



# The MSB Journal



## *In This Issue*

- Ship Modeling Forum Online Modeling Competition
- The Matthew Project - Shaping the Hull
- Constructing and Operating a Ropewalk for Model Ship Builders



# The MSB Journal

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Front Cover  
Photo  
Ship Modeling Forum Competition

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## Editor's Notes



Another month has come and gone and here we are again!

This issue we're going to try adding an online HTML version of the MSB Journal. The content will be the same, but as you will see if you visit the website, the layout will be quite different.

We also have a new addition to The MSB Journal. Modeler Mike Brown has graciously taken on an ongoing project to follow the building of the schooner Bluenose IV. This will be a rare opportunity for us to follow the build of an actual

schooner from the planning stages right through to it's completion. If there are any questions that you may have about this build as we go along be sure to let us know. We are in direct contact with the organizers of the project and as well Mike is in direct contact the shipyard that is building the schooner so we should be able to get you answers direct from the source. I'm sure I speak for all the readers when I say "**Welcome aboard Mike!!!!**".

As always, I again would like to remind you that we are always looking for content for upcoming issues of *The MSB Journal*. Content can be anything from picture submissions, to short articles, tips and techniques, jigs and things that make some processes easier, to full blown articles. Maybe you'd like to take on a monthly column on some modeling subject (rigging, planking, POF, POB etc...). We'd like to hear from anyone who's interested. Don't be shy, drop us a line.

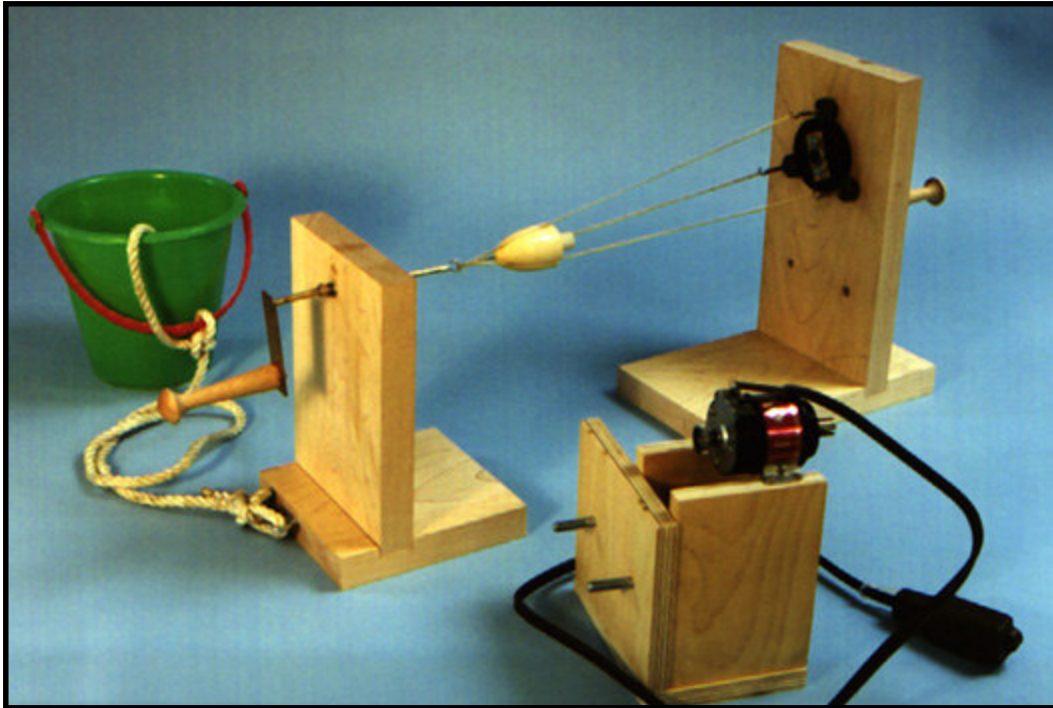
Okay, this month I'll keep things real short!

Happy Modeling!

Winston Scoville  
[www.modelshipbuilder.com](http://www.modelshipbuilder.com)

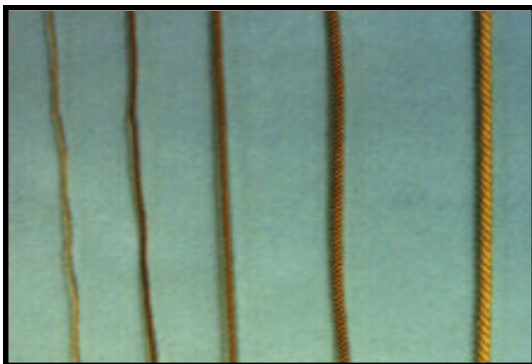
## *Constructing and Operating a Ropewalk for Model Ship Builders*

by Eugene Larson



*The ropewalk, with a very short setup to fit the photo. The drive motor is optional as discussed in the text. The drive end is to the right, the idler end is at the left, the top is mounted on the strands, and the bucket provides tension as the rope is laid up. There are four threads to each strand for this photo.*

The term 'ropewalk' drives a horrible fear into many ship model builders, and it becomes almost a matter of avoiding the subject at all cost. However, for very small "cost" and a little effort you can make your own ropewalk. With only a few minutes of further time you can learn to use it productively.



*Rope made on the ropewalk. Far left is the basic unidentified polyester thread. Next is a three-thread right-hand rope. Middle is a six-thread, two-thread per strand rope. Next is a twelve-thread, four-thread per strand rope. Far right is a twelve-thread, four-thread per strand left-hand rope of #18 button & carpet cotton thread.*



I have made several, and always tried mounting an electric motor to drive them. This really is not necessary, as I discovered when I saw Cor Hardonk, Curator of ship models at the Prins Hendrik Maritime Museum in Rotterdam, demonstrate his simple machine during the NRG's maritime tour of Northern Europe in 1996. He spun a beautifully laid rope in just a couple of minutes by hand cranking. The hand cranking method is satisfactory for shorter length of rope, in the range of three to six feet. For ropes longer than six feet there are definite advantages to the motor driven ropewalk, the main one being the ability to be at the point of lay-up of the rope.

When the perceptive eyes of the Nautical Research Guild's reviewers doing the Model Review Service and Model Judging Service on my tug caught the deception of a last minute inclusion of package twine for a tow rope to meet a display deadline, I decided to construct the simple ropewalk seen in Rotterdam to lay-up the planned rope.

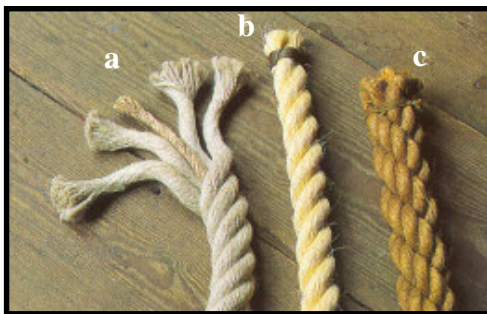
The first requirement in describing a ropewalk is to understand the construction of the rope. An excellent pamphlet produced by The Historic Dockyard, Chatham, called *The Ropery*, goes through the entire process in sixteen pages. The pamphlet may still be available. Essentially, a rope (or line) is made up of strands that may vary in number for various purposes, but for a model ropewalk we will stay with three. These strands are made up of yarns, which can vary from one to perhaps twenty. The yarns are made up of the raw material such as hemp fiber. For a model ropewalk there will only be rope, strands and yarns, and the yarns we will use are threads of linen, cotton, or polyester.



### The Anatomy of Rope

- A.** Fibres
- B.** Yarns
- C.** Strand
- D.** Rope

Photo courtesy of The Historic Dockyard, Chatham.



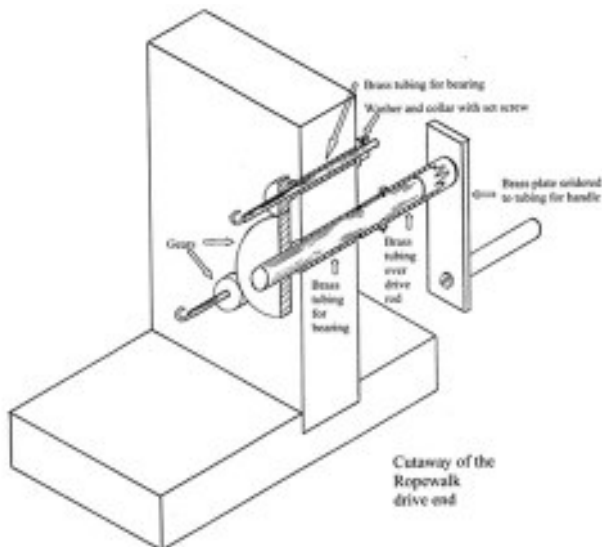
### Types of Rope

- a.** Four-strand, or shroud-laid, with a 'goke' or heart made from thinner rope.
- b.** Three-strand, or hawser-laid
- c.** Nine-strand, or cable-laid

Photo courtesy of The Historic Dockyard, Chatham.

The yarns are twisted together in such a manner that they lay up ("close" is the English term) into a rope and in doing so neutralize the twisting. The finished rope is neutral with no tendency to twist further or to unravel, except for fraying at the ends, which is corrected by serving the rope. This fraying is natural and will happen in any rope you purchase.

The photos and drawing show the basics of the design of the ropewalk. It consists of a right or driving end, a left or idler/moveable end, a top or guide to obtain an even lay, and a weight hanging off the left end to provide tension. The essential materials are scrap woods, one large gear, three small gears, brass rod and tubing, a sheet of metal, and a wood dowel. The gears are obtained at a hobby shop that has a good supply of R/C cars. The larger one is a plastic 66 tooth, 32 pitch, two-inch (approx.) gear by Traxxas, #3166 (\$3.00). The three smaller gears are metal - 20 tooth, 32 pitch, with a 5/8-inch diameter (approx.) by RRP, #0200 (\$2.95 each). The important things to remember are that there should be a large difference in the diameters, and the pitch (teeth per inch) should be the same. A few additional items are necessary if the ropewalk is to be powered.



*For reference purposes the dimensions of this unit are approximately 10 inches by five inches for the full base, and ten inches high. The wood is 7/8 inches thick.*

Obtain brass rod to fit the center holes of the gears. The gears are mounted on the brass rod. The smaller gears conveniently have set screws to hold them. A large gear with setscrews could not be found, so a mounting plate had to be fabricated to hold the gear to the rod. This can be seen in the photo. I have since found that a good epoxy will hold the large gear on the shaft if the surfaces are clean and abraded. It can also be seen that I substituted tubing for the rod on the larger gear. For the two sizes of rods locate brass tubing that is the next size larger so the rod fits snugly in the tubing, but does not bind. The tubing will become the sleeves or bearings in which the rods holding the gears run.

The wood supports should be at least 3/4 inch thick, and be hardwood, not pine. I used maple so the bearings would not work loose in the wood. A groove (dado) was cut in the wood bases for the upright pieces. Later the uprights were glued and screwed to the base. The dado probably is not necessary if you do not have the capability. But first, mark the right upright with the location of the center of the large gear. This should be near the top to give clearance for

the handle or motor. Place the large gear exactly on this center pencil mark, and put a small gear next to it, ensuring a tight fit. Mark the center of the small gear on the wood. With a compass draw a circle around the center for the large gear using the point for the center of the small gear as a reference, but adding about 3/64 inch to the radius. This additional space will permit free turning of the gears and hopefully will compensate for any errors in drilling the wood. (If this fails, start with another piece of wood.) The small gears should be equally spaced around the large gear. Conveniently, the radius of any circle can be ticked off around the circumference and the result is six evenly spaced marks. Use three of the marks to locate the holes for the bearings of the small gears.

Drill the holes for the bearings. The small gears have a 1/8-inch drive rod. The outside diameter of the bearing tubing is therefore 5/32 inch. Use that size drill and do not attempt to enlarge the hole. Cut three bearings just slightly less than the thickness of the wood. Carefully drive the bearings into the holes using a rubber mallet or at least a protection on the end of the tube to prevent damage. If your tubing and drills are the same size as mine, the tubing should fit in the hole very snugly, and will not come out. If loose, I'm sure some epoxy will hold them in. Do the same for the large gear bearing.

The rods for the small gears are cut so about an inch protrudes out one side and 1/4 inch on the other. Brass hooks are soldered into the end of the rods to hold the threads. The small gears on their shafts are mounted in the bearings as shown. On the power side there is a washer and a collar with a set screw. These collars are for R/C control rods and are available in the hobby shop.

The large center gear mounts in a similar fashion, but a little innovation is necessary to hold it in place since there are no control rod clamps with the large diameter required. An extra piece of tubing on the handle side, soldered to the handle mounting plate, works to hold the handle in place with a small bolt and nut. Judicious use of epoxy on the gear center hole and on the large brass tube will avoid using the mounting plate and soldering. Mount a handle, such as a wood dowel, loosely on the handle mounting plate, and the business end (right) of the ropewalk is finished.

W. Kelley Hannan, National Research Guild member and shop notes coordinator, suggests the following alternative method for locating and drilling the holes for the gears:

*"For the rope walk you will have one large gear and three small gears mounted on a plate (or between plates) around the large gear. The large gear is turned by the crank or motor and drives the small gears.*

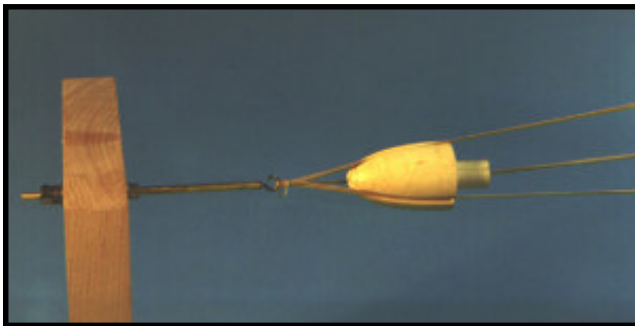
*Drill a hole in the in the plate for the shaft of the large gear. Insert that shaft in the hole and slide the large gear onto it. Place the plate with gear on the table of the drill press. Position a small gear on the plate approximately meshed with the large gear. Chuck the shaft (or a piece of shaft material) for the small gear in the drill chuck. Now lower the drill chuck and manipulate the plate so that the shaft for the small gear enters the hole in the small gear. Lock or hold the drill spindle while you manipulate the plate to achieve the desired mesh. (Some backlash is not a problem with rope-walks. It is better than a binding mesh.) When the mesh is OK, clamp the plate to the drill press table.*

*Raise the spindle. Remove the small gear and its shaft. Put the appropriate drill in the chuck and drill the hole for the small gear shaft. Repeat for the other two gears in their locations."*



The left end of the ropewalk has a rod with a hook on one end and a handle on the other, mounted in a similar fashion in a bushing so it turns freely. This follows the design of the Rotterdam ropewalk, however I have found that for longer ropes it is more convenient to have the left end turn freely. This is accomplished by placing a thrust bearing for model race cars on the rod opposite the rope hook. Note, some use fishing swivels to provide free rotation. (See later note on the problems with the thrust bearing and swivel.) An additional item is an eye or hook on the base of the left end for tying a rope to a weight over the side of the table.

The final item required is the top, bobbin, cone or separator. I prefer the term top. The purpose of the top is to keep the strands separated until there is enough twist to start the rope lay up process or closing, and to make the strands come together evenly. The top is made from a piece of hard wood. I used some dogwood that had been curing in my shop for several years. Make it into the shape of an elliptical cone and cut or file three longitudinal grooves equally spaced around the circumference. The exact shape is not critical but the grooves should be filed and sanded smooth and coated with varnish and wax.



The top in position.

This top is:

1 3/4 inches long

1 1/8 inches in diameter.

These dimensions are not critical.

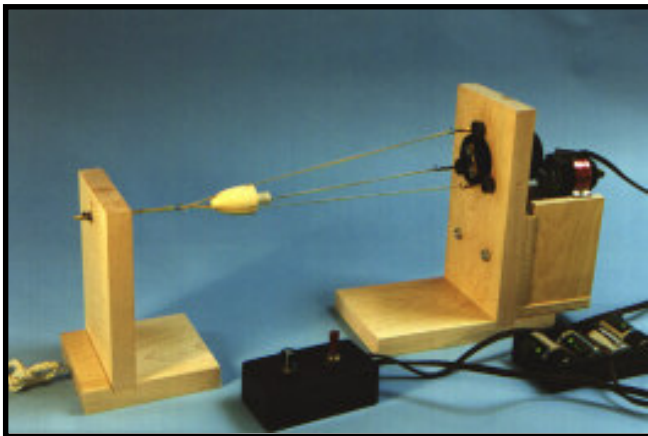
Note thrust bearing on the left.

To practice with the ropewalk, clamp both wood bases to a table about five feet apart. Place three or four pieces of common thread ("yarn") on one of the three small gear ends. This thread goes to the single rod on the left end. There should be some tension in the threads, and the tension should be about equal between the strands. Do the same for the other two small gear ends. Place some weight in a bucket tied to a rope attached to the left end. Place the top between the three sets of threads. The tension provided by the weight should keep the top in place. Remove the clamp from the left end and start turning the handle on the right end. Practice will give you experience with the amount of twist required and amount of weight, but initially there should be quite a few turns taken.

As you turn the left end will try to move toward the right end since the rope is shortening due to the twisting of the yarns. Let the movement occur, but do not let the rope go slack - be sure there is enough weight holding it back. However, too much weight (tension) will break the threads. If not enough tension is exerted on the strands they will "bunch up" as they are twisted. If this happens, do not throw away the lay-up. Just reverse the twisting until the strands are back to normal, apply more tension, and then continue. When you think you have enough twist, turn the left handle so the strands lay up into a rope. If the strands are given a left-hand twist the rope will lay up right-handed. As the rope lays up the length will again vary, so be sure to keep tension, and control the top by hand as it moves along the rope so an even twist is achieved. Do not let the top move freely as is done in some ropewalks that use model

railroad tracks and wheels to permit the free movement. The top performs the critical lay-up, and it must have very positive control. Also as the rope lays up it is necessary to provide more twist at the right in the individual strands. When finished the laid-up rope will be as much as one quarter shorter than the original length. Neutralize the rope by applying tension and relieving it while also rubbing your fingers along the rope. The rope should be close to neutral, but there might be a little untwisting when it is removed from the ropewalk due to too much twist in the strands relative to the turns in the laid -up rope. It is best to tie off the ends with a piece of thread or a knot to prevent unraveling of the threads.

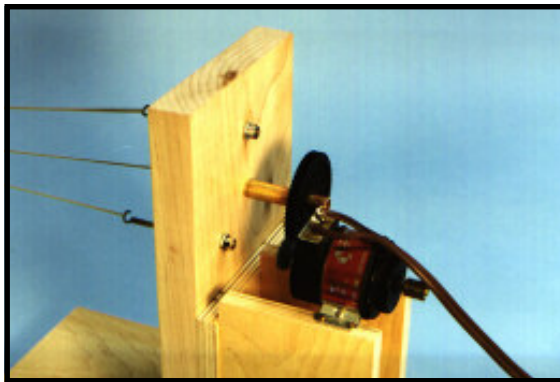
Right-hand or "hawser" rope, like the threads on a standard screw, and left-hand laid rope can easily be done with multi-strand threads. In actual practice the right-hand rope is usually three strands and the left-hand rope is nine strands, made up of three right-hand three stranded ropes. A three strand left-hand laid rope is adequate for the small scales involved. With this ropewalk design turning the handle (large gear) in the counterclockwise direction produces right-hand laid rope. If one thread per strand is used care must be taken to ensure the direction of twist does not unravel the thread. Some threads can be "untwisted" while others will fall apart. Most thread has a right-hand twist, therefore the lay-up of right-hand rope requires the single threads to be twisted in a left-hand direction. This takes the original twist out of the thread, and then twists it backwards. The result is a rope that is not as smooth as it would be if laid-up left-handed. When more than one thread per strand is used, the threads twist upon themselves, and the original twist is not affected.



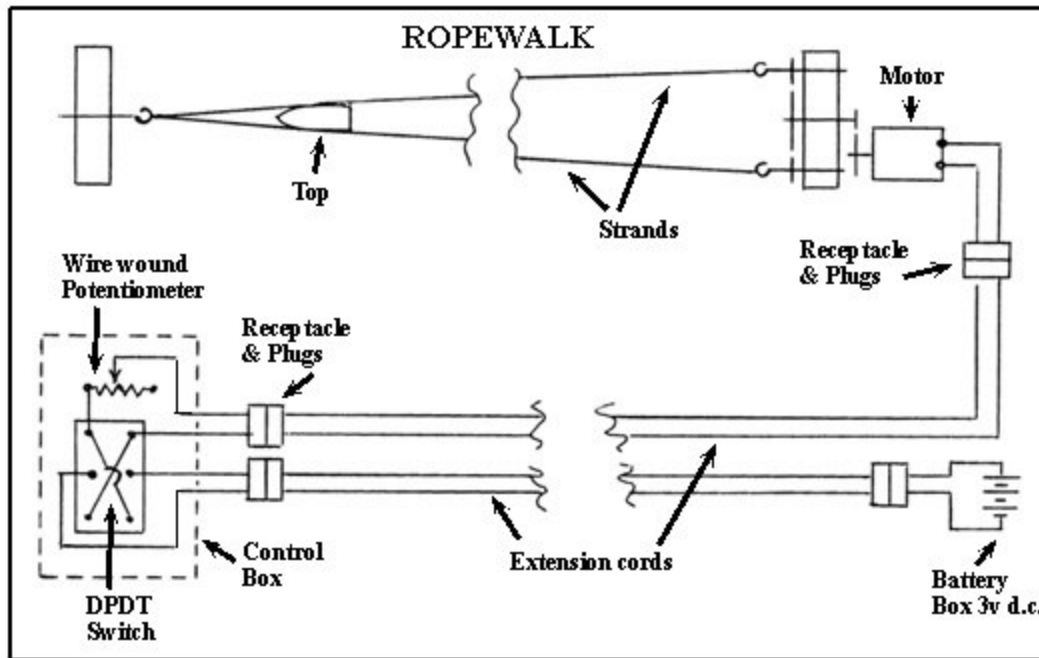
*The rope walk with the motor mounted. The control box and battery holder allow the manufacture of any length of rope.*

The addition of a motor drive permits the making of an unlimited length of rope because the operator does not have to have easy access to the right, drive end. The motor I show is an old six-volt Dumas Pittman model boat motor with drive gears the same as those used for the ropewalk. Mounting is straight forward, and the energy comes from D cells connected in series/parallel to provide three volts, and sufficient current capacity to make a lot of rope. Control is provided by a wire wound potentiometer and a reversing switch (double pole-double throw, center off) mounted in a utility box, all available from a local electronics store (Radio Shack). Two short extension cords were cut in half and the cut ends were soldered to the components. The plug and receptacle ends attach to two appropriate length extension cords. The electrical arrangement with the on-off-reversing switch in the box requires four wires, two from the battery and two to the motor. The batteries could be attached to the box to eliminate one extension cord, but the added weight is not recommended. The box can be carried to the length

of the extension cords to permit access to the controls while you are monitoring the action of the top and the lay-up of the rope. Turn on the motor and let the action begin. Be aware, however, the bucket with the weight may have to be moved as the rope is formed because it may come all the way up to the top of the table. For a fifty-foot starting setup, ten feet could be lost in the forming of the rope, and this is the equivalent distance the bucket must travel upward.



*Drive end detail with the motor mounted.*



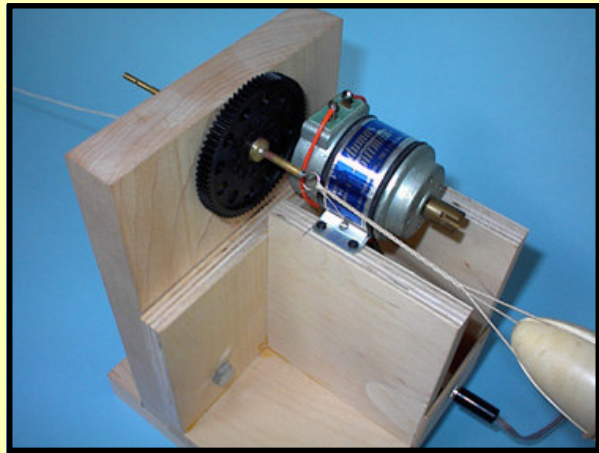
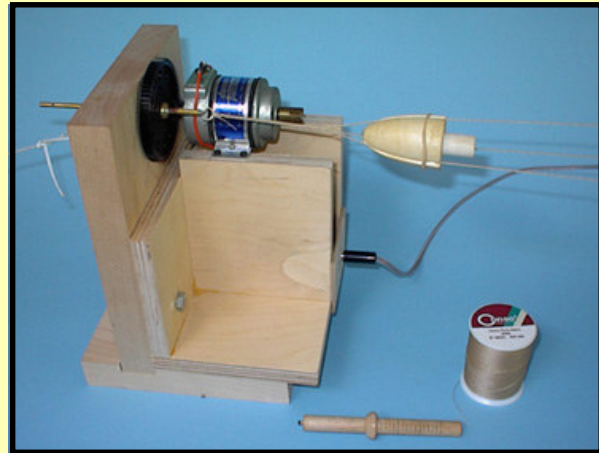
*Wiring diagram for the electric drive motor. This permits access to the controls while monitoring the action of the top and the lay-up of the rope.*

Following extensive use of the ropewalk in preparing for a demonstration at the Nautical Research Guild Conference in San Diego in November 1999, I have found a couple of modifications desirable. One of these modifications, as suggested above, is a motor at the "far or single spindle end" of the ropewalk. This really helps in laying up the rope. I could not find a thrust bearing capable of freely spinning while under the required tension to perform the lay up. (see photo)

A separate speed control was added to the "black box" for this motor so the rpm could be adjusted to coincide with the twisting.

Another improvement is the simple addition of a small rubber band on the top to hold it on the threads while preparing the setup, and in case momentary hand release is necessary during operation. While laying up the rope the top should be held to control the progress of the lay up. When about four inches from the three spindle end (almost finished with the lay up) remove the rubber band. At this time the top can also be removed and the final few inches can be controlled by hand turning the gears and applying proper tension on the rope. After about five "tries" the proper feel for the entire procedure will be achieved. (see photo)

The final item (as shown in the top photo) is the device used to measure the diameter of threads as given in the tables below. This device was constructed by Ken Dorr, former NRG Advertising and Books Manager. It is a dowel around which the thread is wound. Wind sufficient turns to reach 0.1, 0.2, 1/4, 1/2 or more inches. Count the number of turns and then divide by the distance. This is a much more accurate method of measuring thread diameter than using a micrometer, which will crush the thread and give a distorted reading.



You are not restricted to this design or these materials. I have made a test ropewalk from Lego pieces. The toy construction pieces include various size gears that can be purchased separately. The gears do not have the smooth contact like the R/C car gears, but that is not critical. The cost of the r/c gears is really not significant.

The thing that frightens model builders most about ropewalks at first glance is that there are no set rules for the operation. It would seem that the size of thread, the number of strands, and the amount of twisting related to the finished rope size could all be laid out nicely on a

mathematics table. This is not possible due to the many variables involved. While watching the 1,135 foot-long ropewalk at Chatham Dockyard in England I asked an operator if such a table exists. He told me no, they lay the rope based upon experience. That ropewalk has been operating for over one hundred years. After practicing with various thicknesses of thread and various numbers of threads per strand, and after gaining experience with the amount of twist required, you can create and record a set of data for using the ropewalk.

You are now ready to use good material such as linen to lay up the required rope for a model. The model rope laid up on a ropewalk will have an appearance similar to the full-scale rope, and will be much better than large diameter single thread material available in sewing shops. Even the old, out-of-production and highly coveted Cuttyhunk fishing line does not have a nice laid up appearance to it. Most of what I have from several years ago looks squashed and flattened. One caution should be noted. The number of turns in the rope is about half of the full-scale counterpart. In other words, if the full-scale rope has 14 strands per foot, the model rope might have only seven per scale foot. This difference is not noticeable, and is far outweighed by the better appearance. However, when doing splicing, such as an eye splice with this model rope, a three tuck splice will be about twice as long as its counterpart in the full scale rope. This will look odd, and the correction for the scale rope is to take fewer tucks.

The coveted linen line is difficult to find. It is sold in bulk to linen mills, but small bobbins are usually not available. As a decent substitute the polyester, poly/cotton, and some cotton will do, but granted, linen is the best if it can be found in the thinner diameters.

For a detailed discussion on the availability and characteristics of various materials on the market suitable for rigging and for use on a ropewalk see the article "Rigging Material for Ship Model Builder" in the the last issue of The MSB Journal.



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## Ship Replicas

### Eastindianman Amsterdam

The original *Amsterdam* sailed up the North Sea in 1749. In a raging storm the rudder snapped. The master decided to beach the brand-new ship on the south coast of England. Thus he hoped to save the people on board, the cargo and the vessel.

But the East Indiaman soon sank into the mud, never to be freed again. The wreck has provided archaeologists with valuable information about the construction of VOC ships, their cargoes and life on board.

To learn more:  
<http://www.scheepvaartmuseum.nl>



### H.M.S. Bee

H.M.S. *Bee* is a full-scale replica of her namesake and has also received an historic warrant reinstating her as an honorary British Navy ship. At 79' H.M.S. *Bee* is representative of one of the original supply schooners (*Bee*, *Mosquito*, and *Wasp*) that were stationed at the Penetanguishene Naval Establishment from 1817 to 1831.



**Know of a Replica? Let us know and we'll post it here!**  
[mbsjournal@modelshipbuilder.com](mailto:mbsjournal@modelshipbuilder.com)

*The Ship Modeling Forum*  
*Online Modeling Competition - **Winners Circle***

Well, the first Online Modeling Competition at the Ship Modelers Forum is finally over, the votes are in and the winners have been announced. Here they are:



**Scratch & Semi Scratch**

**1st Place**

**USS Zellers DD-777**  
Model Shipwright: Navarone



**Scratch & Semi Scratch**

**2nd Place**

**Benj. F. Packard**  
Model Shipwright: rjcote76248



**Scratch & Semi Scratch**

**2nd Place**

**HMS Queen Elizabeth**  
Model Shipwright: grandad



**Modified Kit & Kit**

**1st Place**

**Agamemnon**

Model Shipwright: grandad



**Modified Kit & Kit**

**2nd Place**

**HMAV Bounty**

Model Shipwright: dhartwick



**Modified Kit & Kit**

**3rd Place**

**Sovereign of the Seas**

Model Shipwright: Ronen



**Small Boat**

**1st Place**

**EV A K**

Model Shipwright: southpolecat



**Small Boat**

**2nd Place**

**Stella**

Model Shipwright: markos



**Small Boat**

**3rd Place**

**Edith F. Todd**

Model Shipwright: rjcote76248



**Honorable Mention**

**Musquidobit**

Model Shipwright: poppatom1948

**Best in Competition**

**Whaleboat II**

Model Shipwright: brian m



To view much better pictures of all these great models go to:

**[www.shipmodeling.net](http://www.shipmodeling.net)**

***Great Job Everyone!***

A special thanks to John Guerin, Capt. of the Ship Modeling Forum and his assistants who helped him out with putting on the competition. I'm sure I speak for all of us when I say, "Job well done" and we look forward to the next competition.

**[www.modelshipbuilder.com](http://www.modelshipbuilder.com)**



## *From The Files of ShipWreck Central*



HMS Hood, the 'Mighty Hood' as she was popularly known in the Royal Navy, was the largest warship in the world on commissioning in 1920 and a symbol of imperial strength throughout the inter-war years. Her sinking in one of the most famous naval engagements in history, against the German battleship Bismarck, has etched itself on Britain's popular memory.

16–21 May: Based on reports that Bismarck was likely to attempt a breakout into the Atlantic, the ship was more-or-less on alert. Strategies were planned and discussed.

22–24 May: At sea with the battleship Prince of Wales, and destroyers Acates, Antelope, Anthony, Echo, Electra and Icarus. The force proceeded to waters off southern Iceland in case Bismarck and the accompanying cruiser Prinz Eugen attempted a breakout into the Atlantic in that vicinity.

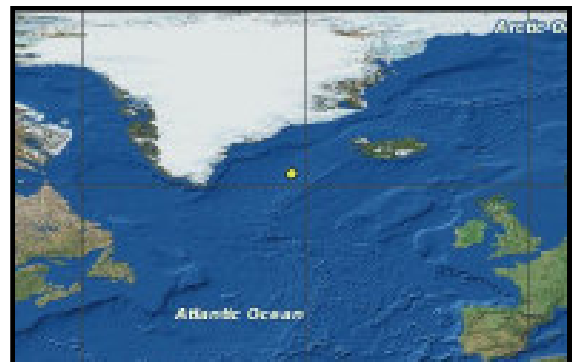
23 May: Bismarck and Prinz Eugen sighted by H.M.S. Suffolk in Denmark Strait.

24 May: Hood sank in the Battle of the Denmark Strait. In the engagement, Hood, Prince of Wales and Bismarck all received damage. At 0600, Hood sank following a catastrophic conflagration/explosion resulting from a deep penetrating hit from Bismarck. Out of a crew of 1,418 only three (Ordinary Signalman Ted Briggs, Midshipman William Dundas and Able Seaman Robert Tilburn) survived. Despite the loss of Hood, the action DID achieve the result of effectively cancelling the German sortie: Though Prinz Eugen escaped, Bismarck was later defeated and sunk with a heavy loss of life. No convoys were lost to either ship.

H.M.S. Hood sank at 0600 hours, 24 May 1941, whilst engaged in battle against the German warships Bismarck and Prinz Eugen. All but 3 of her complement of 1,418 crewmen went down with the ship. It was the single worst Royal Navy ship loss of the Second World War.



**H.M.S. Hood**



**Wreck Site**

Learn more about the ships listed in this article at  
[www.shipwreckcentral.com](http://www.shipwreckcentral.com)  
 Be sure to check out their interactive Ship Wreck Map

## *The Matthew Project*

The Matthew Project is moving right along. In this issue we carry on the build with the shaping of the Hull.

I was hoping that by this issue we'd be able to provide you with more information on how you could get involved in the project.

Unfortunately we're not quite to that point yet. There are still some things that have to be worked out. The bottom line is, we just don't have all the answers we need yet to provide you more information.

I can let you know the following though. When we are ready, there will be a few options open to you if you wish to build this model. First, will be a kit which contains all the components you need to build a Plank on Bulkhead model as we are building here. We have not totally completed our model yet, thus the hold up in being able to provide you more info on this at this point. It's getting close, but there's still a little ways to go.

Next we will be making available a set of detailed plans to allow you to also build this model but based on materials of your choice. Often times modelers have their preferences when it comes to woods, blocks etc, so we have kept that in mind. These plans will not be available until the model is completed. As was mentioned in the last issue, this model is being built based on various factors; the plans of the replica, the actual build of the replica and historical data available as scarce as it is. So, once they are ready, we'll let you know.

I have been working hard, when ever I can find the time, in learning the ins and outs of some discussion forum software. This will be a private members only area where modelers who are involved in the project can come, share ideas, ask questions, access updates, etc.....

Well that's about all I can think of to mention on our updates for The Matthew Project this month.

Be sure to stay tuned in the next issue of the Journal for more information.

Now, on to the next installment of The Matthew Project.....



## *The Matthew Project - Stage 2*

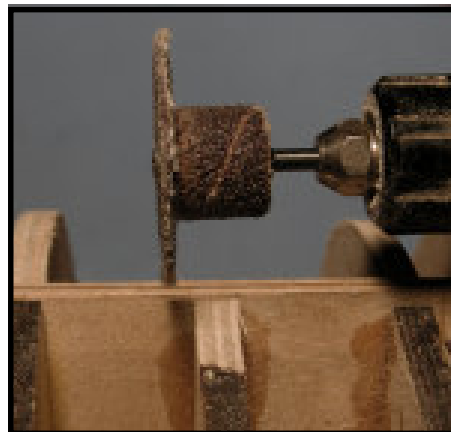
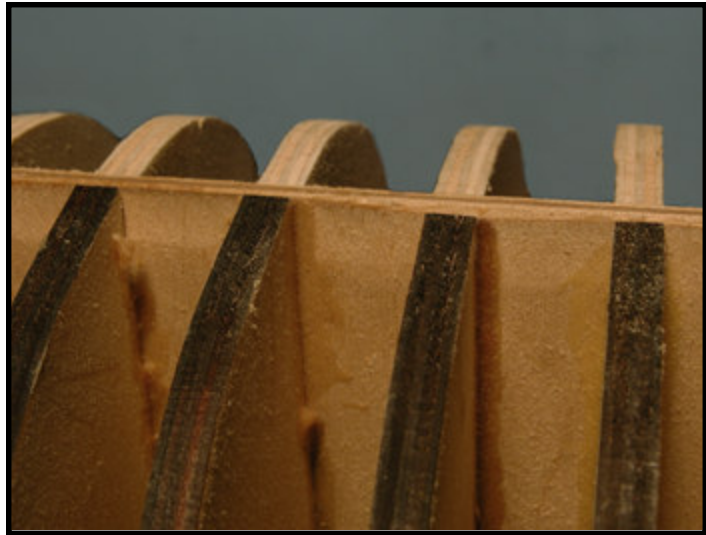
### **Shaping The Hull**



Shaping the hull can be done by hand with a block and sandpaper, however the job is much easier if a sanding disk is used on a Dremel tool. A 60 grit disk will take down the hull quite fast. Shaping the hull begins along the sheer line where the filler blocks are sanded down to the bulkheads. This will create a smooth belt along the hull from bow to stern. The one major concern is the top timbers at the deck line. You do not want to sand the top timbers at this location too thin. Sand a belt about  $\frac{3}{4}$  to 1 inch wide along the blocks making sure you leave enough material on the top timbers.



Once you have a smooth belt running along the hull at the deck level, the next area is along the bottom of the hull. Here you will be sanding in a rabbet. As you can see in the photo the bulkheads extend to the bottom of the center profile piece. Using a sanding disk with the sandpaper extending beyond the edge creates a tool that acts like a saw and enables you to get right against the side of the profile piece. Sand down the bulkheads until they are about 1/16 below the edge of the profile piece. At the bow the bulkheads are sanded down to match the curve of the stem.





Overall shaping of the hull is done with a 60 grit sanding disk. The key here is to use a disk that will span 2 bulkheads. The actual sanding is done between the bulkheads so you touch 2 bulkheads, the back of the forward bulkhead guides the forward edge of the bulkhead next to it. Using the laser char as a guide you can sand an even forward edge along each bulkhead as you work your way to midship. Looking at the laser char notice I am staying below the deck line and about the bottom of the blocks and not sanding the top timbers, this comes later in the final hull shaping.



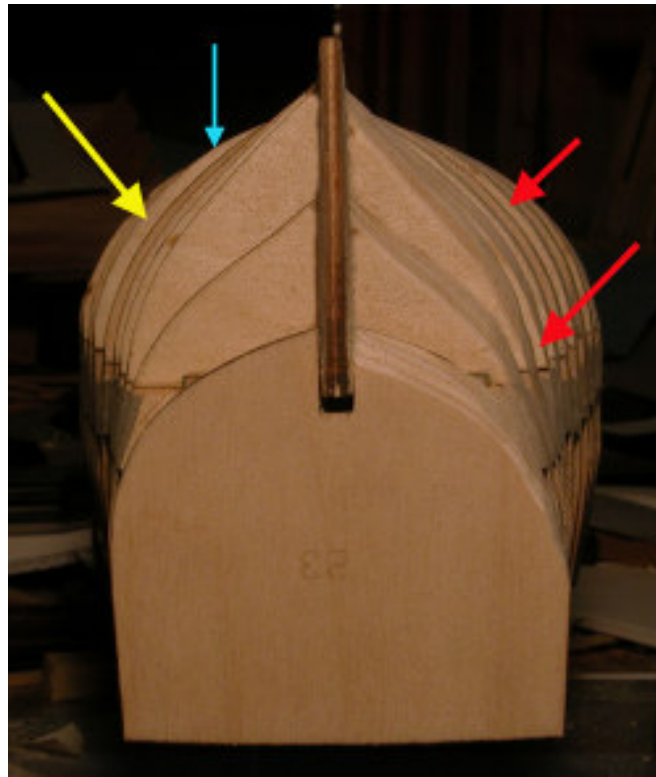
A second tool is a home made sanding sled made from a scrap piece of wood. The ends are rounded so the sled glides over the edges of the bulkheads rather than crashing into them. By using an 80 grit sandpaper fastened to the sled with two-sided masking tape you can begin to give the hull its final shape.



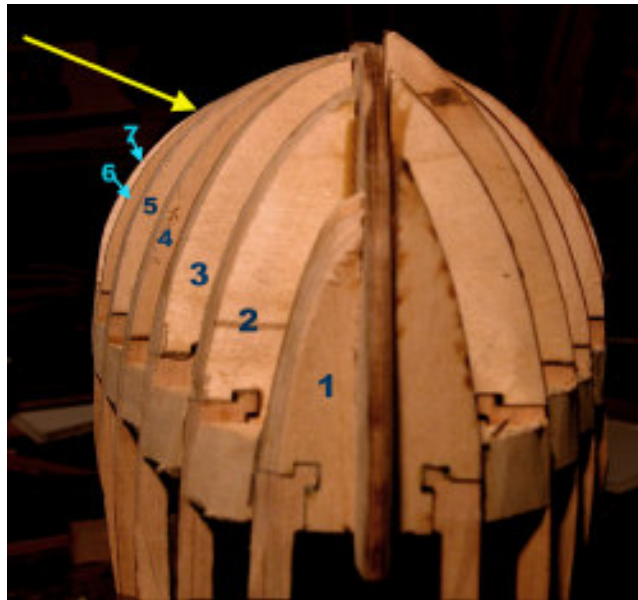
Shaping the hull will be a dusty job and not something you can do on the couch while watching TV. As a matter of fact, an extension cord with a Dremel tool outside is your best bet. As you sand and shape the hull what you are looking for is an even line between the bulkheads as you view the hull from the bow and stern. In many cases where the hull is built from only a few bulkheads spaced far apart you can not get a true feel for the shape of the hull. A nice planking job depends on the structure it will be fastened to. Whether you are building a plank-on-frame or a plank-on-bulkhead hull, planking with no bulges or dips depend on the beveling to form a smooth transition from one frame or bulkhead to the next.

Looking at the stern view on the next page you can see the bulkhead with the yellow arrow. First of all the space is far too wide when compared to the space between the four bulkheads in front of it. Secondly the bulkhead has a bulge shown by the blue arrow. This bulge blocks out the bulkheads behind it. So it is necessary to grind down this area until it blends into the hull shape. Looking to the right side of the hull the shape is becoming a little more refined. The red arrows show areas where the hull has to be sanded. What you are looking for is a nice even transition from bulkhead to bulkhead

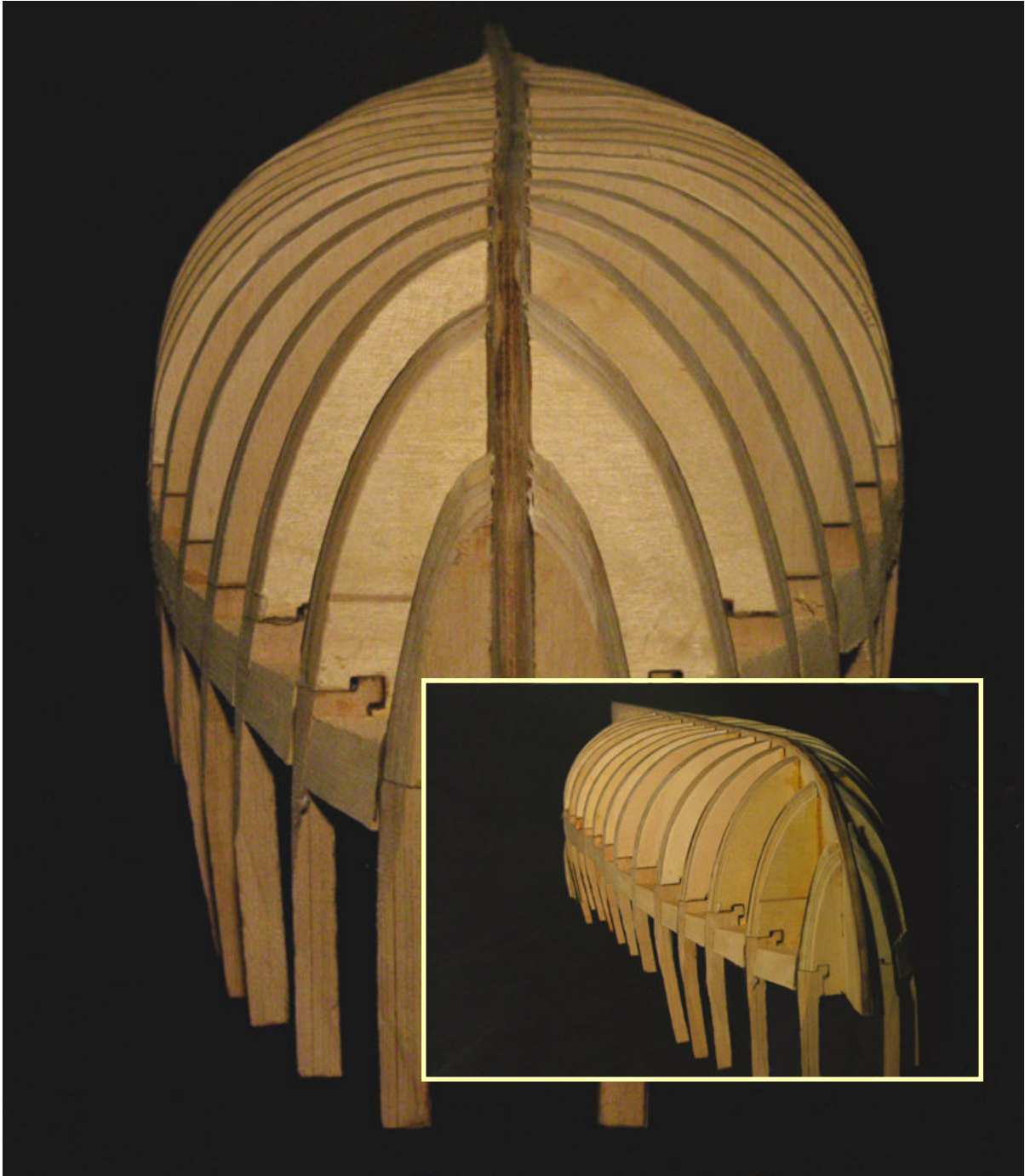




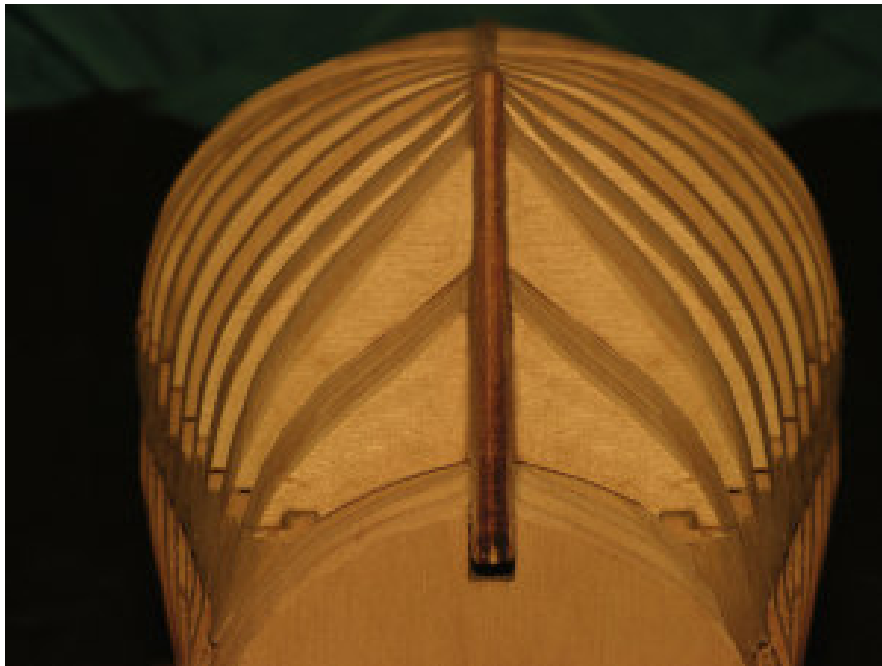
In this photo to the right, sanding and shaping has not been started and the unevenness of the hull is quite clear. On the left side the rabbet has been sanded in and the first shaping has been done. The yellow arrow points to an area where bulkheads 3,4,5 are too full, you should be able to see bulkheads 6 and 7 all the way to the center profile piece. More sanding is needed before we can call this done.



The next picture is the finished shape of the hull; each bulkhead has a smooth transition from one to the next. A well shaped hull is necessary for the planking to have enough surface to be attached to and also the planks will have to lay flat to the hull. Looking down the side of the hull you can see how the stern will take on the characteristic rounded shape.



The best way to shape a hull is to stop sanding every once in a while and view the hull from all angles. The midship remains pretty constant and it's a matter of blending in the bow and stern. Once you have a smooth shape you can continue to shape the hull by making the hull a little sharper or fuller. Even in the time these ships were built the hull shape varied from one shipyard and ship builder to the next.

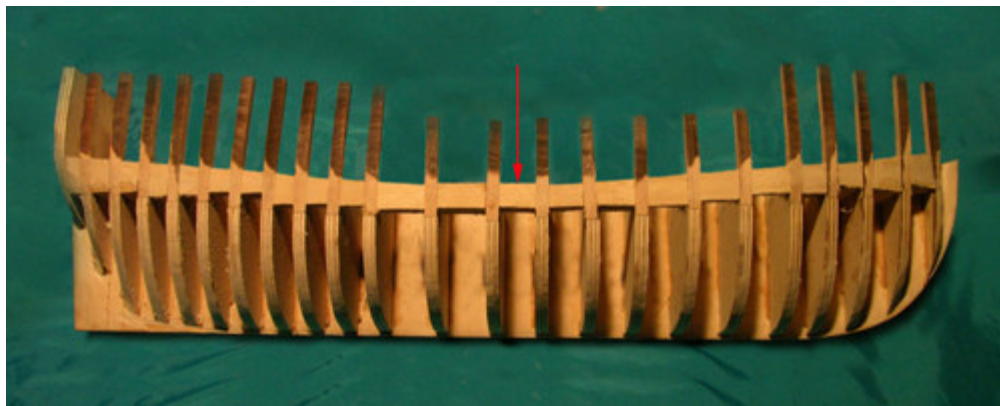


With the bottom of the hull shaped we will now use a sanding disk on a long shaft to sand the filler blocks and bevel the tops of the bulwarks. With a 2 inch disk you can get right up to the top timbers. Getting between the top timbers is difficult even with a very small sanding disk so removing the extra material is done with a knife. The wood used is soft and its easy to cut away the excess between the top timbers.



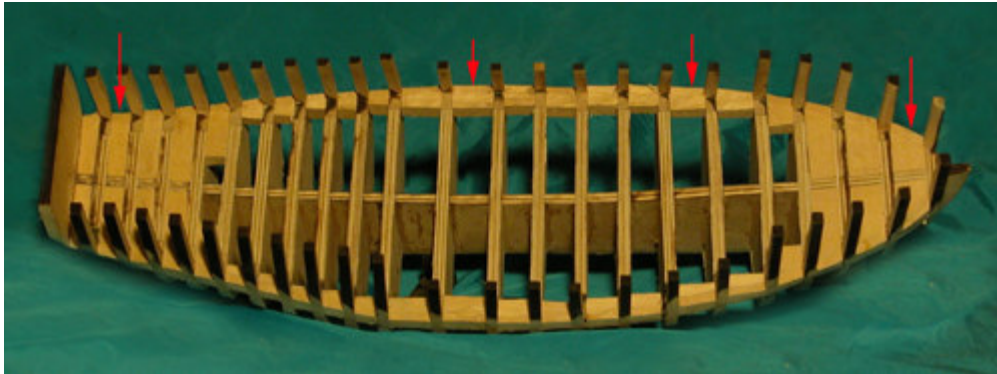


The deck has a pronounced sheer and also a curve from side to side. Use the tops of the bulkheads as a guide and sand the blocks level with the bulkheads. With the blocks sanded down level, lightly sand off the laser char across the rest of the bulkhead. Be careful to maintain the curve of the deck and don't sand the bulkhead tops flat.





Finally the bottom section of the hull has been shaped to our satisfaction and the deck is finished being sanded. Notice the top timbers still have not been sanded. Shaping of the hull stopped at the deck level and finishing of the top timbers will come after the deck and inside have been sanded. The red arrow is pointing to the sheer line. This is the curve the outside planking will follow.



This now ends stage two of the Matthew build, in part 3 a waterway will be added along with the keel, stem and sternpost. Also the top timbers will be completed.

### ***A little Humor***

The following is, purportedly, the transcript of an ACTUAL radio conversation between a United States' naval ship and Canadian authorities off the coast of Newfoundland.

**Canadians:** Please divert your course 15 degrees to the South to avoid a collision.

**Americans:** Recommend you divert your course 15 degrees to the North to avoid a collision.

**Canadians:** Negative. You will have to divert your course 15 degrees to the South to avoid a collision.

**Americans:** This is the Captain of a US Navy ship. I say again, divert YOUR course.

**Canadians:** No. I say again, YOU divert YOUR course.

**Americans:** This is the Aircraft Carrier USS Lincoln, the second largest ship in the United States' Atlantic fleet. We are accompanied by three destroyers, three cruisers, and numerous support vessels. I demand that you change your course 15 degrees north. I SAY AGAIN, that is one five degrees north, or counter measures will be undertaken to ensure the safety of this ship.

**Canadians:** This is a lighthouse, SIR. It's YOUR call.



# ***Building The Bluenose IV*** ***"The Beginning"***

By Michael J Brown

## **Background**

In a previous issue, Winston mentioned that a Nova Scotian shipyard had been selected to build the Bluenose III. Starting with this issue, he has asked me to write a regular column to keep our readers up to date on the progress of the Bluenose construction.

First of all, some background. There is some controversy over the construction of this vessel by Joan Rou  , the great-granddaughter of the original Bluenose designer, William J. Rou  . Nova Scotia tourism officials apparently question the need or desirability of replacing the existing Bluenose II, arguing that the current vessel "will be seaworthy for a good many years"<sup>i</sup> (even though she was already retired once in 1994 and never expected to sail again). The Province of Nova Scotia also owns the trademarks "Bluenose", "Bluenose II" and "Bluenose III", and are concerned that there might be some confusion with having two similarly-named vessels at sea at the same time and serving similar roles<sup>ii</sup>.

Joan Rou  , however, firmly believes that if the schooner is not built now, it may never be built, or at least not by Canadians. Wooden ship building skills are deteriorating or disappearing, with few shipwrights remaining who have the skills to successfully undertake a project of this magnitude. Further, the Province does not have a contingency plan should the Bluenose II be severely damaged, or even lost. If this were to happen (keeping in mind the Cutty Sark fire earlier this year) then, without Joan's initiative, the legacy of the Bluenose would be at risk of being lost forever.

In line with her convictions, on 30 August 2006 Joan formed a company, Queen of the North Atlantic Enterprises (QNAE), to build the Bluenose IV. She also announced<sup>iii</sup> that the schooner would be built by Snyder's Shipyard in Dayspring, Lunenburg County, NS, using the original design by William J. Rou  . The keel is scheduled to be laid down on 1 July 2008 and launching is scheduled for 24 July 2010. In the words of the builders "This new Bluenose replica is to be a historically accurate world-class working vessel, a self-sufficient operation capable of traveling globally promoting her legacy, and her home."<sup>iv</sup>

## **The Shipyard**

Since construction on the schooner will not actually start until next year, the next few issues will focus on the shipyard, the designer, the people behind the project, and all those myriad of details required to prepare for actual construction.

Snyder's Shipyard first came into being in 1876 as Leary's Shipyard. In 1944, it was purchased by Reginald "Teddy" Snyder, who changed the name to what it is today. Snyder's Shipyard, many of whose shipwrights are second and third generation in their trade, did the repairs required to bring the Bluenose II out of what was expected to be permanent retirement and back to being the ultimate Canadian sailing icon. Two of Snyder's current shipwrights, Brian and Gary Hirtle, are sons of one of the shipwrights who built the Bluenose II. Brian is also a model ship builder, and has been a member of the South Shore Ship Modeller's Guild since 1998.

Snyder's has already started building the infrastructure required for a project of this magnitude (don't forget, the Bluenose is 112' at the waterline). Figure 1 (below left) shows the 90'x32' lofting platform that will be used for laying out the schooner's lines, while Figure 2 (below right) shows the beautiful site along the LeHave River where the new construction building for the Bluenose will be built after her keel has been laid.



**Fig.1** Lofting Platform  
(note Bluenose Sloop in Background)



**Fig.2** Future Construction Site

## The Plans

One of the most interesting and critical items in building either a ship and a model is, of course, the plans. Vernon Shea, noted as "one of a handful of marine draughtsmen left in the province of Nova Scotia that does his work by hand," is drawing up the plans for the Bluenose IV. The Bluenose IV is being designed using the original lines, although, as a sail training and day charter vessel, she will be built to current commercial standards.

Queen of the North Atlantic Enterprises has posted two of Vernon Shea's drawings on their website (see figure 3 & figure 4 next page) and is offering a high quality poster of the schooner's general arrangement (Figure 4) for \$35.00 (P&H in North America included). To reserve a copy, send an e-mail to [admin@schoonerbluenose.ca](mailto:admin@schoonerbluenose.ca); including your name, contact email address and phone number.

### Dates in American Naval History

10 November 1775 - Congress votes to raise two battalions of Continental Marines, thus establishing the Marine Corps.

13 November 1776 - Captain John Paul Jones in *Alfred* with brig *Providence* captures British transport *Mellish*, carrying winter uniforms later used by Washington's troops.

18 November 1890 - *USS Maine*, first American Battleship, is launched



## Modelling the Bluenose

QNAE is developing a set of plans specifically with model builders in mind. These will be the first ever official model plans, based on William Roué's original plans and modified as necessary to reflect the schooner as built. Vernon Shea is doing a lot of research to ensure the drawings' accuracy and will also be doing the drawings himself. These plans are expected to be available at the end of 2007. Further details will be provided when known.

## The Way Ahead

This series of articles will track the construction of the Bluenose IV over the next 2-3 years. As with all ship building, both models and real, there will be periods of intense activity followed by periods of slow progress. However, I will attempt to provide new and fresh material each month between now and her first day at sea. Next month, I will be profiling the people behind this project – Joan Roué, Vernon Shea, some of the shipwrights doing the work, and others. The following month, I expect to show you just what goes into drawing the plans for a 1:1 model.

### The Bluenose Sloop

Those interested in following this construction might also be interested in reviewing the construction of the Bluenose Sloop, also being built by Snyder's Shipyard.

The Bluenose Sloop will be a 23' 5" day sailor. It is based on a series of very popular sloops built over the period 1945 to 1972.

The original sloops were designed by William J. Roué, based on the Bluenose lines.

Further historical details and design facts are available on the WJ Roué website. These sloops will be available for purchase from Snyder's Shipyards.



*To the left we can see the lines for the sloop being laid out in the Bluenose IV lofting shed.*

*As you can see in the picture on the right the sloop is really just a 1:1 scale model.*



You can get the plans to build a smaller model of the Bluenose Sloop by sending an e-mail to [admin@wjroue.com](mailto:admin@wjroue.com). In my opinion, this sloop would make a very interesting, but relatively simple, scratch built model.

## Grog

by Gene Bodnar

Everybody knows that grog is a mixture of plain water and rum, a sort of watered-down drink doled out to British sailors from time immemorial, but few of us have any idea as to where the term "grog" originated.

A poem written by Thomas Trotter in 1781 tells about the naming of grog:



A mighty bowl on deck he drew,  
And filled it to the brink;  
Such drank the Burford's gallant crew,  
And such the gods shall drink,  
The sacred robe which Vernon wore  
Was drenched within the same;  
And hence his virtues guard our shore,  
And Grog derives its name.

This ditty was written 41 years after the actual creation of the term "grog." In 1740, British Admiral Edward Vernon, who was commander-in-chief of the West Indies, ordered that the daily ration of rum for his sailors be cut with water. Admiral Vernon always wore a grogram coat, which was a coarse, loosely woven fabric of silk and mohair. Because of the coat he continuously wore, his men nicknamed him "Old Grog." Of course, his men could have mutinied when he cut out their full ration of rum, but they didn't. Instead, they called the new drink "grog" after the admiral. They must have been fond of him.

Since that time, grog has been issued regularly to all sailors in the British Navy. Originally, sailors received a quarter of a pint, twice daily, along with a pint of water. As time passed, this ration was reduced to one issue per day in 1824, and finally to a half-gill a day in 1850. Officers in the British Navy were completely cut off from grog rations in 1881. Warrant officers were cut off in 1918. Finally, grog rations to all ratings ended on July 31, 1970.

The distribution of rum was once quite a ritual in the British Navy. At 11 a.m. the boatswain's mate would pipe "Up spirits." The ship's cooper and a detachment of Royal Marines would proceed to unlock the spirit room. Two marines would lift the keg to the deck. In single file, a group of cooks from the petty officers' messes would hold out their mugs while the sergeant of marines poured out the ration under the direction of the chief steward. The rest of the rum was mixed in a large tub with two parts water, which became the grog served to the ratings.

One of the reasons for the continual reduction in grog rations over time was the fact that sailors would frequently save up their rum rations for several days, then drink them all at once.



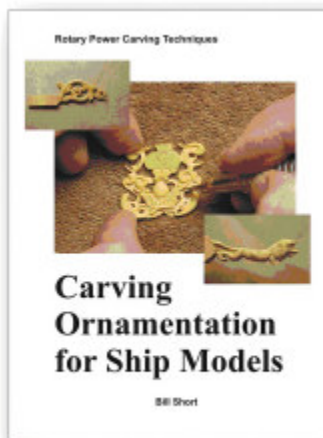
The practice of serving a grog ration twice a day was adopted by the Continental Navy by Robert Smith, who was then Secretary of the Navy. He experimented with substituting rye whiskey for the rum. American sailors liked it so much that Smith made the change permanent. Thus, "grog" became known as "Bob Smith" in the American Navy.

Would you like to taste an authentic ration of grog to see what it was like? You can make your own. Remember to serve it at room temperature – they had no ice cubes aboard sailing ships of old. The Royal Navy probably didn't spend a lot of money on rum, so make sure you buy the cheapest, nastiest rum you can find. Then add four parts tap water. You might not keep your friends around very long, but at least you can say you tried grogg

## Rotary Power Carving Techniques

by Bill Short

### Carving Ornamentation for Ship Models



A spiral bound booklet with an acetate cover, stiff board back, full colour cover page and the rest of the 52 pages are printed in black and white with high quality photos on 70# Hammermill paper. It will lie flat on your bench and can be folded over on itself to a one page size.

The booklet, which covers in detail, carving with rotary tools and dental burrs, is available for immediate shipment. It is 52 pages and has over 50 high definition digital photographs detailing the step-by-step carving lessons in both bas-relief and carving-in-the-round.

The selling price of the booklet including air mail postage and handling is:

Destinations in the USA and Canada \$30.00 US Funds  
Destinations in the UK and overseas: \$36.00 US Funds

\*Prices effective July 1, 2007

#### Table of Contents

- Introduction
- Chapter 1 The tools available to rotary carve
- Chapter 2 Wood selection for carving ornamentation
- Chapter 3 Visualization
- Chapter 4 How to rotary carve
- Chapter 5 Carving complex shapes
- Chapter 6 Finishing the carving
- Chapter 7 Safety Considerations
- Bibliography
- Index

Now also includes a bibliography of very good reference books on ornamentation which covers the methods used in carving several of the complex carvings found on my model of The Sovereign of The Seas.

Payment must be in the form of a US Money Order or International money order in US dollars. As I am not a business, my bank cannot handle personal checks in other currencies, or other forms of payment. As you already know, it is not advisable to send cash in the mail for obvious reasons.

Mail your payment at your convenience to:

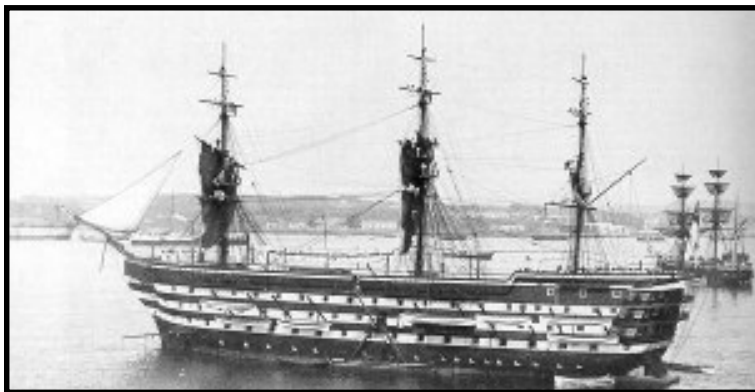
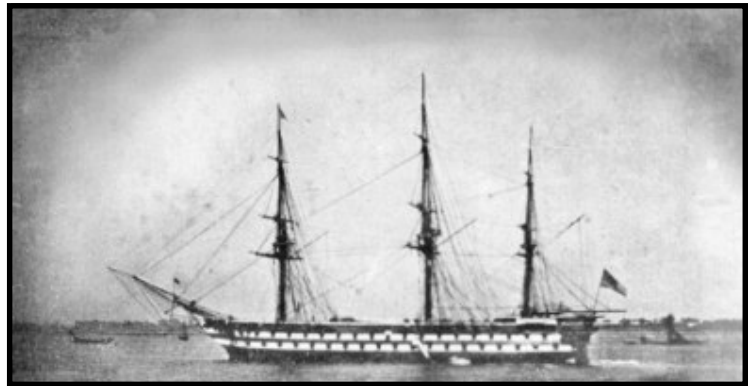
Bill Short  
3 Karsam Court, SS1,  
Niagara-on-the-Lake, Ontario  
L0S 1J0  
Canada

For more information email:  
modelshipwright@sympatico.ca

## *Ships From The Past*

### **HMS Duncan**

The Duncan was a 1st Rate Ship-of-the-line built in 1859, and the third to bear that name. Her armament consisted of 38 x 8" guns and 62 x 32pdr. She was renamed Pembroke in 1889.



### **HMS Howe**

Howe was a screw Royal Navy 110-gun 1st rate ship of the line, named after Admiral Richard Howe. Howe was launched 13th March 1860, renamed Bulwark, and then renamed Impregnable 27th September 1886. Howe was sold in 1921

### **USS Crusader**

a 545-ton (burden) wooden screw gunboat, built at Murfreesboro, North Carolina in 1858 as the civilian steamship Southern Star. She was chartered by the Navy in October of that year to take part in a punitive expedition to Paraguay. Commissioned as USS Southern Star, she operated in South American waters during the first three months of 1859, then returned to the United States. The Navy purchased the steamer at about that time and changed her name to Crusader.



## Contributor's Pictures

Send your pictures to [msbjournal@modelshipbuilder.com](mailto:msbjournal@modelshipbuilder.com)

*First this month are some pictures from Tom Eagles. At first I was just going to post some pictures but Tom provided such an interesting story on the build I couldn't help but include it here.*



**Trinity E.**

"... when I moved to SC I started to build an elevated 7/8N2 Steam powered Outdoor RR, in an L shaped design, point to point or better said "Turntable to Turntable" about 180' in length. I was trying to do a nice looking job of it so as not to create an eyesore in my neighborhood.

Without any warning or due process I was served with a "Court ordered Cease & Desist Notice" at the behest of the dreaded Home Owners Association.

When questioned they said they found an Outdoor Steam RR to be an "Attractive Nuisance."

Well after being in a foul state of mind for a few weeks I approached them to see if I could use the (3) Lakes or mud ponds that the subdivision I live in is named after, for model steamboating (steam one way or another!)

After meeting with them they said yes as

that was a much more gentlemanly pursuit and I could use the ponds. So I guess that makes me somewhat of a "gentleman" now?

Well being part Irish and part "Bull" in a China shop I rushed out to build a steam boat in my usual "haste makes waste mode".

I found a set of plans in the August/October 1997 issue of Garden Railway and off we went.

If I would have not been in such a hurry "Cart before the Horse!" I would have done some research and Prior Planning to Prevent PI-- Poor Performance.

When the hull was done it was determined that there was not enough room for all the machinery in the deck house area and that I would have to encroach on the area of the Pilot House.



I contacted the preparer of the plans Mr. Ted Stinson, since they were originally 1" = 1' and designed for an electric (battery) powered electric motor and (2) channel RC I asked him about the problem.

He allowed that he cut out a few feet to fit the pages of "GR". After contacting Mr. Pete

Barney a well known Maine SR&RL's RR and area historian/specialist, he supplied me with some pictures of the original steam boat the "Rangeley". After showing the pictures and plans to a friend who was a



**Rangeley**

Naval Architect we saw that he had cut out about 50' or more, the whole engine room and half of the deck house; and so what I have is a caricature, not a true model, of the "Rangeley" now named "Trinity E" after my Granddaughter.

She steams well, not to fast but with a lot of power; and at one steamup she was

described as "Stately & Majestic" as she chug-a-chugged along. I have learned a lot in the building of her.

- 1, Do your research
- 2, Plan and have all your parts or templates of them ahead of time (as you lay it out)
- 3, Take your time building your boat, if something it is not correct do it over.

I belong to the South East Boat Modelers Assoc. of Snellsville, GA. we have an old Black gentleman (96YO) in the club a WWII Navy Veteran who was sunk on (3) different destroyers in the Pacific he was a Steward with the collateral duty of loader on a Quad 40mm gun. He is one hell of a scale model builder; and on his 5th wife she is (56YO) he told he felt she was a keeper, what a character! He came to me one day at a meeting and told me to do my boat right, slow down the water isn't going away. "It is the journey not the destination when building a model boat, the water is not going away, take your time and do it right". That was good advice!

---

*Here are some pictures of Tom's "Trinity E."*









Next are some pictures from Janos (John) Nemeth



Grosse Yacht: scratch built some 30+ years ago and re-planked now. POB, planks walnut, decks Tanganyica. Decorations: mostly carved, from pear wood. I used some Amati scrolls which are going to be replaced by hand carved scrolls later. Guns and spars have yet to be installed and some rigging is still on its way.



Duyfken: scratch built 1:40, using mostly Southern Myrtle. Plank on bulkhead, single layer planking, following the Dutch planking and scarphing method. Decks: lime wood, again following the Dutch way building the waterways. Rudder and whipstaff 'working'. Decorations nearly exclusively self made, I used just a few commercially available items (gun barrels, flags, belaying pins). A section of the poop deck had been left without planks to show some interior. I am about to replace some carved decorations with better ones (lion etc). I seem to be able to acquire some better quality wood (pear, boxwood) just now.

## *What Ship is This????*

Know your ships? Here's a little trivia for you. Send your guesses to [msbjournal@modelshipbuilder.com](mailto:msbjournal@modelshipbuilder.com) and check back in the next issue to see if you were right!



The ship in the background is HMCS Protecteur. What is the ship in the foreground?



**Last Issue** - (16 people were able to name this ship)

HMCS SAGUENAY survived both a torpedoing by an Italian submarine in 1940 and a collision with a merchantman off Cape Race in 1942. In the collision her depth charges were set off, and most of her stern was blown away. After this, she could never be repaired well enough for sea duty, and she spent the rest of the war as a training ship at Cornwallis, NS.

### **Model Ship Forums**

Join a modeling community today!

**Ship Model Forum** - [www.shipmodeling.net](http://www.shipmodeling.net)

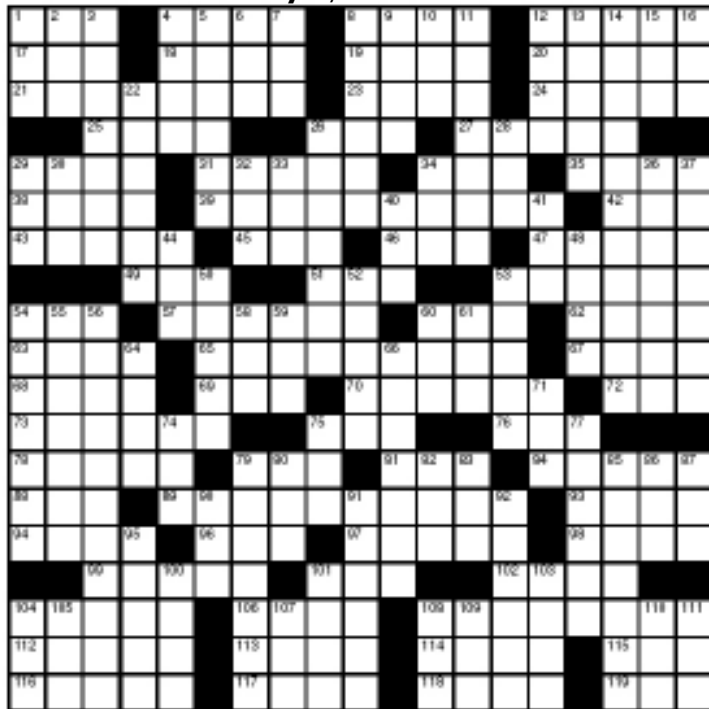
**Model Ship World** - [www.modelshipworld.com](http://www.modelshipworld.com)

**DryDock Models** - [www.drydockmodels.com](http://www.drydockmodels.com)

**Model Boat Mayhem** - [www.modelboatmayhem.co.uk](http://www.modelboatmayhem.co.uk)

**Lauck Street Shipyard Forum** - [www.lauckstreetshipyard.com](http://www.lauckstreetshipyard.com)

**Aboard HMS Victory** by Gene Bodnar



**Across**

- 1 Spider's construction
- 4 Make a go of it
- 8 Sonar pulse
- 12 Neutral middle vowel
- 17 Mature
- 18 Prophetic sign
- 19 Region
- 20 Sticks one's nose where it doesn't belong
- 21 Grabbies, on HMS Victory
- 23 Time that a day begins on HMS Victory
- 24 Corrodes, as steel
- 25 Defoe's \_\_\_ Flanders
- 26 Enthusiastic admirer
- 27 Merrier
- 29 Sleep like \_\_\_
- 31 \_\_\_ Downs (where the Derby racehorse is run)
- 34 Hooting bird
- 35 Kind of bean
- 38 Number of commissioned officers aboard HMS Victory
- 39 He slept in a coffin-like cot aboard HMS Victory
- 42 Hair styling cream
- 43 Essential oil from flowers
- 45 "\_\_\_ always something!"
- 46 Hog's home
- 47 Gaelic alphabet
- 49 British dominion over India
- 51 Flower necklace
- 53 Capri's "Blue \_\_\_"
- 54 Writer John \_\_\_ Passos
- 57 Makes rugs
- 60 Extinct bird of New Zealand
- 62 Prostrated
- 63 Made a laborious living
- 65 Punishable offense aboard HMS Victory, except for the cook\*
- 67 One of the Flintstones
- 68 Good-bye, in Italia
- 69 Sigmoid
- 70 Astronaut Collins
- 72 Sra., in Boston
- 73 Of an anatomical cavity
- 75 Ornamental vase
- 76 Droop
- 78 Of the nose
- 79 Adjust a spark plug
- 81 Greek vowel
- 84 Nocturnal critter of South America
- 88 Number of masts on a schooner
- 89 What could be expected if the crew was assembled on the quarterdeck at 11 a.m.
- 93 Fashion
- 94 Free from danger
- 96 Regrettable

- 97 Site of a World War II conference
- 98 Indistinct form
- 99 Pixies
- 101 Beige
- 102 Trust
- 104 Theater production
- 106 Nelson said he was the "greatest sea officer I ever knew"
- 108 Term for maggots, aboard HMS Victory
- 112 Artist's tripod
- 113 Brink
- 114 Mental concept
- 115 Cenozoic \_\_\_
- 116 "Guess \_\_\_ I've been"
- 117 Caspian and Dead
- 118 Mary Lincoln's maiden name
- 119 Ten-percenter, for short
- 48 Arnie's game
- 50 Diamond, for one
- 52 Organic compound
- 53 Tokens of challenge
- 54 Pours, as wine
- 55 Largest of the Ryukyu Islands
- 56 Latrines, aboard HMS Victory
- 58 Expressions of bliss
- 59 Parisian face
- 60 Wire measure
- 61 Single
- 64 Maar who posed for Picasso
- 66 Public utility electrician
- 71 "Unforgettable" singer Cole
- 74 Grossglockner, for one
- 75 Optimistic attitudes
- 77 Take a chance
- 79 Grinds, as the teeth

**Down**

- 1 Existed
- 2 Conscious self
- 3 "The Championship Track," in horse racing
- 4 Wind into loops
- 5 Beaten egg dish
- 6 \_\_\_ capita
- 7 Printer's measures
- 8 Stiff straw hat
- 9 Magnetic metal
- 10 \_\_\_-Platonism
- 11 Entrance in a ship's side
- 12 Agile
- 13 Monsarrat's The \_\_\_ Sea
- 14 What Nelson lost at the Battle of Santa Cruz
- 15 Saturated
- 16 Donkey's kin
- 22 Corner of a page turned down
- 26 Forward upper decks, for short
- 28 \_\_\_ Baba
- 29 Literary collection
- 30 Illuminated
- 32 Letter after upsilon
- 33 Hardened
- 34 New York Giants hero Mel
- 36 More substantive
- 37 Oval-shaped nuts
- 40 Letter after chi
- 41 Neither's partner
- 44 Unprocessed
- 80 Helping hand
- 82 \_\_\_ Aviv
- 83 Colonial insect
- 85 Naturally occurring synthetic
- 86 Bachelor's last words
- 87 "Johnny \_\_\_" (Confederate soldier)
- 90 Consumption
- 91 Group of stars in Taurus
- 92 Covered with thick black liquid
- 95 Fudd of the comics
- 100 Valley
- 101 Forum wear
- 103 Shout of amazement
- 104 Water droplets on grass
- 105 "Go team!"
- 107 Pindaric specialty
- 108 Seized with the teeth
- 109 Much \_\_\_ About Nothing
- 110 Before, in poetry
- 111 Snooze

\*The cook was allowed to do this so he wouldn't spit in the food while cooking it.

**Aboard HMS Victory Answers**

W	E	B		C	O	P	E		P	I	N	G		S	C	H	W	A
A	G	E		O	M	E	N		A	R	E	A		P	R	I	E	S
S	O	L	D	I	E	R	S		N	O	O	N		R	U	S	T	S
				M	O	L	L			F	A	N		G	A	Y	E	R
A	L	O	G		E	P	S	O	M		O	W	L		L	I	M	A
N	I	N	E		T	H	E	C	A	P	T	A	I	N		G	E	L
A	T	T	A	R		I	T	S		S	T	Y		O	G	H	A	M
				R	A	J				L	E	I		G	R	O	T	T
D	O	S		W	E	A	V	E	S		M	O	A		L	A	I	N
E	K	E	D		W	H	I	S	T	L	I	N	G		F	R	E	D
C	I	A	O		E	S	S		E	I	L	E	E	N		M	R	S
A	N	T	R	A	L			U	R	N			S	A	G			
N	A	S	A	L		G	A	P		E	T	A		T	A	P	I	R
T	W	O		P	U	N	I	S	H	M	E	N	T		M	O	D	E
S	A	F	E		S	A	D		Y	A	L	T	A		B	L	O	B
				E	L	V	E	S		T	A	N		R	E	L	Y	
D	R	A	M	A		H	O	O	D		B	A	R	G	E	M	E	N
E	A	S	E	L		E	D	G	E		I	D	E	A		E	R	A
W	H	E	R	E		S	E	A	S		T	O	D	D		R	E	P