



Warships to Workboats

A Joint Publication of the Modelshipwrights and Warrior Groups



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2004

The Whiskey Strake

The days are longer, the nights are shorter, and the outdoors beckons. This time of year, many people find that modeling loses out to the siren song of the season - the 1:1 boat, whether sailed on or simply seen, seems a lot more attractive than the 1:48 model right now.

Well, we'll try to lure you back into the model shipyard with an issue loaded with modeling information.

This time around, Phil Krol lets you in on the secrets of silver brazing, and demystifies the process of miniature metalworking. Wayne Drusch shows you a great way to carve those tricky filler blocks for plank on bulkhead models, and Russ Barnes lays out the ways you can do basic research for your models. We have a couple of reviews of some outstanding books, and a look at a simple kit which became a not-quite-so-simple model.

The piece de resistance, however, may be David Antscherl's tale of the Battle of the Fuzzy Bits. David tells all on page 6.

As always, we want to express our sincere gratitude to WorldNet Communications, for providing the server space for this magazine and the websites of our parent groups, Modelshipwrights and the Warrior Group. Their generosity and dedication to ship modeling makes possible a wealth of information for our community.

Thanks also to our contributors. Without them, there is no *Warships to Workboats*. If you don't see your name listed among them, well, maybe it's time to send us a tip, a review or an article.

-The Editor

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Does not follow instructions:

Confessions of a Kit Builder

-by Tom Babbin

The box illustration

In the first place, this was not supposed to be a long term relationship. I wanted a short-term fling, but I was committed to my dear *Sultana*. Sure, I was cheating on her, but I'd be back soon. Real soon.

I had a couple of weeks scheduled on Cape Cod, and a Mini Mamoli® kit of *Bluenose*, so it made sense to put aside the larger model and take the smaller kit and those tools I could carry easily, and hit the road. I could see by the box illustration that I would have to do a bit of bashing to have anything approaching the real ship, but I expect that with kits. Why, Mamoli even says "With little changes and additions of more quibbled materials, it is possible to realize models with good level of characteristics." Well, I had my more quibbled materials with me, and darnit, I was going to realize a good level of characteristics.

On opening the box and perusing the instructions, I was immediately struck by the radical design that made *Bluenose* such a fine racing schooner - she had no keel! No, wait a second. According to L. B. Jenson, in his classic *Bluenose II Saga of the Great Fishing Schooners*, she had a very graceful keel. Time to get out the quibbled materials. Using Jenson and some scrap basswood, I was able to create a reasonable approximation of *Bluenose*'s powerful hull.



The kit hull and added keel and rudder. Note that the transom angle is incorrect - this was fixed after the picture was taken.

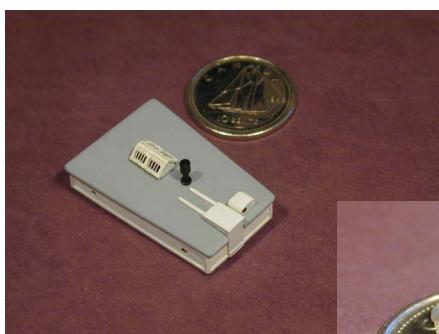
On to the deck. I took out the decking material provided. Nice 1/8" wide stock. Based on the scale of 1:192 (which is nothing like the 1:160 the box promised), that works out to 4' wide deck planks. Back to the quibbled materials box. I had some 1/32" basswood that would equal 6" wide planks, and using narrow strips, I could match the curved pattern of the original planking as it was laid around the cabin on the real schooner. As I planned out the decking and waterways, I also looked ahead to the bulwarks. The kit calls for strips stuck to the outside of the hull and sanded smooth to the hull. I decided to be a bit more elegant, so I left a 1/48" rebate between the edge of the waterways and the edge of the carved hull to hold the basswood bulwarks.



The aft planking showing the cutout for the cabin

The materials and plans for the cabins, scuttles and hatches were grossly out of scale, so I fashioned them from basswood and wire. The kit also provided some generic parts for the wheel and windlass, which I discarded.

The new wheel was fashioned from a slice of brass telescoping tubing, filed and sanded to a thin



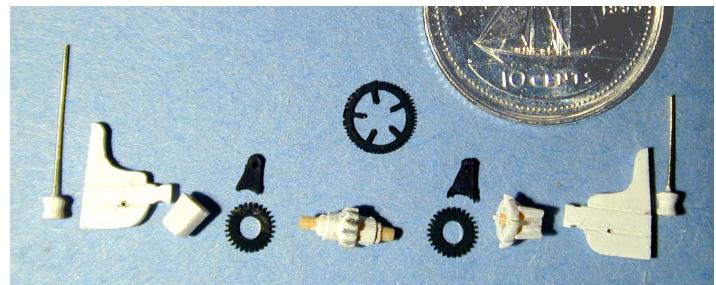
The cabin

rim. 8 wires fastened with CA glue formed the spokes, and the hub was a piece of bamboo skewer run through a drawplate.



The wheel and steering box

The windlass began life as a square toothpick which was chucked into a cordless Dremel rotary tool and worked to shape with needle files. The right and left barrel were finished separately from the center section, and pinned together to make the complete barrel. The cogs for the pawl were carved using jeweler's files. The small gears for the donkey engine drive and pump ratchets are watch gears, and details for the whelps were made from pieces of styrene.



The windlass in pieces...



...and assembled

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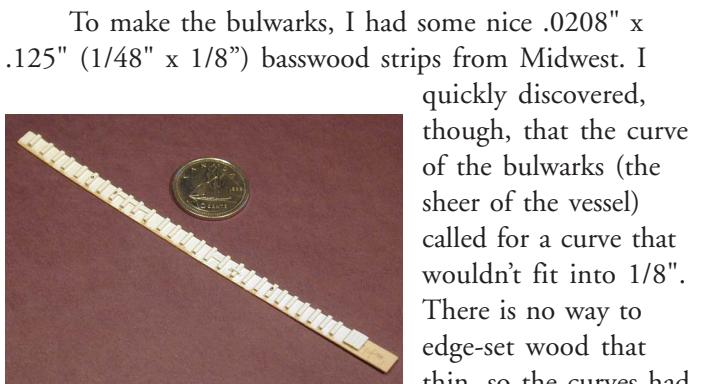
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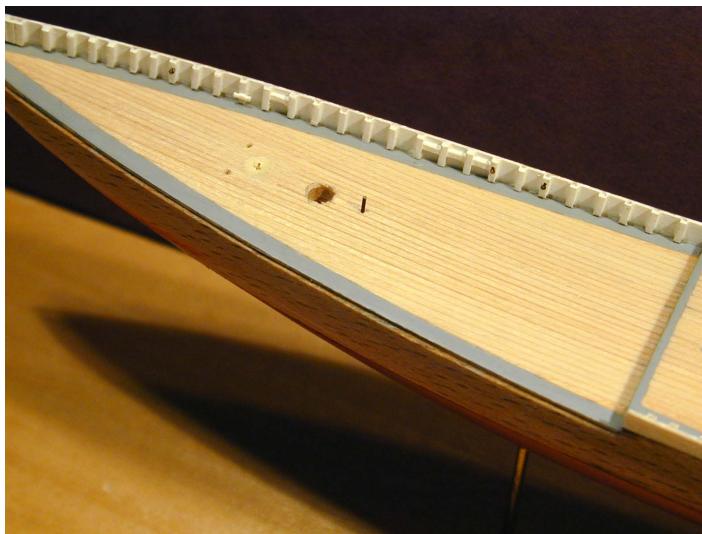
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The forward port bulwarks. The rings are .004" copper wire twisted around a #80 drill bit.

edge-glue two strips together, giving me $\frac{1}{4}$ " wide planks. When they were dry, and the excess Elmer's Carpenter Glue scraped off, I held the strips against the decking, and traced the sheer. The bulwarks were cut to the proper heights, and carefully sanded to a clean fit. I then marked the actual deck level on the base of the bulwarks, and carefully added $\frac{1}{32}$ " square stanchions to the bulwarks, positioned according to the plans.

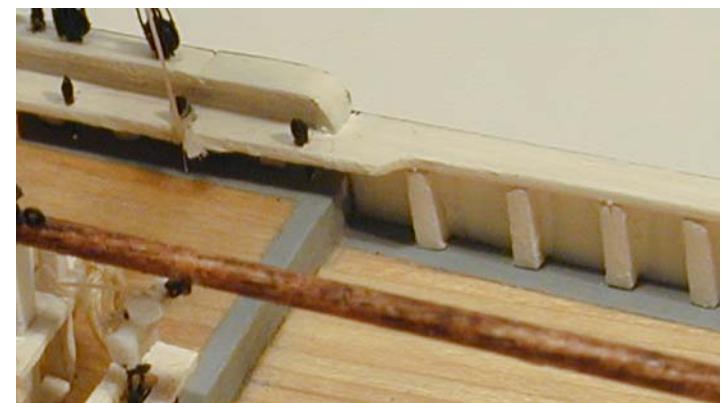


Forward starboard bulwarks installed, and the rebate for the port bulwarks. Note that the hole for the foremast had to be moved aft, unfortunately after the planking was installed. Luckily, there's a scuttle right where the mast used to be.

Fishing schooners have a very distinctive pattern of rails, without which they just don't look right. There is a main rail running along the top of the bulwarks, and starting from the 'great beam' (grub beam in Gloucester parlance) and running aft is a lighter 'monkey rail' about 6" higher on top of the main rail. The main rail also holds the belaying pins for both masts, so that has to be worked into the design.

Here, once again, the edge-glued Midwest basswood strips came in handy. I was able to rough out a strip for each side of the schooner which followed the curve of the bulwarks, and on each of those I marked the outer edge of the rail by tracing the actual edge of the bulwarks. Once I had the outer edge marked, the inner edge was simply a parallel line with appropriate swellings for the pinrails. I trimmed the rails, leaving a little margin for error, and drilled the holes for the belaying pins where needed.

Sometimes the simplest concepts occur to you, and really make your day. I was wondering how to get the rails cut precisely enough that they would follow the bulwarks exactly and overlap just the right amount inside and out. Well, duh. It finally occurred to me to attach the slightly oversized rails to the bulwarks and then shave them to exactly the size needed once they were attached. Once I hit on this principle, getting them cut to precisely the right size was a breeze. A sharp scalpel and some sandpaper did an excellent job of getting the overlap just the way I wanted it.



View from amidships showing the fore rail widening into a pin-rail, with the monkey rail beginning at the grub beam and leading aft. I have to admit I cheated on this photo - I didn't have any shots showing just the rails, so I had to include one taken after she was rigged.

I used the same principle to attach the monkey rail, having laid down $\frac{1}{32}$ " square stock on top of the main rail as a base. I carved the end caps for the monkey rail out of boxwood to provide a finishing touch.

I also added a 'buffalo rail' on top of the main rail in the bow, using square stock from my supply of quibbled materials.

Time elapsed, approximately one year.

Next – rigging.

-Tom Babbin, Natick, MA, USA

Silver Brazing

-by Phil Krol

Silver brazing is a skill worth learning for the fabrication of intricate shipmodel fittings, and can only be learned from experience at the bench. The following article should give you a basic understanding of the materials and methodology.

The first truth you should understand is that silver-bearing solder with a melting point in the range of 400-500°F is not silver solder. It should not be confused with high temperature, hard solder with a melting point in the range of 1200-1400°F. So, to avoid confusion, we will call this silver brazing to distinguish it from all forms of soft soldering.

The main reasons silver brazing is superior are: the brazed joint is stronger than the base metal; fine detail is not obscured with solder; neighboring parts of an assembly will not fall off; joints can be invisible and will chemically oxidize the same as the base metal. You can file away all traces of solder without affecting the strength of the joint. Soft solder is surface-to-surface adhesion, much like glue. The high heat required by silver brazing causes the crystals of the base metal to expand, and the silver alloy flows into the spaces of the expanded metal giving the joint great strength. An example of this is joining the ends of two fine wires, such as a split ring: no amount of bending will cause that joint to fail.



Basic brazing equipment

It is not necessary to go out and spend hundreds of dollars for elegant torches, tanks and regulators. After all, Harold Underhill, the well-known author of *Plank on Frame Models* showed us how he made beautiful fittings by

silver brazing them with an alcohol lamp and blow pipe. Bernz-O-Matic makes a mini torch with a 4 foot hose which attaches to a disposable propane tank, and is available at most hardware stores. The little refillable butane torches of various makes also work quite well. Any of these should cost less than \$50. The Smith Little Torch® with 5 tips is an elegant tool and somewhat expensive. It is a 2-tank system requiring oxygen and a fuel gas. By the time you add a high-pressure oxygen

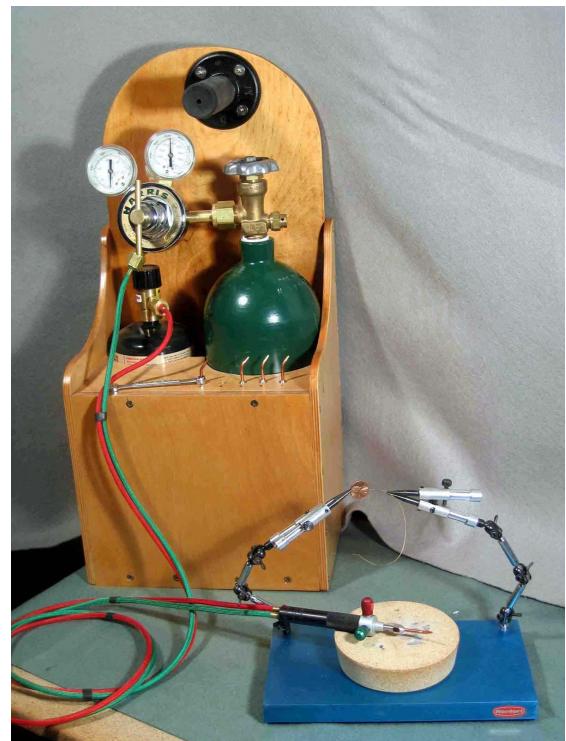
tank, regulator, and a fixed pressure regulator for the disposable propane tank, you have an expense in the range of \$300 or more, but this is just not necessary to get started.

Supplies needed may be obtained from virtually any jeweler's supply house found on the Internet. These include: SEP Jewelry Tools (www.septools.com/catalog), Contenti (www.contenti.com), and many others, which can be found with a search engine such as Google (note: shop around, some suppliers are much more pricey than others).

I will explain each of the items you will need.

- **Flux.** A chemical agent used to prevent oxidation of the metal being joined. I like to use Batters®, a greenish liquid.

- **Silver** comes in sheet, wire and paste form in a range of melting points 50°F apart. I have tried the paste form but find the solid works better. The melting points of the silver are so critical that the 50° separation protects an adjacent joint from melting. However, I have found in practice it is not necessary to have an assortment of melting points, and have done fine with just one, say one melting



A more advanced setup

at 1250°F. You may want to try using two, the theory being that the joint of a close neighboring part brazed with the higher temperature silver will not melt when brazing another part right next to it with lower temperature silver. The percentage of zinc in the alloy largely determines its melting point and re-brazing a joint raises the melting point because some of the zinc is vaporized in the process. Be sure the silver you buy is **cadmium free**. For protecting adjacent joints Radio Shack sells small copper smooth-jaw alligator clips that make excellent heat sinks. One of these placed on a close-fitted adjacent part should assure that it remains intact.

• **Pad.** A magnesium pad, silica rich ceramic soldering board (such as Silquar) and/or firebrick is needed. The magnesium pads are a porous and non-toxic material that can hold pieces that you can stick into them. They measure 6" x 6" x 1/2" and larger, and are heat

resistant. In years of use I have never scorched my bench under the pad. The silica-rich soldering boards are smooth, hard and very heat resistant.

• **Wire.** A spool of soft iron binding wire can come in handy to hold items together. The wire can be filed away if it becomes involved with the braze.

• **Pick.** A titanium probe can be useful as an assist in holding or moving parts while brazing. Silver will not stick to it.

• **Sparex #2®** is a pickling salt (mild acid) that comes in a can in crystal form. A spoonful is dissolved in water and stored in a small glass or plastic jar until exhausted. Brazed parts are soaked in this solution to clean any glaze, scale and oxidation that may have formed on the joint during brazing. While Battersn® flux is touted as self-pickling, I have found that using the Sparex enhances the result. It also acts as a mild micro-etchant, which facilitates chemical oxidation (blackening). The parts should be well rinsed in water after pickling.

• **Saw Frame.** A quality jeweler's saw frame and an assortment of quality blades are useful in cutting small

parts. Blade sizes range from a very coarse #14 to the finest, #8/0. The rule of thumb is to have 3 teeth on the material while cutting. I don't think it necessary to have every size and would suggest 8/0, 5/0, 3/0, 1/0, 2, and 5, which should start you off nicely. Find a supplier that sells them by the dozen - many sell only by the gross.

• **Files.** A set of quality needle files is extremely useful. They come in cuts of coarseness starting with the coarsest, #0 cut to the finest, #6 cut. I suggest a set of #2 cut files and add #4 cut files in the shapes your work

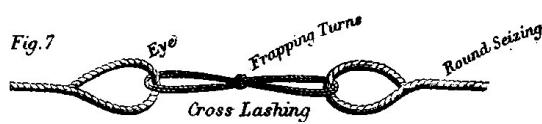
requires. #4 cut files help remove the worst tool marks from the work. While high quality files are relatively expensive, they are a good investment as they last a long time and most importantly, they cut well. Cheap files do not cut very well, nor do they last. Grobet® brand files are about as good as they get, although there are other

brands that may give satisfactory performance.

Now that we are equipped, let's get started. A few rules apply and if followed will assure success. Joints must be made to fit - that is to say, no gaps - as the silver is not gap filling. Edges should be square. Wire must be sawn or cut with a flush cutter or filed or ground flat with an emery wheel. The chisel edge left by cutting with side cutters will not do. The joints must be clean, and free of oxidation or any oily residue, such as fingerprints. Acetone or detergent and hot water will remove any oily residue. Most of the brass we use has a temper, which causes the pieces of an assembly to move when the flame is applied. This can be most annoying and is eliminated by preheat-



The solder flecks



ing or annealing the parts to be brazed. Annealing is accomplished by heating the brass to a cherry-red color and allowing it to air cool, or immersing it in water. This process also removes work hardening, a characteristic of non-ferrous metals when filed, sawed and hammered, and returns the metal to a malleable state.

Solder is not fed into the joint - a fleck of silver is placed on the joint. Flecks are made by cutting tiny pieces from wire or sheet onto a sheet of paper. The resulting pile of flecks varies in size and should resemble ground pepper. If wire is used, hammering it flat on an anvil helps with nibbling the flecks. With some experience you learn what size piece to use appropriate to the joint. The flecks can be stored in a vial, to be available for use when needed. I use a sharpened bamboo skewer as an applicator (I can't bring myself to ruin an expensive artists brush for this purpose). The applicator is dipped into the flux and applied to the joint. It wicks in by capillary action. Use just enough for the joint, not the whole part. Next, with the tip of the applicator still moist with flux, touch a fleck of silver - it will stick to the tip - and apply the silver fleck to the joint.

Light the torch and adjust the flame appropriate to the size of the part. Experience and practice at the bench will teach this. Next, direct flame to the joint, remembering that the solder flows towards the heat, so let that be your guide as to where to place the flame. Once again, practice is the best teacher. Watch the joint very closely and remove the flame the instant the silver fleck flashes. For tiny parts a magnifier helps. If the part is small and the flame is not moved away fast enough, it may incinerate and you will have to start over. This will happen on occasion no matter how expert you become. It is a good idea to keep a small container of water next to your soldering station. This can be used for rapid cooling of a part or used to douse a flame should you be careless with your torch. For safety, it is good practice to keep a fire extinguisher easily accessible in your shop. Needless to say, flammable solvents should be stored well away from your brazing operation.

Remember, a nice fitting with good joints is only as good as the craftsmanship that went into the preparation. I would recommend *The Complete Metalsmith* by Tim McCreight as a useful handbook. While the techniques described are geared to the fabrication of jewelry, many, if not all, also apply to the fabrication of shipmodel fittings. I hope you have found this article helpful in getting started with silver brazing, and hope you will find, as I did, that it opens a new door in the fabrication of quality fittings.

-Phil Krol, Wheaton, IL, USA

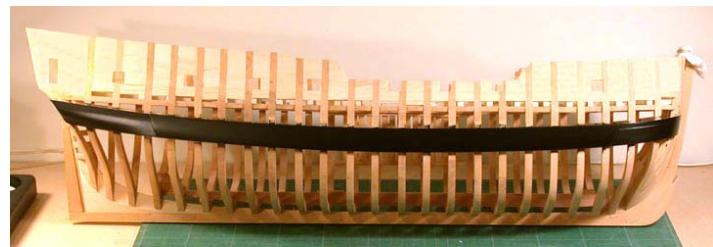
The Secret Agony of Fuzzy Bits

-By David Antscherl

Before you think that this is a disclosure of a highly personal nature, I should confess that this is all about paint.

Recently I was painting the main wale of my current model, *Resolution* of 1773. I tend to do things the older, low-tech way, and was using Humbrol applied with a nice wide flat sable brush. The method I use is to paint, let it dry 24 hours, rub down with 400-grit wet-and-dry paper and repeat between six and nine times, moving to 600-grit and finally rottenstone. The end result – normally – is that by the time you get to layer six a wonderfully smooth satin finish results. But it didn't happen this time. By coat four, when things usually start to look pretty good, I was noticing a scattering of small flecks in the paint layer.

Oh, I thought. Dust particles in the air. Now this was doubly annoying, because not only had I carefully vacuumed out the workshop before starting, I had also installed a special air-cleaner in my new workspace. It is supposed to filter out all air-borne particles above some impossibly small number of microns in size. But here I could quite clearly see 'bits' in the paint, and lots of them.



I re-vacuumed the workshop area, turned on the air filtration for a couple of hours, and started over. Same problem. OK, I thought, the problem must be the paint. I opened a new container and started again. To my amazement and frustration, the result was no different. Specks everywhere! Where were these particles coming from?

Finally, the answer dawned on me. The reason was geographical. Not that I live in the one part of the world where the 'fuzzies' all migrate to, but that this is Canada, in winter. To be comfortable, I was wearing a nice warm wool sweater. Small fibres were coming off the sleeves and settling on the wet paint. This, I finally realized, was the source of contamination.

Don't laugh, but the next painting session I went topless, and the paint job came out, well, spotlessly.

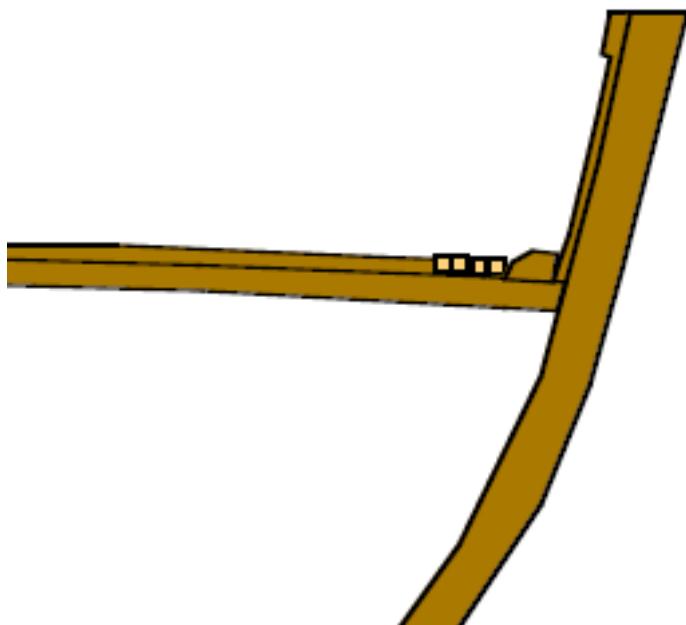
-David Antscherl, Kitchener, ON, Canada

Using Laminations to Form Difficult Shapes on Ship Models

-by Joel Sanborn

One of the more difficult shapes encountered during the construction of a model ship is a wide flat plank which must curve on the flat. You encounter this type of shape with cap rails and the waterway, especially near the bows, but also at the stern of round or elliptical sterns. As it is a wide flat curved plank, it must either be bent on the flat or cut from a wide sheet. Bending on the flat [also known as edge-setting -ed.] can result in 'wrinkles' in the plank as it tries to stretch the outer edge and at the same time squeeze the inner edge to fit the tighter radius. Cutting from a large sheet eliminates the problem of wrinkling but unless plywood of some sort is used, the wood can split along the grain, which will be across the plank at some point along the curve of the waterway.

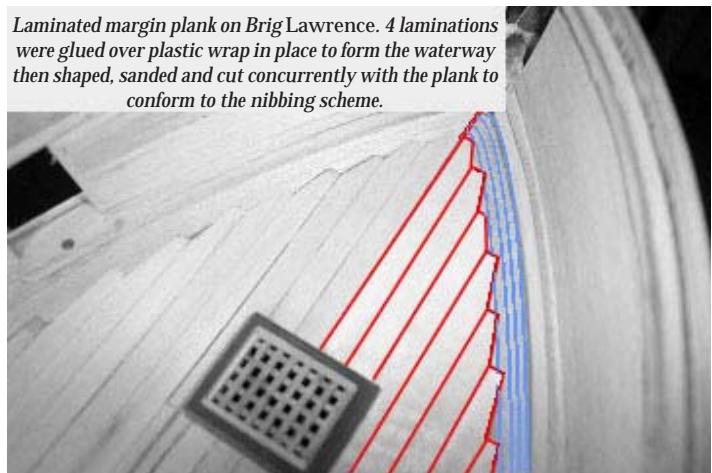
A method that avoids both of these problems is to make up the plank, in the example a margin plank, with laminations. Several thin strips are easier to bend around a curve than one wide piece, and the grain follows the curve so splitting is much less likely.



Here you see the (putative) frame of a ship, the deck beam (less knees, etc.) the lining of the bulwark, the waterway and the deck planking, all in dark brown. The four light brown squares indicate the four strips that were laminated to form the margin plank at the bows of

Lawrence. The desired finished width is less than four widths, so using four allows for trimming and nibbing. A sheet of plastic wrap was placed along the deck beam/waterway intersection to allow separation after gluing. The four glue-coated strips were bent into place and held there with pins and scrap wood strip clamps until dry. The process was done for the other side, and the two cut to fit at a miter joint at the stem and scarf joints to the rest of the margin plank. They were also scraped and sanded to thickness to match the rest of the margin plank.

Laminated margin plank on Brig Lawrence. 4 laminations were glued over plastic wrap in place to form the waterway then shaped, sanded and cut concurrently with the plank to conform to the nibbing scheme.

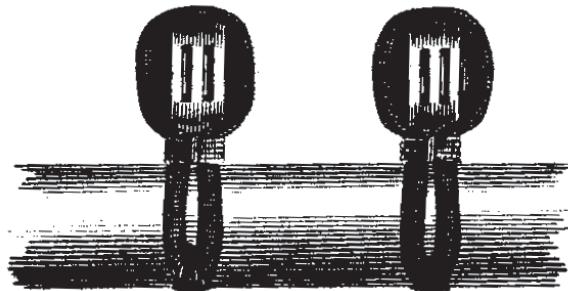


In this photographic representation you can see how the laminated margin plank (in blue) and deck plank (in red) were nibbed at the plank ends. Note that the fourth thickness of the lamination remains only in the deepest part of the notches.

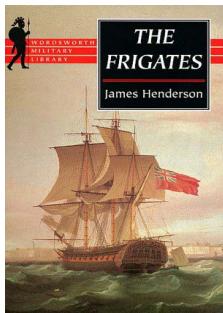
The nibbing was cut in the margin plank and deck plank as the deck plank was being located and cut to length. Each hood end cut on a deck plank depends on the previously cut plank's length for its positioning, so this is something which must be done in sequence.

Trying to cut and fit these nibbings from a plan would seem to be a recipe for commitment, not to a project, but to an asylum, except in the case of preternatural precision both on the part of the plans and of the builder.

-Joel Sanborn, Hanover, NH, USA



Book Reviews



The Frigates - An Account of The Lesser Warships of The Great French Wars From 1793 to 1815

by James Henderson
NY: Dodd, Mead & Co. 1971
176 pp.
ISBN 1199770485

David Antscherl reviewed *Sloops and Brigs* by James Henderson in a recent *Warships to Workboats*. David had also recommended this title to me as background to the actions of the *Swan* class ship-sloops. I read *Sloops and Brigs* with considerable interest. As David says, it is a "good read". It turns out that I had picked up a remainder copy of *The Frigates* some time ago, but I hadn't paid much attention to it until realizing that the author had written *Sloops and Brigs*.

The Frigates, apparently the earlier book, is truly a companion to *Sloops and Brigs*, and it is also a "good read." The writing is much same style, with 16 chapters, each devoted to a specific battle action or action. There are only 176 pages but each page is packed with action. Reading *The Frigates*, one is repeatedly exposed to real-life battle episodes, much like those in the fictional literature of C. S. Forester and Patrick O'Brian.

Early chapters are devoted to background on the Royal Navy establishment, the rating of warships and the function of frigates. Henderson points out that frigates carried 6 months' supplies and could go anywhere in the world. He also makes the interesting point that the space per man was less cramped on a frigate than it would have been on a ship of the line, especially a flagship.

Another point that I found interesting was the observation that most of the heroic battle action during the Napoleonic conflict was between the smaller craft on both sides, such as frigates, sloops and brigs. The reason was that larger ships of the line were tied up blockading the French ports. The exemplary performance of frigate captains during these actions frequently led to their promotion to larger ships.

Henderson also comments on the way patronage played its part in promotions. Surprisingly, assignments to ships were not based primarily on ability. Influential persons frequently circumvented Samuel Pepys' rules of promotion. This allowed young officers of merit to become 'post captains,' allowing them to attain flag rank before becoming too senile. Horatio Nelson became post captain

at age twenty, largely because his uncle, Sir John Suckling, was Comptroller of the Navy. Rear-Admiral Sir Edward Pellew made his son Fleetwood Pellew post captain in the 32-gun *PSYCHE* at age twenty.

Clearly Henderson's book is mostly about the heroic actions of the lesser ships in the Royal Navy. I will briefly mention a few of the more outstanding examples. Since there were many duplicated or frequently changed ship's names, Henderson simplifies life for the reader by naming English ships in all capitals and enemy ships in italics. I have elected to do the same here.

A number of successful actions by captain Edward Pellew in the *NYMPHE*, *ARETHUSA* and *INDEFATIGABLE* ultimately led to Sir Edward's last frigate action in which he, commanding *INDEFATIGABLE*, took on the *Droits de l'Homme*, a 74-gun ship, and defeated it. This, despite the Admiralty rule that a frigate should not engage a 74. Sir Edward later took command of a squadron of line-of-battle ships.

Fleetwood Pellew distinguished himself by taking a number of prizes while captain of the *PSYCHE* and later was promoted by Sir Edward to command of the *PHATEON*. Unfortunately the younger Pellew developed a reputation for brutality and had difficulty getting ships, in part because no one wanted to serve under him.

Captain Lord Cochrane, although illegally enrolled on the books of various ships, was unable to tolerate any injustice he might see. In the process of defending a colleague he alienated the Admiralty and subsequently found difficulty in getting a ship worthy of his ability. Given a small brig, he terrorized the Mediterranean coast, capturing 50 ships, 122 guns and 534 prisoners. Cochrane finally got a frigate, the 32-gun *PALLAS*. His Azores cruise was highly profitable. Later, off the estuary leading to Bordeaux, Cochrane decided to take one of the brigs guarding the entrance. The *PALLAS* anchored outside and all the frigates boats were sent in to take the brig *Tapageuse*. The total casualties were three men wounded. Meanwhile, *PALLAS* saw three ships approaching: *Garonne*, *Gloire*, and *Malicieuse*. Between them, the French ships carried 56 guns to *PALLAS*'s 38, but they showed no desire to engage. *PALLAS* ran all three ashore where they were dismasted by the shock of running aground.

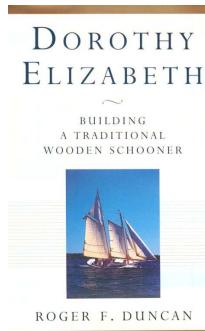
The French had set up a system of coastal signal stations to track the movements of the British fleet. In another action, Cochrane, leading landing parties, destroyed six of these stations.

Cochrane further distinguished himself by engaging *Minerve*, a ship of twice his firepower. Having shortened her sail with a broadside, his tactic was to stay close to her

so that the shore batteries could not fire for fear of hitting their own ship. Fighting off two brigs and being approached by additional enemy, Cochrane thought to board *Minerve*, but in the ensuing collision *PALLAS* was heavily damaged by the larger ship and had to hurriedly disengage to escape.

The Frigates is full of the actions of British frigates during the Napoleonic Wars. It is definitely to be recommended as another good read.

- Bob Powell



Dorothy Elizabeth - Building a Traditional Wooden Schooner

by Roger F. Duncan
NY: W. W. Norton & Company, 2000
Hardcover, 240 pp.
ISBN 0-393-04904-3

This is the heartwarming and interesting story of a couple in their eighties who set out to build a boat. Sailors all their lives, they realize their current boat is too large for them at their particular stage in life and they decide to exchange it for a smaller, more easily-handled vessel.

The book chronicles the two-year gestation period of the small wooden schooner they decide to build, and takes the reader on a journey fraught with serious health issues, the difficulties of finding authentic period furnishings and fittings, human frailty, the sense of the clock ticking, and the everyday obligations of life diverting their time away from building.

Set in scenic East Boothbay, Maine, the author is a retired teacher who has a talent for writing* which places the reader in the boat shed right alongside him, facing the many decisions to be made during the course of the building project. It's also a story of "family" which encompasses not only the author's family - spanning three generations - but also the community in which he lives, drawing on the skills of the many diverse friends and tradesmen who each have a role in the completion of the schooner.

This is not a reference or a modeling text, but rather a book to be enjoyed whilst sitting in front of the fire on a chill winter's eve, a warm brandy on the end table beside you.

-Bob Steinbrunn, Stillwater, MN, USA

*Roger Duncan is also the author of the well known *Cruising Guide to the New England Coast* series -ed.

Research 101

-by Russell Barnes

For some time, I have noticed that some ship model builders have been having trouble accessing information they need for the research on their particular ship-modeling project. One reason for this problem is that they do not have any experience doing research and thus do not know where or how to look for specific information. In an attempt to give guidance and clarify some of the methods by which ship-modelers can find the information they seek, I have put together a few thoughts on the subject of basic research methodology. This is a method by which one can research any topic. Call it Research 101.

Every good research project begins with a topic. Let us say for example that you want to research USS *Constitution* because you want to build a model of her as she appeared in 1812. You will need to access a lines drawing, of course, for that is what the model will be roughly based upon. You can get some construction details from both primary and secondary resources for the ship's history. You will need a masting and rigging plan for that period, and all of the various and sundry details that will go into building the model. To get at these details, you will have to sift through quite a bit of her history including information that does not really go into building a model.

To begin, look for books about the ship. You can find these by going to a well-equipped library where you can use their internet connection to search through library catalogues all over the country. A public library may or may not have such worldwide access, but a university library almost certainly will have it. Their access includes resources like "WorldCat," as well as their own library database and other search engines for accessing journal, newspaper, and magazine articles. The problem with university libraries for most people is that they only cater to students or alumni. If you are not thus affiliated with the university they will not be able to order material for you, although you can read whatever they have on-site. If you can not get access to a university library, then try and find a well equipped city library that either has an outstanding collection of relevant material or can get material through interlibrary loan.

When searching the library catalogue, use keywords like "frigate *Constitution*", "USS *Constitution*", "US Naval History", "War of 1812", and so on. Take some time and consider the use of search terms. Be creative and use as many search terms as you can think of to ensure that you have accessed as many relevant titles as possible. This is a part of the process where imagination is an absolute

necessity. Terms like "frigate," "44 gun frigate," "Joshua Humphreys," "Quasi War," and many others can call up useful sources. Remember, the computer will only search for terms exactly as you use them. For that reason alone, do not assume the computer is acting in your best interest.

Once you get a good sized bibliography started (say 15 books in this case), look at the various book citations and to see if there are a handful that immediately scream "READ ME!". Of course, you will see Tyrone Martin's *A Most Fortunate Ship*, and judging by his first hand experience, which is included in the citation blurb, you will want to begin with that book. There will be a few others that you can order through interlibrary loan as well, such as Chapelle's *The History of the American Sailing Navy* and Arnot's instruction booklet for Bluejacket's model of the *Constitution*. Here is where it pays to have access to a really good library with a long reach. You can always surf the internet to buy the books you want, but if you can get them on loan, so much better. The best quality research will generally find its way into a university press. This is not an absolute, but you should be guided by it. If you see a book that came through a university press, take a good look at it, as it will probably be useful.

Another source that you should take advantage of is journal articles. Even articles that come from non-juried publications like *Nautical Research Journal* and *Seaways Ships in Scale* are likely to have useful information. Most libraries have two ways in which you can search for journal or magazine articles. There is the old fashioned way of looking through indexes such as *America: History and Life*, which specializes in North American topics, and *Historical Abstracts* for European topics. You can also try the *Humanities Index*, which carries most every topic, regardless of geographic area. These are bound volumes completely indexed and going back 60 years or so. All of these hard copy collections have been computerized and can usually be accessed through via the library's computers. Again, the ingenuity used in creating search terms for book research will be useful here as well.

Now, after reading a few books and articles, comb through the sources that the various authors have listed either in endnotes or bibliography. In fact, the first thing I look at when reading a book or article is the bibliography and/or endnotes. This exercise does two things for me: first of all, I see what sources the author has used in his research; second, and of great importance later on, I see that he has used sources and taken time to account for them. By doing so, the author lets the reader know that he has done his homework, and the validity of his work is increased. From combing the endnotes and bibliographies of the various sources, your working bibliography is expanded

and you begin to look for other key books as well as relevant journal articles that cover key elements of detail for your model project. Chances are you will find some obscure and very useful source, like articles on cannons, sail plans, rigging details, deck arrangement and so forth, that you did not find in your library search, by combing through the various bibliographies of other writers. You can then order these journal articles and books through the library.

Of course, one obvious source to examine is the Internet. One can find something on almost anything with a Google search. The problem is often not so much what can be found, but the accuracy of what is found. As more and more information is made available on the net, the accuracy improves. When viewing sources on the net, look for a bibliographic citation of some kind, much as you see in a book or article, telling you the location of the source material being used by the author.

Another way in which the Internet helps researchers is by providing easier access to archives that house valuable primary sources, such as the National Maritime Museum in Greenwich or the Smithsonian in Washington. Sometimes, all it takes is clicking on the contact link to email the curator or the staff to get the information you need. Sometimes, it is a bit more complicated because an archive may be set up for on-site research, rather than being able to handle massive amounts of mail requests. It is important to remember that the archivist is much more likely to help you if you go there and physically access the collection. That is why there is an archive in a building: they want you to come to them and use their material on site. Most archives are simply not equipped to handle things over a distance. In any case, the net can put you in touch with many archival collections containing valuable primary source material and the good researcher will learn to access archival material.

Speaking of archivists, an important point to remem-

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Once again, we would like to thank Worldnet Communications for their generous hosting of Warships to Workboats and the Modelshipwrights and Warrior web sites.



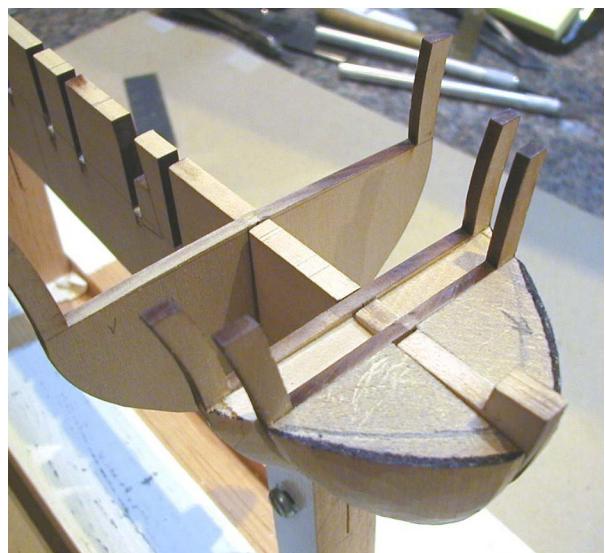
Bits & Pieces

Ever have a great idea for a modeling tool? Ever create a subassembly that you're justifiably proud of? Well, here's your chance for fame. Send us a paragraph and a picture or two, and we'll post them here. Everyone has an *"Aha!"* moment from time to time, and this column will highlight several of them in each issue. Send your Bits & Pieces to Neb Kehoe at nebk@together.net.

Carving Bow and Stern Filler Blocks the Easy Way

Many plank on bulkhead kits recommend that filler blocks be used to shape the bow and sometimes the stern of the model. The instructions usually recommend gluing the blocks on either side of the profile former to the first bulkhead after all the bulkheads have been glued in place and then carving to the proper shape.

When I looked at this method, I realized that the entire length of the center profile former and all those bulkheads would have to be handled while carving and, more times than not, they would be in the way as the filler blocks were shaped. To eliminate this problem, I attached the filler blocks to the forward-most bulkhead before it was glued to the profile former, leaving a space the proper thickness between the blocks for the profile former to be inserted later. A piece of scrap wood the same thickness as the profile former was cut to the shape of the bow profile and was temporarily slipped between the blocks as a guide for carving, and to support the bulkhead so it would not split. (See photo, right)



This method allows you to carve the filler blocks with the bulkhead off the long profile former. It is now easy to hold the piece and turn as needed to carve and sand. The assembly can be slid on and off the profile former to check progress until it is correctly shaped. (photo, left)



This same method can be used for the stern filler blocks, again making it easy for the blocks to be worked on without the long profile former being in the way. (photo, right)

-Wayne Drusch, Spring, TX, USA

Research 101

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ber is that you can get more help from a given archivist over long distance if you are well spoken, organized, professional in your approach, and most importantly NICE. This point can not be too strongly emphasized. There is that old saying, "You can catch more flies with honey than you can with vinegar." Practice this when dealing with archivists and it will benefit you beyond measure.

Now, back to the research. After you have read

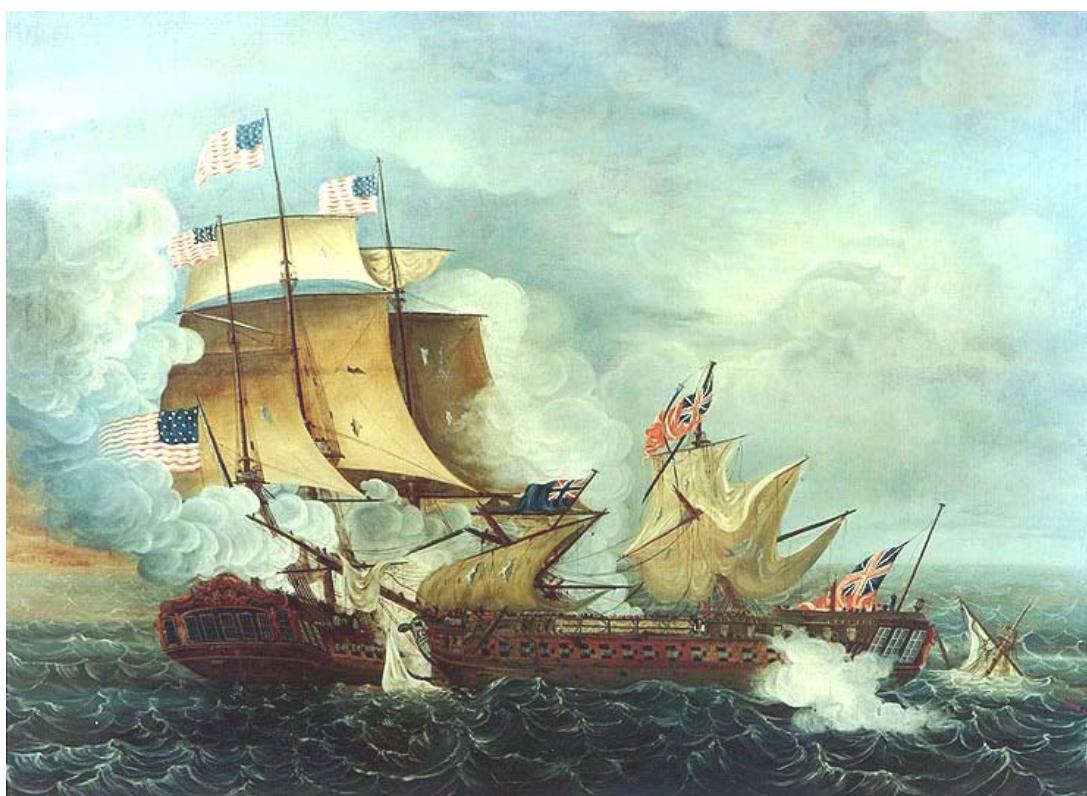
through a bit more literature on the *Constitution*, you can pick out a few books that you simply must have for your personal library, so you look on the net to see where they can be had for the best price. You can also turn to the internet for other research. Here is

where you find the many web sites dealing with the *Constitution* and her history. You will run across Tyrone Martin's web site and find you can buy a copy of his notes for ship modelers for \$20. You will also find the Naval Historical Center web site where you can get a CD of *Constitution* plans for \$15. All are very affordable and accessible. You can also browse the net for e-mail or snail mail addresses of some of the archives that house those precious primary sources that you have found through searching book and journal bibliographies. By keying in on books and articles that are juried [sometimes called peer-reviewed -ed], you know that they will have complete bibliographic citations that tell you where the primary

source material is located. Non-juried books and journals may also contain useful citations, but juried material will be the most reliable.

Once you have read through a dozen or so books, about 10-15 journal articles, and contacted archives and gotten copies of relevant source material (or traveled to the archives to do the research), you will have amassed a considerable volume of information. One of the worst mistakes made by the average researcher is the failure to properly organize material once they have it in hand. In order for the material to be useful, one must be able to find it. Everyone has a different system, but if you do not have a

system, get one. If you are unsure how to proceed, then I would suggest a filing system arranged alphabetically or by category, such as "hull design," "construction details," "masting and rigging" etc. If you have a quantity of copied



USS Constitution and HMS Guerriere. Painting attributed to Thomas Birch

material from various archives, then you may want to place everything in a three ring binder with tabs to show you where vital information is located.

Now that you have a lot of information (you never have all of it) you can begin to get an idea of how your project will develop. There are still holes to be filled in that call for special attention. Each different project will demand different approaches on some details, but the library and Internet can be combined to find almost anything these days. The key to any research is to be tenacious and creative in your search. Keep at it and don't give up.

-Russell Barnes, Biloxi, MS, USA