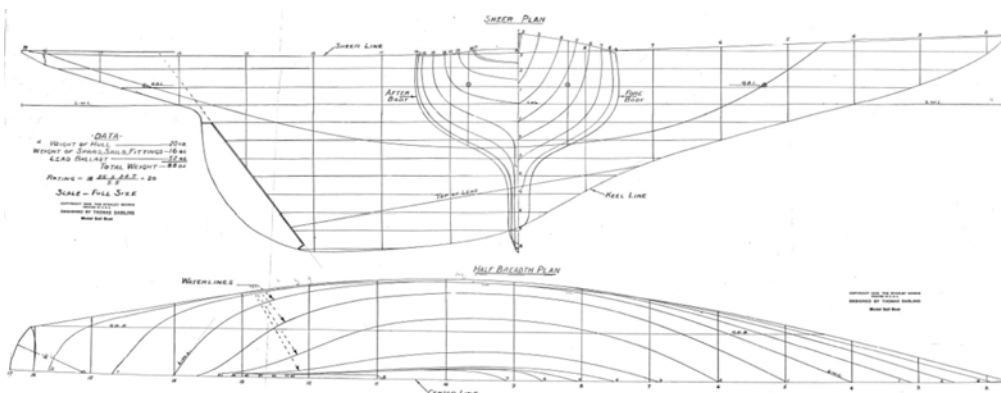


Fig. 4: “Darling” design to the American Universal Rule

The notes on the drawing sheet tabulate some weights and also give an equation calculating a rating of 20 (in units of inches, presumably). (Note: This does not indicate that the boat was a “20-Rater” as defined in the discussion of the “10-Rater” rule above. Rather, it means that the boat rated 20 according to the rating formula on the plans.)

The rating formula that matches the one on Darling’s plans is the American Universal Rule, which is:

$$\text{Rating} = 0.18 \times \frac{L \times \sqrt{S}}{\sqrt[3]{D}}$$

where:


- L = load waterline length, modified by a specified portion of the quarter beam length
 - S = sail area
 - D = displacement in cubic inches
- and the overall rating is in units of length.

Savvy observers will note that Darling’s hull looks remarkably like that of a J-Class yacht. In fact, full-size J-boats were indeed designed to the American Universal Rule. J-Class yachts had a rating between 65 and 76 ft. Note that this is not the length of the boats, which all seemed to have waterline lengths in a small range around 83 ft, with rather large overhangs.

This short article cannot cover the details of the various rules, but, even without these details, I think we come away with an appreciation for model

yacht designers in the first part of the 20th century (our “vintage” years). These were not casual builders. They understood boat performance attributes, and their designs reflected serious thought about the shape trade-offs demanded by the rating rules. It would appear

that their model design efforts were similar to those required for full-size boats (although with simplified construction requirements). Based on historical accounts, they were also prolific designers/builders. Restoring, reproducing, and appreciating this heritage is part of our purpose.



Pepper—A 1948 Chris-Craft Custom Runabout

Author Richard Rogers
Photos Annie and Richard Rogers

Pepper, a 1/5th scale model of a 1948 Chris-Craft 20-ft Custom Runabout, was started by Leroy “Pepper” Langley, a past Commodore of the Solomons Island Model Boat Club (SIMBC) sponsored by the Calvert Marine Museum in Solomons, MD. The model was based on plans published in a 1948 *Mechanix Illustrated*. Her length on deck is 48 in, and her beam is 15 in.

Commodore Langley began building the model in the early 1990s, with plans to power it with a gas string trimmer engine. However, he was unable to finish the model and prior to his death he asked Captain Richard Rogers if he would complete the build. Richard was extremely honored to be requested to do so by this master model maker, and he chose to name the boat in memory of Pepper, who was both a friend and a mentor.

Richard received the model on a strong back with frames in place and a bottom and side panel attached. He began by completing the remaining panels and then faired the hull and covered it with 2-oz fiberglass cloth and epoxy resin. Richard sanded and faired the model again, preparing it for a coat of primer.

After priming, he laid out the running gear. Richard used two hecto perm motors with 3/16-in stainless steel shafts and bronze bearings. He added grease tubes to the shaft tubes to act as stuffing boxes, all of which were handmade. The rudder assemblies were from Dumas, as were two 2-in square bronze props. He installed a 6-V Dumas battery to power each motor along with a Novak Rooster Reversible Speed Controller. A Hi-Tech receiver and Ace transmitter will enable the Captain to control the model when she is under power.



The seams between the deck boards were filled with a silicone tub caulking. Prior to caulking, Captain Rogers inserted a cord to help fill the void and to facilitate the removal of caulking in case he was dissatisfied with any of the seams.

Once Richard was satisfied with the electronics and powering of *Pepper*, he began laying her mahogany deck. He treated the deck boards with linseed oil and bright finished the perimeter boards and transom with upwards of seven coats of varnish. Looking at the model, one can notice the contrast between the light and dark wood.

The Captain filled the seams between the deck boards with a silicone tub caulking. Prior to the caulking he inserted a cord to help fill the saw kerf and to facilitate the removal of caulking in case he was dissatisfied with any of the seams. When he was finished with the caulked seams, he was not 100% satisfied as the caulking dried and shrunk inconsistently.

After checking the waterline, Richard primed the sides and the bottom. In keeping with the colors of his RAJAH line (all the models the Captain has made), he painted the sides white and the bottom seafoam green using Rust-Oleum® spray paint. He painted the interior a machinery gray.

Richard used a thick piece of mahogany along the shear to obtain the traditional Chris-Craft rounded-over appearance. In order to help protect the sides, he used handcrafted, half-round brass rub rails attached with drilled and countersunk brads. In keeping with tradition, Richard hand made brass cutwaters and stern corners, creating card stock patterns prior to cutting and soldering the brass pieces. He used thin brass for his metal pieces because it was more readily available in machine stock sizes. In the future, he plans to dismantle the metal parts and have them all chrome-plated.

The Captain hand made the windshield and running lights out of brass stock. He inlaid the brass dash assembly, with burnings, into the mahogany piece behind it. He made the dials from brass jewelry rings and magazine cutouts. Speakers were positioned on both the port and starboard side.



Windshield and running lights were hand made out of brass stock.



Richard created three openings in the deck: The first was the cockpit area with art deco fur bench upholstery for Barbie® to sit on as she captains the boat.



Art Deco fur upholstery covers the bench for Barbie to sit on as she captains the boat.

The second he decorated with a tonneau cover to protect the aft seating compartment. The third became a hatch that opened on a swing arm hinge, to the engine compartment.

He made a completely removable afterdeck, from the cockpit to the stern of the boat, as he wanted to avoid fishing around in small spaces when adjustments were needed for the working parts.

Captain Rogers gave *Pepper* her first run in the swimming pool at Zahniser's Yachting Center, in Solomons, MD. Captain Barbie definitely enjoyed her ride on this beautiful boat.

Self Righting Catamaran

TMY Editorial Staff with comments by TJ Perrotti

In 1980, Herman Berger of Pop-Up Manufacturing in Amityville, NY (Long Island) developed a beautiful catamaran model. It was actually quite large. Additionally he designed and patented a self righting feature. The basic premise was to keep the mast top afloat and to change the center of buoyancy to right the boat. The company catalogue states “the new cat embodies the best of the world’s greatest catamaran sail boats, modified to accommodate operating mechanism and conditions in ponds and small lakes. The boat is a superb sailing machine and has a failsafe righting system that in no way impairs its appearance or performance.”

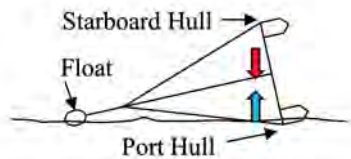


Diagram 1. Boat has capsized. Mast head float prevents the mast from sinking and turning the boat upside down or turtle.

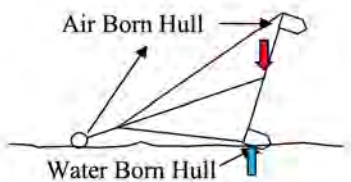


Diagram 2. The drum winch hauls in on the port side stay and pays out the starboard stay, simultaneously pivoting the water born hull toward the mast and the airborne hull away from the mast.

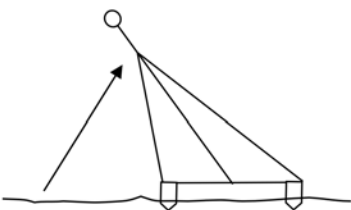


Diagram 3. The airborne hull, with the help of gravity, overwhelms the leverage of the mast and the boat is righted. In this position the boat resists capsizing.

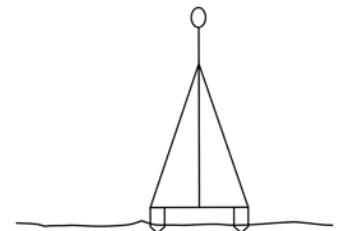


Diagram 4. When the control stick is released it automatically comes back to neutral bringing the mast to an erect position. The mast can be pivoted by radio while sailing.

In the first diagram, downward weight force is vertical atop upward buoyancy force. But, as the rig is adjusted, the CG shifts to the right (to weather), and the downward weight force will shift to the right of the upward buoyancy force. At that point, the craft will self-right.

Berger patented another self righting mechanism in 1980. The illustrations below are Berger's patent drawings showing an earlier version of his design thinking. Note the hinged cross members can be folded up to change the center of gravity on either side of the boat.

United States Patent [19] [11] **4,223,621**
Berger [45] **Sep. 23, 1980**

[54] **MULTIHULL SAILING VESSEL HAVING MEANS FOR RIGHTING CAPSIZED VESSELS INCORPORATED THEREIN**

[76] **Inventor:** Herman Berger, 27 Emerson Ave., Amityville, N.Y. 11701

[21] **Appl. No.:** 907,793

[22] **Filed:** May 19, 1978

[51] **Int. Cl.:** B63B 1/00

[52] **U.S. Cl.:** 114/61; 114/39; 9/2 F

[58] **Field of Search:** 114/61, 39, 90; 9/2 R, 9/2 C, 2 F, 2 S

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Primary Examiner—Trygve M. Blix

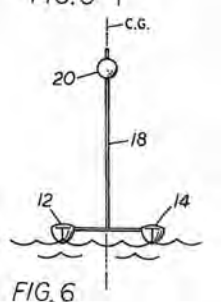
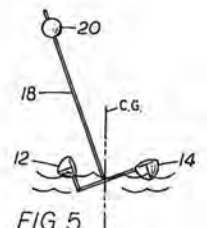
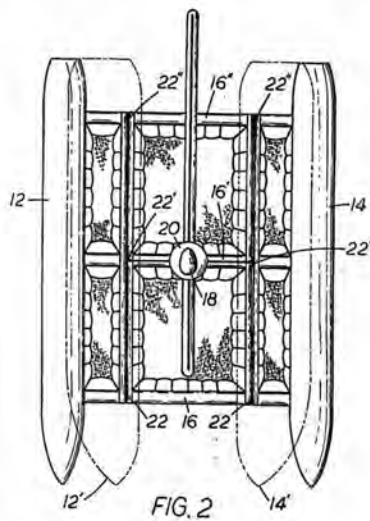
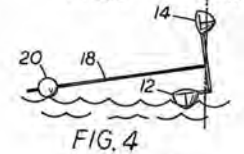
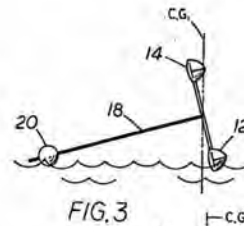
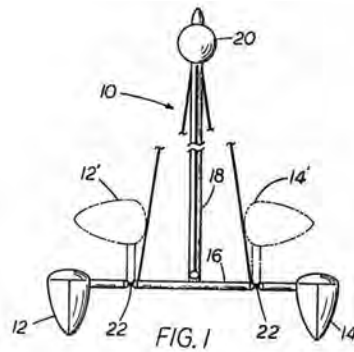
Assistant Examiner—D. W. Keen

Attorney, Agent, or Firm—Stanley Ira Laughlin

[57] **ABSTRACT**

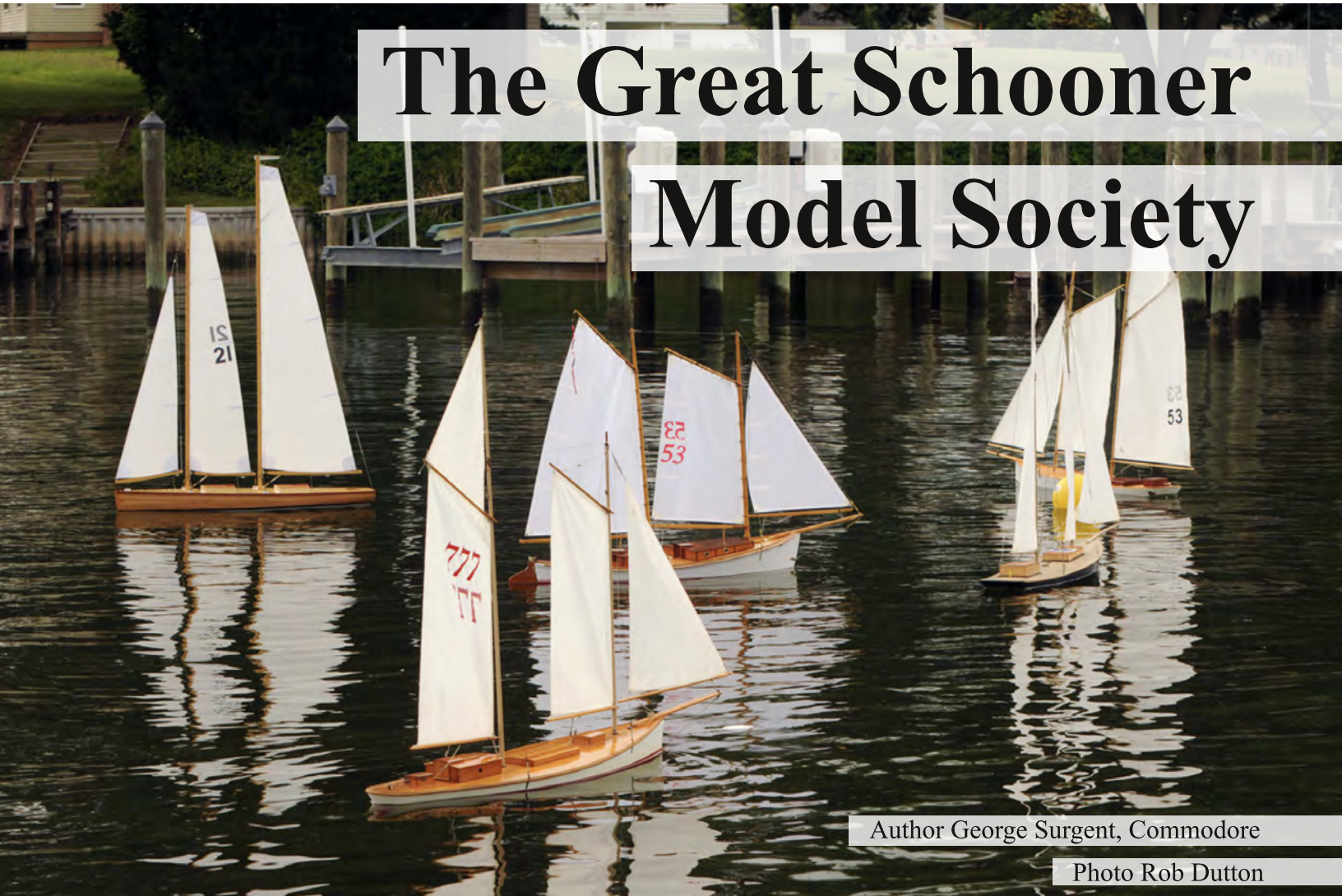
A multihull sailing vessel comprising a plurality of floats having ganged pivotal positioning means incorporated within transverse interconnecting members so that the floats may be rotated around longitudinal axes for righting the vessel whenever it is capsized.

8 Claims, 6 Drawing Figures



Berger's early patent drawings

The Great Schooner Model Society



Author George Surgent, Commodore

Photo Rob Dutton

Regatta at the Calvert Marine Museum

The inspiration for The Great Schooner Model Society goes back to the 1980s and the Calvert Marine Museum in Solomons, MD. At the time, the museum was housed in the old Solomons Island School, and the museum's model and wood shop was located in the school basement. Master model maker and master wood carver, Leroy "Pepper" Langley, had just completed the first 48-in Skipjack for the newly formed Solomons Island Model Boat Club. Saturday morning club meetings consisted of a handful of members with partially completed models working out details, getting pointers, and exchanging ideas. Among these model skipjack

builders was Pepper's good friend, Melvin A. Conant: a rogue schooner man at heart. Talk of model schooners infiltrated Saturday mornings. Eventually Pepper began construction of a majestic three-masted schooner and Mel began the stunning Baltimore Clipper *Lynx*. As they say, the rest is history.

Over time Mel made contact with a few others interested in multi-masted models. In 1992 Mel, the self appointed Commodore, hosted the first gathering of the group he named "The Great Schooner Model Society." Only two boats sailed,

Mel's *Lynx* and Mary Hayes's Chesapeake Bay Bugeye *Ginger Lee*. The enthusiasm of the handful of observers under the Drum Point lighthouse at the Calvert Marine Museum was promising and included future members Herb and Bob Jones. The following year they returned to sail a 60-year old Grand Banks style schooner *White Haven*, built by their father that Herb had restored and converted to R/C.

Slowly momentum built. New members joined,

and the variety of boats expanded. Beautiful historic schooners, square rigged ships, Carolina sharpies and a Chinese junk, to name but a few. A handful of Chesapeake Bay Bugeyes were built and sailed. Though modern yachtsmen might describe this rig as a ketch, they are listed as schooners in the government registries of the period. In fact, all two-masted working sailboat captains in North America use schooner nomenclature and refer to the aftermost sail as the mainsail, regardless of size.

Second place smallest Schooner entry.



Photo George Surgent



Photo George Surgent

Winding World Award for Fun and Friendship

The members of the Great Schooner Model Society are mostly model builders/sailors that enjoy their time spent researching, designing, and building their models as much as sailing them. There is always great interest when word gets out that someone has a new model on the building board. Variety is the name of the game even when a particular design like the Sharpie Schooner wins favor among a number of members. Though most of the sharpies use the same hull design; no two are identical in other features. Some are gaff rigged, with and without main tops, others are Marconi main and fore, while still others prefer the staysail rig.

When Society members are asked by an innocent observer; “what rules do your boats have to conform to in order to participate?” The response is often a good natured; “Rules? We don’t need no stinkin’ rules!” Well, not quite, the Society has one rule; Each boat must have at least two masts. That’s it. Mel’s idea was to create an inclusive camaraderie among model builders/sailors of

multi-masted craft. There are no size, weight, or material requirements. Though most of the designs are based on historic vessels, creative license is often taken with proportions and style of rig. Everything from wood hulls and cotton sails, to carbon fiber and Mylar® has made it into Society ranks.

Society regattas are held several times over the course of the summer in conjunction with the Solomons Island Model Boat Club. Racing rules are pretty much standard fare, with avoidance of collisions being paramount. The top point-getter for the season has traditionally been

presented with the Mel Conant Cup. The cup was the gift of founding Commodore, Mel Conant. It is silver, with a Bugeye engraved on it. Recipients are responsible for having their boat’s name and the year engraved on it and for keeping the Cup safe for the year.

Over the years the Society developed a close relationship with the late Mark Steele, whose “Windlings” articles were a regular feature of the *The Model Yacht*. Mark often reported on Society regattas, and to honor the spirit exemplified by the Society, presented a *Fun and Friendship* award to be presented annually to that skipper who best represents the spirit of The Great Model Schooner Society.

What is The Great Model Schooner Society? It is a group of like-minded builders/skipper who enjoy good times on the water and have a soft spot for multi-masted boats. If that describes you, and you’re interested in joining us for a sail, please contact Rob Dutton (robbie653@yahoo.com) for a schedule or questions regarding the Society.

Stay at Home Sailing

Author and photographer
Richard Mikulec

With all the COVID-19 problems, we are all chomping at the bit to go sailing. So to help ease my anxiety for not being on the water, I set up my *Madcap* for "sailing" in our living room.

It doesn't look like much, but the education is priceless. When you first turn on the fan, you'll probably think "so what's the big deal" until you start making adjustments. In the closed environment of this venue, you can study the impact on sail shape each sheet, outhaul, hoist, downhaul, topping lift, boom vang, forestay, backstay, upper shroud, lower shroud adjustment you make. With every adjustment, you have to step away from the boat so you are not affecting the wind.

After a couple of hours, I suggest that you turn off the fan and loosen the rigging like you would following a day's sailing. While sipping your usual post race cool one, you will probably be patting yourself on the back thinking you have a better understanding of your boat.

You will have a reality check when you setup your boat and turn on the fan tomorrow.

Happy sailing!



Gadgets And Gizmos:

Author and photos Joe Paradine

The dilemma I was faced with was how to get a nice painted finish on my boat. So I put together a paint stand that can be disassembled and stored until I need it again. I really wanted a nicely finished hull.

This stand was designed for a particular boat using scrap pieces of wood, hardware from the local store (and the hardware drawer), and scraps of other items.



The "Key" inserted and positioned to support the suspended hull.

The benefits of this particular gadget are:

- Inexpensive, portable, and a snap to build and disassemble.
- The painter (me) is always upwind from the spray.
- Multiple classes of boats can be suspended in this apparatus. A large or smaller version can be made.
- "Hands Free" boat handling.
- "Rotating key" (see Illustrations 1 and 2) safely secures the hull in the stand and allows for simple removal from the stand.
- Convenient "handle" to carry the prepared hull to and from the frame.

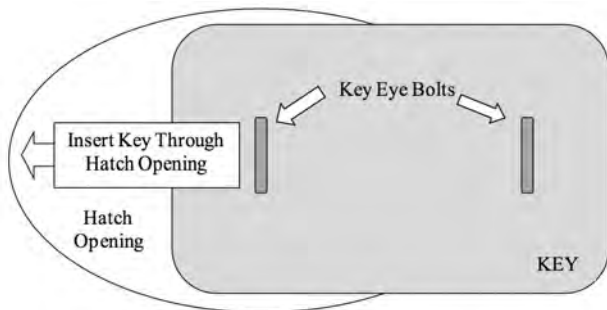


Illustration 1: the Rotating Key to be inserted into hatch opening.

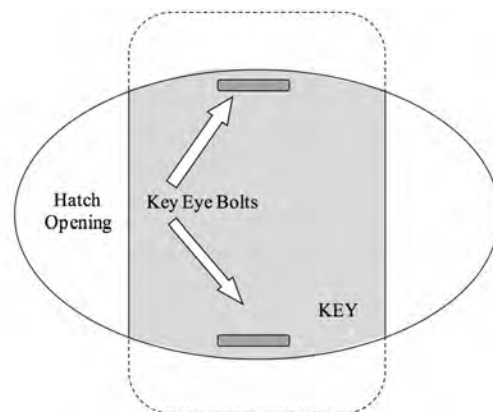


Illustration 2: the Key (solid oval) inserted and rotated 90° under the hull hatch (dotted line) to lock position.

The techniques for using this painting frame are:

- Swivel the hull according to the prevailing wind – there is a wind pennant (see Illustration 4) that always tells you wind direction so you can stand up wind.
- If you spray in a garage you can use a painter's drop cloth to contain the overspray (move your cars out of the garage).

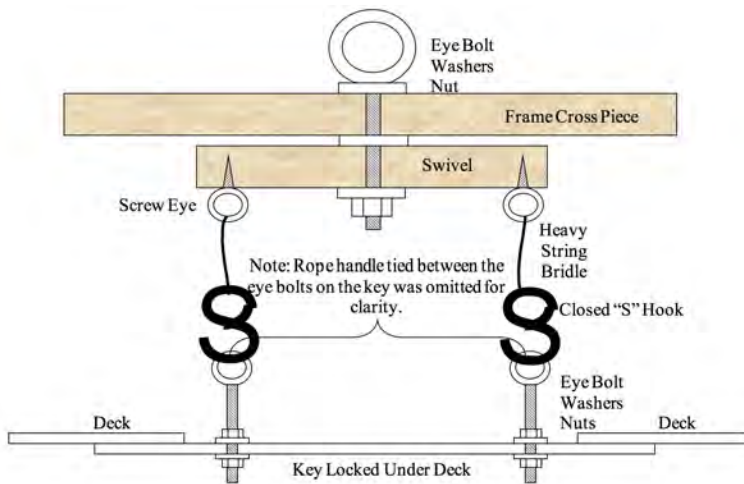


Illustration 3. Bridle assembly.

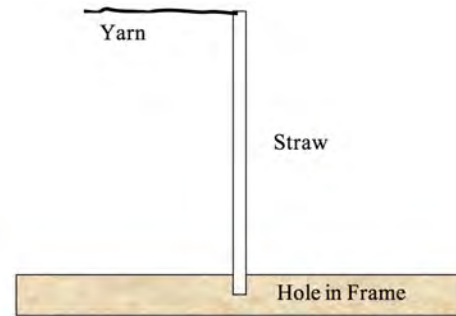


Illustration 4. Wind pennant

- The frame can be broken down into three sections for storage, a top and two sides, plus the bridle.
- The boat is suspended in a bridle (see Illustration 3) that can be disconnected from the frame and carried indoors to dry.

I am not providing measurements because the general construction can be seen in the photos and diagrams. The frame and bridle can be sized based on your boat.


Barnacle



Howard Irving Chapelle (February 1, 1901 – June 30, 1975) was an American naval architect, and curator of maritime history at the Smithsonian Institution, Washington, DC. In addition, he authored many books and articles on maritime history and marine architecture.

His other books include:

- *American Sailing Craft* (1936)
- *Yacht Designing and Planning* (1936) W. W. Norton & Company, ISBN 0-393-03756-8
- *Boatbuilding: A Complete Handbook of Wooden Boat Construction* (1941) W.W. Norton & Company Inc.
- *The History of American Sailing Ships*
- *The History of the American Sailing Navy: The Ships and Their Development*, W. W. Norton & Company, Inc. (1949), ISBN 1-56852-222-3.
- *American Small Sailing Craft* (1951) W. W. Norton & Company
- *The Search for Speed Under Sail: 1700-1855* (1967) W. W. Norton & Company, Inc.
- *The Baltimore Clipper*
- *The American Fishing Schooners 1825-1935* (1973) W. W. Norton & Company Inc., ISBN 0-393-03123-3
- *The Bark Canoes and Skin Boats of North America* (1964) Smithsonian Institution Press, ISBN 1628737921, co-written by Howard I. Chapelle and Edwin Tappan Adney.



The Ultimate Free Sailing Model Yacht

Authors Don Stafford and John Stoudt

There is no rudder. There is no weighted keel. There is no vane gear. And there is no R/C. You set the sails and release the boat into the prevailing wind. And boy do they go – fast!

A couple of years ago a friend sent me a link to a YouTube video (see Video 1 link below). The video was about model yachts people sail in Malaysia called the Malay Jong. What a really cool boat! I did not think much of it until I discovered a relative was going to Malaysia for work. He works for The Hershey Company setting up chocolate factories wherever needed. A Malay Jong – would it be cool to have one in my collection?

On Labor Day 2019, during a family picnic, I handed Don a 3X5 card with some information on it. The boat name and the link to a video. I asked him if he would mind asking around when he was back in Malaysia to see if he could get one for me.

Well the journey began. Unbeknownst to me, Don and a Malaysian associate named Mustaffa Hood (he prefers to go by the name Hood) started to search for a Jong.

One evening in early November, I got a text from Don in Malaysia. They found two builders who would make a boat for me. The first builder informed us that we would need to wait until he builds boats for the racing season. He would not build the boat for another four months. A second builder was found who not only would build it sooner but would build it for less money. It turns out the builder was a guest worker in Hood's construction business. The boats are actually made to last for one season (see Video 2 link below). This individual makes them every year for about 2 months prior to the sailing season. Don gave me the price, and I said "go ahead".

In Indonesia the pastime of building and racing Jongs remains popular, even more popular than in the other Malay countries of Malaysia and Singapore. Singapore and Malaysia are showing a renewed interest in Jongs. Hood, who grew up in Malaysia never heard of a racing Jong before Don contacted him. Hood lives in an area east of a city, Johor Bahru.



"And, They Are Off!"

In the past this region was known for the racing Jongs that were built there. The boat being built for me was made and test-sailed in Indonesia. The builder sent a picture of the completed hull. This would be followed by a video of its test sail (see Video 3 link below). Although the video is of low quality and sideways, it shows a very fast boat.

Completed, the boat's journey to the United States began. The first leg of its journey would be from Indonesia on to Malaysia. On this leg it was hand-carried. Leaving Indonesia, the boat was nearly confiscated by immigration and customs agents. A good reason for confiscating the boat was never given. The boat was allowed to continue on its journey. It arrived in Malaysia in the beginning of December. Like here in the US, December is not a good time to ship a package as long as this one. A week or so after it arrived in Malaysia, Don received a text from Hood. "Let me buy the boat from you. The boat is very delicate and will be difficult to ship." He was assured not to worry. January was spent being declined by the local shipping companies. Hood was never given a good reason to why their services would be denied. Then there was Chinese New Year which meant another week lost. Early February, again there was concern about it not getting out of Malasia.

As a last resort an import/export agent was sought, one who was willing to help with a non-commercial shipment. In mid February, with the assistance of two other associates of Don's, CW Lam and CP Chew, one was found. Lam and Chew would see that the boat would make it out of Malaysia. Two weeks into their efforts, notification was received that the boat was picked up by a shipping agent. Pictures verifying the pickup were sent by Chew. The boat was once again on its journey. While in transit it would visit five different locations in Malaysia before being put on a plane out of the country. The boat finally left Malaysia on its journey to the US on February 25. It arrived on February 27 at Don's house.

The packaging was quite creative. A homemade 12- by 12- by 108-in cardboard box was constructed to house the boat for shipping. The boat, still in its original mass transit stretch wrapped cocoon, was wrapped in layers of bubble wrap, and then placed in the homemade box. The shape of the hull and the layers of bubble wrap made it impossible to close the box. So another layer of stretch wrap was applied to the outside of the box. Upon arrival at Don's house the creative packaging job was undone. The boat was inspected for any damage that may have happened on its way to the US.



Fig. 3. The hull wrapped for shipping.

One message that was passed along during the process was, “you will need a power boat to chase this boat”. Now the fun begins because the boat came with no instructions. How do you rig it and sail it? I studied a lot of YouTube videos. The lines attached to the various pieces of rigging and the attachment points (wire loops in the hulls) are being “matched”. And did I mention the YouTube videos being studied? It is all coming together slowly. A test sail is in the near future. I will do it on a lake with soft edges because you let the boat go and it goes where the wind takes it. So with friends stationed around the lake, we will set the sails and let her go. And of course take pictures and a video.



- The rigging hooks are stainless wire
- Outrigger shroud is vinyl-coated stranded stainless steel wire



Fig. 4. Constructed entirely by hand.

These boats are pretty much made by hand. After the trees are felled and the planks cut with a chainsaw and smoothed with a power plane, the remaining work is done by hand. The craftsmen use chisels, axes, gouges, and other hand tools to complete the boat. Various materials are used to make a Jong. The boat is constructed out of the following materials:

- The spars are made of bamboo
- The goose neck is fiberglass reinforced filament tape
- The main hull is constructed of Pohon Pulai (*Alstonia Scholaris*) or Blackboard tree
- The outrigger hull is constructed out of Mango
- The outrigger pole is made from mahogany 8 ft long
- The sails are nylon and stand 8 ft high
- The cording is a very course, thick nylon

Boat Specifications:

Main Hull

LOA: 74 in

Beam: 5 ½ in

Depth (bottom of keel to deck): 4 in

Bowsprit: 16 in

Outrigger Hull

LOA: 31 ½ in

Beam: 3 in

Depth: 3 ⅜ in

Outrigger Pole: 84 in

Rig

Mast Height: 92 in

Sail Area (main): 1800 in²

Sail Area (jib): 930 in²

Total Sail Area: 2730 in²

Total boat weight = 7 lbs 12 oz

1. How to Sail a Malay Jong Boat...

<https://www.bbc.com/news/av/world-asia-46462560/how-to-sail-a-malay-jong-boat>

2. The Utara Jong Race 2016

<https://www.youtube.com/watch?v=ei9EJWghlP4>

3. Malay Jong Test Sail

https://www.youtube.com/watch?v=_Sk5nAS34Ag

